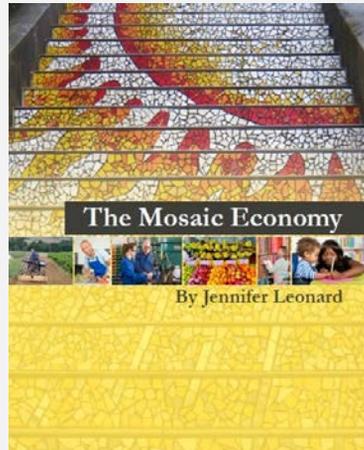


## The Mosaic Economy: Manuscript Preview



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# **The Mosaic Economy**

**By Jennifer Leonard**

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# Contents

Preface .....	3
Acknowledgments .....	5
Introduction: Careers and the Mosaic Economy .....	7
1   Personal Values and Careers .....	17
2   Foundations of a Healthy Market Economy .....	27
3   Income Inequality .....	41
4   A Fresh Look at Labor Market Data .....	51
5   Education and Careers .....	75
6   First Career Steps .....	83
7   An Entrepreneurial Economy .....	107
8   Manufacturing .....	119
9   An Artisanal Economy .....	131
10   Creating Health and Wellness .....	135
11   Building Community .....	143
12   Creating Personal Living Environments .....	149
13   Exploring Science and Technology .....	153
14   Politics, Culture and Dissolving Barriers .....	159
15   Work, Education and Systems Thinking .....	163
16   Telling Stories .....	169
17   Lessons for Career Development .....	173
Discussion Questions .....	177



## **Preface**

**T**he **Mosaic Economy** is a description of the many varieties of economic activity that come together to provide a mosaic of jobs and economic opportunities.

The idea of a mosaic suggests that it is possible to look at the economy in different ways, allowing different pictures to emerge. The idea of a mosaic encourages readers to form their own interpretations of the economy, seeing different patterns and themes each time they take a fresh look.

The focus of “The Mosaic Economy” is on leading a gentle, inviting conversation. Many economic analysis are full of urgent "ought-to" messages, leaving audiences and readers feeling somewhat drained and powerless. I want people to feel empowered as they read. They should be creatively empowered to “add to” the story of the mosaic and personally empowered to take small positive steps to build their own careers, support others in their career development, or know that they can have a positive impact on the economic development of their communities.

One aspect of the book is an emphasis on good story-telling. Brief interviews, personal stories and stories from history are woven into every chapter, along with statistics and analysis.

Through these stories, statistics and history, the book provides examples of the small things people do to build community, bridge gaps among groups of people, and create entrepreneurial businesses. There is an emphasis on organic, natural ways that careers are built, businesses are started, positive values are pursued. There is an acceptance of less-than-perfect career paths, and an appreciation for the way that positive trends in business and careers build the foundation for future opportunities.

I wrote this book as a way of sharing ideas that I've gathered throughout my career. I have worked in many aspects of economics and career development. I worked for nine years for the state agency that manages unemployment insurance and re-employment programs, and then started my own consulting business, The Skills Library. In my consulting work, I work with a variety of youth employment programs, school and colleges and nonprofit organizations. I have taught economics part-time for fifteen years and presented numerous workshops on careers and youth employment. Through this work, I have been immersed in the question “where are the jobs” and have enjoyed working with friends and colleagues to explore fresh perspectives on jobs, careers and labor markets.

Many of the interview excerpts come from the Career Outlook Interview, a collection of informational interviews that I have been working on for several years. I have used this interview form as part of student projects, having students interview mentors, guest speakers and others, and have also used it as an online interview, soliciting interviews from a network of people through person-to-person contact and social media. You can browse interviews and complete an interview about your career on my website at <http://skillslibrary.com>.

All of the career-related questionnaires, checklists and surveys described in this book are also available for printing and sharing on my website at <http://skillslibrary.com>.

## **Acknowledgments**

**T**his book draws from surveys and interviews, and I am indebted to colleagues, friends, and family who completed career outlook interviews and who reached out to others to get survey responses and interviews. I am also grateful to everyone who has read this manuscript and provided feedback, and to colleagues in youth employment programs with whom I can always exchange ideas. I am especially grateful to Rachael Novak, Kristi Cigal, Michelle van Schouwen, Molly Zeppa, Linda Younis, Shari Cornett, Zelia LaGarde, Loretta Dansereau, Tom Misiewicz, Emily Dibble, Hom Sack, William Murrell, Ernest Coston, Ruth Wong, Doug and Judy Hall, Bob and Karen Hohler, Dan d’Heilly, Karen Wynne and Franco Campanello for exploring ideas with me about economics, careers, youth development, systems thinking and community development.

In the chapter on career values I describe my appreciation for the career values shared by my parents, William and Kathleen Maher. And I am grateful for the role of my daughter Mary Leonard and many of her friends, not only for all the career interviews they have done, and for discussions and feedback, but more importantly, that they have been my constant anchor and source of insight into the strengths that children and young adults bring to their education and future careers.



## **Introduction: Careers and the Mosaic Economy**

**T**o respond to the question “Where will the jobs be in the future?” I like to describe the economy as a “mosaic economy,” like the pieces of colorful broken ceramic that come together to make a coherent whole. The idea of a mosaic makes it possible to look at the economy in different ways, allowing new pictures to emerge. Themes of personal environment, community connectedness, artisanship, and entrepreneurship are part of the mosaic. A re-emergence of manufacturing and agricultural work is also part of the picture. Technology-oriented jobs, and working with software, medical research, green technologies and other emerging fields are part of the mosaic. Interdependent public, nonprofit, and private sector projects and organizations blend together to form the mosaic.

One day, several years ago, I was at a conference, listening to a luncheon speaker lecture on the topic of “Where will the jobs be in the future?” The speaker was lamenting the loss of manufacturing jobs and lamenting that they could not be

adequately replaced by what he called “low wage, low skilled jobs in the food service sector.”

“Hmm,” a co-worker said to me, “Do you think that was kind of an insensitive thing to say while the wait staff was clearing our tables after lunch?” I loved this comment, and think of it as symbolic of the important art of looking at job markets and economic trends with a more open mind and open eyes.

After several decades of worrisome economic events, it can be challenging to provide a positive, compelling narrative about where the best job opportunities are, or where the best job opportunities will be in the future. Many cities, towns, and regions that once had very visible employment opportunities—mills and factories, farming and fishing—have now lost much of that market. It is now harder to look around in a city or town and answer the question “What do people do for a living here?”

Conversations about job opportunities are overlaid with worries about a post-industrial, post-peak-oil, post-globalization, debt-burdened future. We worry about corporate greed; about lack of global competitiveness; about the environment; about trade deficits and budget deficits; about whether young people are getting enough education to be competitive in a global economy.

In the midst of our concern, we start to envision a rust-belt future, with not only manufacturing jobs, but also business services, health services, technology, and engineering jobs outsourced to workers in other countries. We may imagine a post-peak-oil economy with the knowledge that the energy-dependent lifestyle of the past century will no longer be possible. We may worry about growing economic inequality, with a wealthy elite who control corporate resources and decision making, and a lucky few others working in creative and fulfilling jobs, while the majority of people work in jobs with little economic security, socioeconomic mobility, or personal fulfillment.

Job market forecasts published by the government have provided a less-than-compelling story, with projected growth in non-manufacturing occupations, particularly retail, healthcare, education, and construction, but decline or flat growth in manufacturing and agricultural occupations. Accompanying analyses trumpet the need for current workers and new workers to be “prepared to compete” for jobs in growing occupations. Analysts often focus on whether there are enough “good jobs,” and until recently have pushed the idea that most workers must have four-year college degrees in order to compete for jobs in a post-industrial economy.

Yet many of these concerns are based on a view of jobs as a scarce, limited commodity. Concerns about competitiveness are based on an economic model in which jobs are a limited resource that individuals must compete to obtain, with competition taking place both on an individual level locally and globally among nations with different labor costs, skill levels, and educational attainment.

A more optimistic view sees the economy as a dynamic system in which individuals and organizations have the power to create supply and demand, to launch new projects, and to create opportunities to work.



The “mosaic economy” concept presents an optimistic view of an ever-evolving job market. The goal is not to present a series of “ought to” prescriptions, but to present a look at what is currently happening in the job market and what is likely to happen in coming years. The concept draws from basic economic theory, looking at what makes a healthy market system, what barriers interfere with healthy markets, and what the potential of the “invisible hand” of markets might be. In a contemporary economy, this is not a “laissez-faire” small-government, private-sector

view, because clearly the public, nonprofit, and private sectors are thoroughly intertwined in forming the contemporary mosaic economy.

Given this approach, is it reasonable to try to create a positive narrative from the “mosaic economy” themes?

Early in my career, as an economics instructor in the evening program of a community college, with many first-generation college students and recent immigrants in my class, I did not have the option of settling for a pessimistic view of the economy. My students were attending school at night while working full-time, running small businesses, and taking care of families, while investing heavily in their futures. They were optimistic about the U.S. economic system and were eager to understand it better. Many were first-generation college students from all of the different neighborhoods of Boston and immigrants from all over the world: from Africa, the Caribbean, Asia, Latin America, the Middle East, and former Soviet block countries. I provided their first formal instruction in economics, teaching how a market system works, what role government plays in the U.S. economy, and how to apply economic models to understand real-life markets. They provided examples from their experiences. One student was a self-employed hot dog vendor, aspiring to begin a career as an entrepreneur. Another, a worker on the nighttime janitorial crew at the State House, shared his observations about politicians and his interest in politics. A refugee from Bosnia contrasted the roles of government here with the roles in her country, sharing a sense of amazement at the differences. Whatever the topic and whatever the current issues of the year, the students had an underlying hopefulness about the future.

Another experience that elicited optimism was the work I did with the state unemployment agency during the late 1980s and early 1990s. My colleagues and I were organizing and overseeing services for laid-off manufacturing workers, mid-career professionals, and others who were out of work during an era of downsizing, de-industrialization, globalization, and tech boom/bust cycles. We developed re-

employment seminars, self-employment start-up programs, and career management seminars to help people find their way in the rapidly-changing economy. Amidst worrisome news, I was always able to find some good news in our data, including survey findings from laid-off manufacturing workers that showed good outcomes from re-training programs and surprisingly high levels of satisfaction with the new jobs--both manufacturing-based and non-manufacturing--that they had found.

As an economics instructor, I have taught the idea that, if given the right environment, a market system will develop production and distribution networks to create the goods and services that people want; to enable people to participate in production; and to allow people to purchase these goods and services for themselves and their families. The market system is often described as an “invisible hand,” reflecting the idea that entrepreneurs, workers, and resources come together naturally, somewhat spontaneously, without the need for anyone (government, a leadership elite, etc.) to manage the process step-by-step. Economists also use the word “self-correcting” to imply that economies may go out of balance for a while, but, given the right environment, will “self-correct” to return to a healthier equilibrium.

Is it possible that the self-correcting tendency of a market economy can allow society to act effectively, on a reasonably large scale, to create opportunities that meet people’s needs to find fulfilling work and have sustainable lifestyles? Is it possible that self-correction can happen somewhat organically, and become widespread beyond a few visionary projects?

If so, a transition from a primarily manufacturing-centered economy to a primarily service-centered economy will not ultimately result in a world of “low wage, low skilled jobs in food services” (in the words of the conference speaker). It is more likely to result in a world where people creatively generate meaning in the work they do, with “food service sector jobs” and other service-sector work becoming organized to create community connectedness, healthier environments, artistic expression, and personal meaning. It is also likely to result in a world where

agricultural and manufacturing knowledge, as well as skills and craftsmanship are never abandoned, but are re-claimed and used effectively by individuals and entrepreneurs who wish to capitalize on the value of generations of knowledge. The transition to a service-centered economy with livable wages and meaningful work will not take place gracefully or immediately; but it could happen with the right economic environment.



We are not the first generation to make efforts to rediscover fulfilling work and to preserve past knowledge and skills. For example, Laura Ingalls Wilder, famous as the author of the “Little House” children’s books, wrote articles in the early 1900s about the “back-to-the-farm” movement that was then taking hold.<sup>1</sup> In 1911, in the Missouri *Ruralist* newspaper, Wilder wrote “there is a movement in the United States today, wide-spread, and very far reaching in its consequences. People are seeking after a freer, healthier, happier life. They are tired of the noise and dirt, bad air and crowds of the cities and are turning longing eyes toward the green slopes, wooded hills, pure running water and health-giving breezes of the country.”<sup>2</sup>

Wilder wrote about poultry raising, labor-saving approaches, bookkeeping for the small farm, and the importance of equality between men and women in farm life. She wrote about people who were reclaiming farmland that had been overworked and then abandoned. She wrote about the social and cultural connectedness of rural

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<sup>1</sup> In one article, Wilder quoted statistics that “there has been a decline of comparative rural population since 1790, when nine-tenths of the people were on farms. The present census showed that not more than one-fourth lived on the farms, and... in 1920 not more than one-fifth would be on farms.”

<sup>2</sup> Laura Ingalls Wilder, “Favors the Small Farm Home,” *The Ruralist*, 1911. Reprinted in Laura Ingalls Wilder: A Family Collection. Barnes and Noble, 1993.

living and of the innovations—telephones, daily newspaper delivery by rural post, and the development of interurban public transportation—that allowed rural women to enjoy the same social and cultural life as their sisters in the city. Except for differences in the list of innovations, her writing could easily be mistaken for back-to-the-farm writing today.

For other examples, think of Henry David Thoreau retreating to Walden Pond in 1854 to rediscover nature and solitude, escaping the materialism of nineteenth century industrialized life in New England. At Walden Pond, Thoreau was determined to learn to grow his own food and live more simply. Or think of William Morris and the Arts and Crafts movement, which also occurred in the nineteenth century, characterized by a return to simpler technologies and craftsmanship.



There is plenty of evidence from around the world to suggest that an economy can be very dynamic and that jobs are not a limited commodity. Observers of economic and environmental trends tell stories from around the world of resilience in periods of economic crisis. For example, in “Hope’s Edge: The New Diet for a Small Planet,”<sup>3</sup> Frances Moore Lappé and Anna Lappé write about people around the world who have taken action to create food systems that meet local needs. Or, for example, in *Deep Economy: The Wealth of Communities and the Durable Future*,<sup>4</sup> Bill McKibben writes about farmers re-discovering highly productive organic farming

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<sup>3</sup> Hope's Edge: The Next Diet for a Small Planet, by Frances Moore Lappé & Anna Lappé, Tarcher, 2003.

<sup>4</sup> Deep Economy: The Wealth of Communities and the Durable Future, by Bill McKibben, St. Martin's Griffin Press, 2008.

methods. In the Sunday magazines of my favorite newspapers and in my favorite websites, I read about signs of resilience from around the world. I read about emerging signs of resilience in Greece during a period of economic crisis, with people returning to the countryside and rediscovering the natural assets that the country has to offer.<sup>5</sup> I read about a struggling city where residents transform vacant lots to community gardens and where farmer's markets arise in downtown squares. I read about a family-owned factory that has expanded production after almost shutting down.

We are not the first generation to reclaim traditional production methods or to reconnect with our communities. Nor are we the only nation taking action to transform food systems and rediscover organic growing. In any healthy market economy, it is natural that entrepreneurial behavior will rediscover and reclaim valuable and underused resources, including rediscovering and reinvigorating traditional production methods, health-related knowledge, community assets, and more.

The concept that a healthier, more balanced “mosaic” economy can be realistic is premised on the important phrase “given the right environment.” Even the most laissez-faire economists agree that society needs to be organized in a way that is stable, that some basic public goods and services must be produced in common, that market imperfections, such as monopoly power and imperfect information, must be addressed, and that the job market should be supported by both an economic safety net for those who need it, and by a system of career development support for those who are preparing for and seeking work.

In today's economic environment, how should communities, schools, and career development programs support students, young adults, and current workers as they

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<sup>5</sup> New York Times magazine article “The Way Greeks Live Now,” by Russell Shorto, February 13, 2012.

navigate their careers? What is necessary to allow the development of a healthy job market?

First, it is important to remove barriers to the free flow of information and ideas. For the past few decades, many inflexible messages have created barriers to the development of economic ideas. Messages about the end of manufacturing have impeded investment in infrastructure and education that could have better supported the continued development of manufacturing and production. Messages about the inability of children in the United States to compete globally have led to narrowing of curriculum and a more anxiety-ridden educational system. Messages about the need for everyone to attain a four-year college degree have created barriers to a more natural flow of educational investment.

More recent news shows a greater-than-expected need for workers who are prepared for manufacturing jobs and for middle-skilled jobs. Recent news shows better-than-expected growth in the manufacturing sector. And patterns in the job market show the strengths of a dynamic market economy in which ideas can flourish and jobs can be created, even with competition from global markets.

It is also important to remove messages that create barriers between generations or barriers between different socioeconomic groups. Messages such as “youth are better than older people at understanding technology” or “today’s students are falling behind the rest of the world” or “the average worker doesn’t care about building healthier communities” should be replaced by more common-sense messages that recognize common strengths. In addition to changing the way we talk, it is clearly even more important to truly build connections between generations and between socioeconomic groups in order to nurture these common strengths.

It is also important to create a simpler, more open-minded vision for building career readiness for youth and for current workers, based on the idea that the economy is dynamic, offering an ever-changing mosaic of opportunities. In an economy that will be shaped by the participation of new and current workers and

entrepreneurs, career readiness depends on having a broad and flexible foundation, and allowing and encouraging people to invest time and money in the educational fields of their choice.

Most importantly, as part of this vision for career readiness, students should have opportunities to develop interests and passions, so these interests and passions can be a starting point for further study, personal exploration, or career development. Rather than narrowing the focus on career training or academic competitiveness, students should have opportunities to enjoy the arts, journalism, science, technology, engineering, design, environmental study, math, media, and other interesting areas. They should have opportunities to organize community events, participate in community service, work on leadership projects, participate in arts programs, and explore books and media on all types of subjects.

A vision for career management for adults who are already in the workforce is similar. Through whatever community networks we have, it is valuable to continually renew interests and passions, build skills and knowledge, and try out a variety of projects, from personal to community to workplace efforts. In a dynamic, mosaic economy, the possibilities are unlimited.

## 1 | Personal Values and Careers

A century ago, in January 1912, mill workers in Lawrence, Massachusetts held a strike now known as the “Bread and Roses” strike. In the way that folklore often mixes with history, there is a popular belief that the women strikers carried signs based on the poem “Bread and Roses” that said “We want bread, but we want roses, too!” We don’t know whether this was true, and whether the strikers knew of the “Bread and Roses” poem, which was written by James Oppenheimer and published in *The American Magazine* in 1911. Yet we do know that in the Lawrence strike, and in other strikes and campaigns around that time, themes of dignity and respect intermingled with themes of fair wages, supporting a long-held idea in our culture that workers value their work, not only for wages, but for how it fits with the values they hold.

There is an economic aspect to the quest to find work that fits our values. While we as workers are “suppliers” offering valuable skills, talents and time, we are also essentially “buyers” in search of the resources and investments that will provide a platform for our work. It is one thing to envision the type of work and life you want.

It is another to find opportunities that allow you to express those values. The *Bread and Roses* poem declares:

“Our lives shall not be sweated from birth until life closes;  
Hearts starve as well as bodies; give us bread, but give us roses!”

Very simply, workers want to work for companies where the wages, working conditions, customer relationships, products and social values are in accord with the things they value. The availability of these desirable job opportunities depends on a healthy economy in which workers can choose to work for companies that offer these conditions.

There is a personal aspect to the quest to find work that fits our values. We seek out career paths that correspond to personally-held values and we also experience the serendipity of discovering personal values through our jobs.

A retired electrical engineer who worked on computer hardware from the earliest mainframes to PCs talks about valuing being connected with innovations that drive economic growth. A civil design engineer talks about valuing participation in projects that shape the community, such as athletic fields and residential developments. An interior designer says that “home and calming living spaces” are strong values, as she talks about design elements she has chosen for a design project she is doing for a women’s shelter. A construction contractor describes his work as a creative art, saying that he values working with his hands and being able to design, build and fix almost everything. A coordinator in a preschool program talks about coordinating the work of volunteers and undergraduate student interns, valuing the opportunity to mentor and support future social workers and teachers.

When we ask people what they like about their jobs and how they got to where they are, they often mention their original goals as well as things they have discovered along the way. People will say things like “I knew I wanted something related to math,” or “I have always liked fixing things” or “I definitely knew I wanted to be in a medical career.” They will also mention the subtle and not-so-subtle things

they find that they like in their job – a wide scope of responsibility or a variety of tasks, the interestingness of the product or service the company provides, the interaction with customers or students or patients.

The process of discovery unfolds throughout our lives, from the earliest daydreams to the process of choosing college majors and first jobs to the reality of navigating a real-life career. Changes in direction might involve compromise or settling in to economic reality, but at the same time, changes involve a more mature recognition of how our original values can be expressed through contemporary jobs. A friend tells about reading about the lives of missionaries as she was growing up and admiring their work. In the stories, she says, missionaries lived in huts in faraway lands, and so her early vision was that, “when I grow up I’ll be a missionary and, well, I guess I’ll live in a hut.” Today she is living in a shared apartment in the city, active in an urban church and in the anti-human-trafficking movement, more than realizing her early values but not living anywhere near the hut she envisioned.

Growing up in a family of teachers, I knew that I wanted to do something related to helping children and teens, but it took time to figure out how I could do something that was like what my parents did but sufficiently “different” and special.

My mother taught kindergarten in the small rural town just north of the town we lived in. Students in her kindergarten classes enjoyed a wonderful range of activities: building, painting, dramatic play, singing, apple picking, cider making, learning letters and numbers, and lots and lots of books. The simpler the idea the better. Activities often conveyed the value of things that are free, simple, connected with nature. On a sunny winter day, my mother would take the students out for a winter picnic, bringing a snack of lemonade and crackers, which they would eat while sitting on logs, stones and tree stumps in the nearby woods. For Christmas they made “mouse” ornaments from milkweed pods, which were picked and dried months earlier. At home we were always saving egg cartons or bottle caps or paper towel tubes for a kindergarten project. One year, my mother and father obtained an

old boat that was no longer sea-worthy. They scraped it and painted it with child-safe paint and installed it on the playground. It became a focal point for creative play, for class skits, and even a stage for kindergarten graduations.

Whenever my school had a day off and my mother's school was open, I used to go with my mother for the day and help. I loved helping out in her kindergarten classes, but, as a typical idealistic teen, I also dreamed that in the future I would do something more pioneering and radical. I was always reading books about a maverick teacher in a failing school system. In each of these books, he alone cared about the students (it was almost always a he, usually handsome, young, with no background in teaching) and would throw away the books and teach an improvised, radically different curriculum. And not just in education, but also in environment, organic farming, hunger, poverty, and many other fields that interested me, there were always books and movies about people who did pioneering work that no one else had done.

“What about being a good teacher in a good school?” my father would ask me. My father, also a talented and popular teacher, was the science department chair in my high school, and had a knack for supporting and mentoring the other science teachers. Therefore every science teacher that I had and enjoyed in high school had been influenced by the direction he set for the science department.

“It's not the same,” I would answer.

Not surprisingly, in a realization of “oh, my parents were sort of right” I eventually came to value working with other people who are effective, now enjoying being part of various networks of schools and nonprofit organizations who are doing good work.

I think I first really articulated this idea after a much-admired person in my neighborhood died, a man who had been an amazing pioneer in work related to homelessness, poverty and civil rights. After he died, as I read and listened to stories about his life, I was filled with admiration, but also with the realization that, being of

a different generation and maybe a different personal temperament, I have not done any work that is so pioneering.

But then I remembered a series of conversations I had with this neighbor and with other neighbors. Our neighborhood is one where many people volunteer to take care of gardens and landscaping in the local parks. In every season, the parks in the neighborhood are rich with flowers, herbs, shrubs and trees, with a landscape of neighbors with rakes, shovels and hoses hauling transplants around and chatting about work, life and their latest gardening project. In community gardens, people grow vegetables, giving each other surpluses of tomatoes and zucchinis. In the parks, people walking their dogs or coming home from the grocery store may stop to pull some weeds or check in with a neighbor about a volunteer day coming up.

Occasionally, someone not familiar with the neighborhood or with this work will walk by and say something to imply that the gardener is a hero, taking care of what would otherwise be a neglected spot. But we are proud that this is not at all true. A generation ago, the work was pioneering, when people started to grow vegetables in neglected vacant lots and started to commit to taking responsibility for local parks and playgrounds. But now it is just part of the fabric of the neighborhood.

So now, rather than being different and radical, I'd rather be part of networks of people who do good things. Children are served better by good teachers in good schools than by a few maverick teachers in failing schools. Children live better lives in communities where gardening and volunteering are an easy, natural part of the fabric of the community rather than where these are rare acts of heroism. The same principles are true across many other areas of social concern – from homelessness to healthcare systems to urban design; it is better to be part of a healthy, functioning system.

Some of the emerging themes in the mosaic economy are a reflection of contemporary values: the value of working with organizations that build community, of artisanal production and craft techniques, of environmentally-friendly technology,

of developing personal environments that are healthy and creative. Many of the expressions of these values are not out-of-the-ordinary, but just creative application of values to ordinary work. What are the things that people often value in their careers? Different people value different things, and so one of the most valuable exercises in career exploration is a checklist of career values, such as the following checklist.

## Career Values Checklist

What are the values that you want to explore and express through your career?  
Rate the following on a scale of 1 to 5.

	5 = Very Important	4	3	2	1 = Not Important
<b>Core Values</b>					
Creativity	[ ]	[ ]	[ ]	[ ]	[ ]
Innovation	[ ]	[ ]	[ ]	[ ]	[ ]
Entrepreneurship	[ ]	[ ]	[ ]	[ ]	[ ]
Leadership	[ ]	[ ]	[ ]	[ ]	[ ]
Social impact	[ ]	[ ]	[ ]	[ ]	[ ]
Craftsmanship	[ ]	[ ]	[ ]	[ ]	[ ]
Visible products or results	[ ]	[ ]	[ ]	[ ]	[ ]
Artistic values	[ ]	[ ]	[ ]	[ ]	[ ]
Connections with people	[ ]	[ ]	[ ]	[ ]	[ ]
<b>Areas of Impact</b>					
Work that involves new technology	[ ]	[ ]	[ ]	[ ]	[ ]
Work that has an environmental impact	[ ]	[ ]	[ ]	[ ]	[ ]
Work that provides high-quality education	[ ]	[ ]	[ ]	[ ]	[ ]
Work that affects public opinion	[ ]	[ ]	[ ]	[ ]	[ ]
Work that improves people's health	[ ]	[ ]	[ ]	[ ]	[ ]
Work that affects people's physical environment	[ ]	[ ]	[ ]	[ ]	[ ]
Work that affects what people eat or drink	[ ]	[ ]	[ ]	[ ]	[ ]
Work that affects fashion or design	[ ]	[ ]	[ ]	[ ]	[ ]
Work that affects how people spend their free time	[ ]	[ ]	[ ]	[ ]	[ ]
Work that strengthens family relationships	[ ]	[ ]	[ ]	[ ]	[ ]
Work that strengthens spiritual well-being	[ ]	[ ]	[ ]	[ ]	[ ]

## The Mosaic Economy - 24

	5 = Very Important	4	3	2	1 = Not Important
<b>Work Styles</b>					
Independence	<input type="checkbox"/>				
Teamwork	<input type="checkbox"/>				
Variety	<input type="checkbox"/>				
Fast-paced environment	<input type="checkbox"/>				
Comfortably-paced environment	<input type="checkbox"/>				
Work that provides a sense of belonging	<input type="checkbox"/>				
Work that provides a challenge	<input type="checkbox"/>				
Work that follows comfortable routines	<input type="checkbox"/>				
Work that provides a flexible schedule	<input type="checkbox"/>				
Work that is physically active	<input type="checkbox"/>				
Work that is outdoors	<input type="checkbox"/>				
<b>Connections</b>					
A career that provides travel opportunities	<input type="checkbox"/>				
Connections with global businesses or organizations	<input type="checkbox"/>				
Connections with local community	<input type="checkbox"/>				
Connections with religious faith and beliefs	<input type="checkbox"/>				
Connections with nature, animals, plants	<input type="checkbox"/>				
Work that draws on one's knowledge of a subject/topic	<input type="checkbox"/>				
Work that expands knowledge in a subject/topic	<input type="checkbox"/>				

Often there is a tension between the type of work that people want and the jobs that are available. But in a healthy market economy, as the values of a society are reflected in the goods and services demanded, the nature of the jobs available shifts to reflect those same values, creating jobs that allow workers to explore their artistic, humanitarian, intellectual or entrepreneurial potential.

As people work to start and build their careers, they know that they may arrive at different tiers of career accomplishment; that they may or may not find the perfect job that exactly matches their vision. They may find a job that wasn't what they expected but that fits surprisingly well. Or they may land in a job that is a fall-back for what they originally wanted but that fulfills the same values; perhaps in a less visible or glamorous way. They may decide that they want to pursue their values outside of the workplace – as part-time musicians, writers, actors, artists, volunteers, activists – and that they will pursue other values through their work. I recently conducted a survey of high school students about career development. Through survey responses, many students expressed interest in the arts, music, acting, professional sports or other hard-to-enter fields. Most of these students listed different tiers of options, including goals of being a professional musician, actor, artist, or athlete, along with a variety of alternative or fall-back options.

A harder problem occurs when a seemingly-desirable job provides a disillusioning experience. An organization that ought to be wonderful turns out to be less nurturing, more competitive, less true-to-values than it should be. It may be that an enthusiastic new employee is hired at a low salary and is treated as less than a full member of the organization. Or that leaders of an organization focus more on ego or prestige or fundraising than on the mission of the organization. Or an organization eliminates jobs and implements layoffs in a way that seems callous, not mindful the dedication of the employees affected.

As we navigate real-life careers, we compromise and adjust. But we can also re-frame our values in a way that is exciting and positive.

Re-framing our values involves letting go of ideas that might serve as barriers to expressing these values in different ways. This might include letting go of the idea that you have to be a maverick hero or live in a hut far away to make a difference. It might include letting go of the idea that creativity resides only in the arts or that humanitarian work resides only in the public and nonprofit sectors. It might include letting go of the idea that the mainstream economy does not or cannot care about environmental or humanitarian causes. After letting go, it is possible to explore job options that embrace the values you care about outside the types of organizations where you might first have expected to work.

The concept of a mosaic economy provides a way of re-framing our values. The economy and job market are not just made up of a few “big” opportunities, but a mosaic of many different opportunities. Through the mechanism of an active and creative market, people with vision can transform seemingly ordinary opportunities into products, services and environments that enhance the well-being of customers, workers and the community.

## 2 | Foundations of a Healthy Market Economy

**H**ow does a healthy society pay attention to the wants, needs and values of workers, consumers and citizens? How does a healthy economy respond to what people want? A healthy market economy is one in which the interplay of producers and consumers, entrepreneurs, individuals and organizations come together in ways that are responsive to the wants and needs of people in the society.

A healthy market economy produces five key outcomes:

*Outcome #1: Flexibility.*

In a healthy market economy, there is flexibility for producers and consumers to respond to current needs, issues and trends, from simple personal lifestyle trends to major global issues of energy, environment and trade. This may be as simple as seeing more fitness clubs or more yoga studios in response to consumer demand or as complex as seeing alternative energy sources emerge in response to environmental concerns.

*Outcome #2: A visible flow of money, goods and services.*

In a healthy market economy, there is a visible flow of money, goods and services among consumers and producers, employers and workers, savers

and investors, taxpayers and citizens within the local economy, the regional economy, the national economy and the international economy. The success of local businesses ripples throughout the community, visible through wages for local workers, consumer spending and re-investment in homes, small businesses and public places.

*Outcome #3: Production of the goods and services that people want and need.*

In a healthy market economy, the products and services that people want and need are made available by businesses and organizations, including the private, nonprofit or public sector.

*Outcome #4: Job and career opportunities that people value.*

A market economy is based on supply and demand for the products and services that people and organizations want and need. While we as workers are “suppliers” offering valuable skills, talents and time, we are also essentially “buyers” in search of the resources and investments that will provide a platform for our work. A healthy market economy will respond to the availability of skilled workers and create investments to make use of those skills and talents.

*Outcome #5: Social and economic mobility.*

A healthy market economy provides social and economic mobility, with no permanent socioeconomic gaps among groups and no unfair barriers to economic success.

Are these outcomes possible? What are the characteristics of an economy that can provide these outcomes? Introductory economics textbooks and courses outline some basic foundations for a healthy market economy. These include a basic infrastructure for economic activity, transparency and a free flow of information, a balance in exchange among local, regional, national and international markets,

attention to monopoly power and concentration of power, and attention to building strongly democratic participation in public decision-making.

*Foundation #1: Basic infrastructure for economic activity.*

Picture a rural farming and fishing community, where fishermen fish daily from small boats and farmers farm on small farms. The work of the community is probably supported by basic infrastructure. For example, there will be a fishing wharf where fishermen can dock their boats and sell their catch. The fishing wharf will provide access to fuel for the fishermen, refrigeration and packaging for the catch, transportation via truck, train or ship to market destinations, and a small local market for local people and visitors to buy fresh fish. Similarly, farmers may be supported by market services as well: a local market where they can sell crops for shipping to other markets, a local farmers' market, and common resources such as storage silos, mills or other infrastructure. A local vocational-technical school or nearby college or university may offer courses in agriculture and fishery, and the college-based agricultural extension service offers professional support.

Basic infrastructure for economic activity includes access to financial and physical markets, roads and transportation networks, access to utilities like water, electric and gas service and access to support services specific to each sector of the economy, from farmers markets and fish wharves to technical infrastructure such as telephone service and high speed internet access. Education and information are part of infrastructure, including research in science, agriculture, health, engineering and technology; support for education and workforce development; and wide access to freely-available knowledge and information.

Basic economic safety net programs can also be viewed as part of the infrastructure of a modern economy, with programs like unemployment

insurance making labor markets more efficient by supporting workers while they seek appropriate new jobs. Other safety net programs provide necessary support to individuals who are temporarily unable to work or who have long-term disabilities that prevent them from being self-sufficient. Safety net programs are both part of the basic infrastructure of a healthy market and serve as the fulfillment of a “social contract” to provide a basic safety net to individuals and families when they need it.

The basic infrastructure for the economy is not necessarily provided by the public sector. A very visible example is the internet, a central component for economic activity, created and supported by a network of public, private and nonprofit activity. Additional examples include the mixture of private, nonprofit and public investment in new energy sources; technology and science research; education and workforce development; and other infrastructure.

*Foundation #2: Transparency and free flow of information.*

One of the basic “textbook” requirements for a healthy market system is surprisingly simple yet hard to guarantee – the assumption that buyers, sellers and investors in a market have information about the product, service, labor or investment being offered. One long-time role of government is the role of addressing the problem of imperfect information, from the role of health and safety inspections of restaurants at the local level to the role of oversight of stock market transactions at the federal level. Many consumer protection and workplace safety laws and regulations focus on safeguarding access to information in product markets, financial markets and labor markets.

Recent economic stresses and crises flow partly from lack of transparency and lack of free flow of information. Examples include the major recession caused by the failure of the subprime mortgage market, the recent

explosion in student loan debt, and recent shortages of skilled workers for many manufacturing trades. From financial markets to labor markets, wherever investment decisions need to be based on good quality information, it is vital to establish a free, unbiased flow of information. Not only investors, but also consumers and workers and students depend on a free flow of unbiased information in order to assess the quality, safety and desirability of products, services, workplaces, schools, loans, career decisions and other economic choices.

*Foundation #3: A balance in local, regional, national and international flows of goods, services, investments and money.*

Most economists, going back to Adam Smith in *The Wealth of Nations*, suggest that wider markets for trade and investment lead to higher productivity and higher standards of living. But instinctively (and wisely) many businesses and consumers respond to periods of economic stress by focusing on the benefits of buying, selling and investing within a smaller, more local market, whether locally, regionally, or domestically. This is a natural and actually very helpful response to economic stress. In times when buyers and sellers may have little control over larger economic patterns, it can still be possible to create a healthy flow of trade within a smaller market. Many of the stories about the health of the mosaic economy focus on the success of local markets or of revival of U.S.-based production. Much of the major economic recovery work that needs to be done in the future to strengthen the economy involves re-investing in cities and regions that have seen disinvestment over recent years.

Yet in the long run, a focus on wider, global trading can potentially be healthy and can provide wider potential markets and greater potential for higher global standards of living. But this is only true if there is fairness, honesty and transparency in trade policies and if there is equity among

trading partners in worker protections, environmental protections, product safety and product quality. This is a complex area involving international trade agreements, diplomacy, tax policy toward international and domestic investment, exchange rates and other areas of policy.

*Foundation #4: Policies that address monopoly power and other highly-concentrated market structures.*

During the robber baron era of the late 1800s and early 1900s, the game of Monopoly(TM) was developed to communicate the economic concept of monopoly power. In the game, as in real life, if you acquire all the railroads, or all the utilities, or all of the properties in a particular market, you can charge higher rents and prices and amass more money. The game is an effective illustration: whenever I've taught the concept of market structures to college students, a mention of the game of Monopoly(TM) brings a nod of understanding.

Introductory economics textbooks present the theory behind the concept. In a normal market, the interplay of competing suppliers and buyers brings prices, wages and rents to a level that reflects costs plus a reasonable profit for the provider. But in a monopolistic market, the lack of competition allows prices, rents or wages to be set at a point much higher than would occur in a normal, competitive market, with much higher "monopoly profits" for the provider.

Toward the end of the "robber baron" era, anti-trust laws were enacted to address the power amassed by the "trusts" – the monopoly ownership of railroads, banks and other markets. These laws addressed many of the abuses of that era, though remain imperfect. Enforcement of anti-trust laws depends on the government or competitors bringing anti-trust cases against corporations that acquire a near-monopoly share of a market, and

enforcement is subject to interpretation and limited to particular definitions of monopoly power.

The recent trend toward extremely high corporate executive salaries provides an example of monopoly power. With power and money concentrated in corporate offices, corporate decisions may tend to focus more on returns to executives and less on well-being of workers or consumers or returns to shareholders. Political and economic analysts suggest that there may be a strong correlation between concentration of income and concentration of political power, with years of highly concentrated income correlating with years of strong influence by the wealthy on the political process.<sup>6</sup>

*Foundation #5: Strong participation by all citizens in public decision-making, public opinion, political process, and local action.*

The idea of “strong democracy”<sup>7</sup> portrays a society in which citizens strongly embrace a role as active participants in public and political decision making. In this vision, people take interest in and make their voices heard about local, regional, national and international issues. Citizen voices are heard through the political process, citizen advisory groups, polls, online and print media and a variety of personal, social and small business initiatives.

The benefits of strong citizen participation are clear in a mosaic economy.

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<sup>6</sup> Wealth, Income, and Power, by G. William Domhoff, University of Southern California Sociology Department. In Who Rules America, <http://whorulesamerica.net/power/wealth.html>

<sup>7</sup> Frances Moore Lappe, co-founder with Anna Lappe of the Small Planet Institute coined the term “living democracy” and uses it throughout her recent writings.

When citizens participate in studying, thinking about and speaking up about what type of retail districts they want in their communities, what type of housing options, commercial districts, and parks and open space they want built in their communities, then these thoughtful voices can help shape next steps for local economic development.

When individuals, community groups, churches, small businesses, local schools and colleges and other organizations buy products that reflect their values – such as locally supplied, fairly-traded, or environmentally-friendly products – then these voices make a difference in creating a market for these products.

The eyes and ears of citizens are essential in maintaining transparency and free flow of information across all types of markets: food security and food safety, product safety, worker safety and other essential protections depend on active citizens who pay attention.

When children and teens grow up in a community in which adults are investing time and energy and sharing information, they have a stronger sense of community, are more knowledgeable about economic opportunities, and become more confident as they invest in education and first steps toward careers.

These five outcomes and five foundations may include some hard-to-achieve or idealistic concepts, but are primarily based on very standard, traditional economics textbook concepts. Most introductory economics textbooks include a description of the role of government in the economy that parallels the “five foundations” described here. The economic history of the United States tells the story of how a combination of protest, political process and gradual recognition of the needs of a more urban, complex economy have led to an expanded role of the government and other sectors of the economy in providing consumer and worker protections,

addressing monopoly power, providing an economic safety net for those in need and providing an expanded infrastructure to support economic activity.

Today, there are many voices calling for a reduction in the size and role of government. Historically, Americans tend to favor a smaller government and tend to prefer a stronger private sector, supplemented by social and community functions of a strong nonprofit sector. But whatever the relative size and scope of the public vs. private vs. nonprofit sectors may be, in a healthy market economy, the public, private and nonprofit sectors must interact to produce visible positive outcomes: production of the goods and services that people want and need; job and career opportunities that people value; social and economic mobility; flexibility to respond to changing needs; and a visible flow of money, goods and services through the economy.

## **What is the Role of the Government?**

The United States has a longstanding cultural preference for independence, for smaller government and for setting direction through state and local government rather than federal government. The United States was created in a protest against the control of far-away rule by a monarchy, emerging as an independent nation as a loose federation of thirteen colonies. The U.S. Constitution provides a minimal role for the federal government in the economy. Economic functions of government mentioned in the Constitution are minimal, including enforcing contracts and providing a legal system; providing currency; establishing weights and measures; negotiating trade agreements with other countries; and providing post roads and postal services.

During the early days of the country's history, many other social and economic functions such as education, assistance to poor families, public safety and public health were managed privately or by cities and towns or by the governments of the thirteen colonies, which would become the first thirteen states.

Over time, the role of government in the economy has expanded to address issues that arise in a more complex modern society, and many roles have shifted from local to state government and from state government to federal government. Table 2-1 lists the typical roles of government in the modern economy. Most introductory economics textbooks include some variation on this basic list, and education standards published by the Council for Economics Education<sup>8</sup> presents a similar set of standards, representing consensus among economists about the general scope of the role of government. While there is lots of debate exactly where to draw the line between the public sector and private sector, and about how to divide the roles of local vs. state vs. federal government, there has been broad agreement around most of these general principles.

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<sup>8</sup> Council for Economics Education, K-12 Standards.  
<http://www.councilforeconed.org/resources/type/standards/?sid=16>

**Table 2-1: Eight Key Roles of Government in the Economy**

<i>Role</i>	<i>Description</i>	<i>Comments and Examples</i>
[1.] Basic framework	Providing the basic framework for the economy, including providing currency, providing enforcement of contracts, establishing weights and measures and other aspects of a legal system.	This is one of the roles of federal government listed in the Constitution.
[2.] Regulating international trade	Regulating international trade through trade agreements, tariffs, quotas and other strategies.	This is also one of the roles of federal government listed in the Constitution.
[3.] Providing public goods	Providing public goods, which are defined as goods and services that benefit all members of society, whether or not each member of society contributes toward the cost. Public goods are also defined simply as goods and services that benefit society and that are most logically paid for and held in common.	<p>The Constitution lists post roads and postal service, two examples of public goods to be provided by the federal government.</p> <p>Current examples of goods and services provided by local, state and federal government include roads, sewers, police and fire departments, education, parks, public health services, research programs, job search and re-training assistance and many other services.</p>

<i>Role</i>	<i>Description</i>	<i>Comments and Examples</i>
[4.] Addressing positive and negative externalities	Providing or regulating goods and services that have positive or negative “externalities,” meaning goods and services that have external costs or benefits to the public that are not reflected in the private market price.	<p>There is some overlap between the concept of “public goods” and the concept of “positive externalities.” For example, education is often listed in textbooks as a “public good,” but could also be classified as a private good that has such strong “positive external benefits” that, although it could be supplied privately, is provided publicly.</p> <p>Public health services and many other community services are other examples of markets with strong “positive external benefits.”</p> <p>Examples of regulation by the government because of negative external costs include laws regulating air and water pollution, waste management, and local zoning and land use rules.</p>
[5.] Addressing issues of monopoly power.	When ownership and power in an industry becomes concentrated into one company or a few inter-related companies, the natural mechanism of a market economy no longer works to the benefit of buyers, workers, suppliers or other participants in the market.	During the late 1800s and early 1900s when the railroads, banking and other industries became concentrated in the hands of a few powerful corporations (called “trusts”) the government first introduced anti-trust laws to address these imbalances of power.

<i>Role</i>	<i>Description</i>	<i>Comments and Examples</i>
[6.] Addressing issues of imperfect information.	The success of the mechanism of a market economy depends on buyers being able to obtain information about the goods, services, labor, or other item being offered for sale. In cases of “imperfect information,” local, state or federal government will often intervene to address these issues.	Examples include the local inspections of restaurants for food safety through the local health department or oversight of new stock market offerings through the federal Securities and Exchange Commission. Additional recent examples include new laws requiring that lenders give more-thorough information to consumers about payments and terms on mortgages, student loans and other consumer debt.
[7.] Providing a safety net	Providing a safety net for people who need economic assistance. This can include unemployment insurance benefits for workers who are laid off and looking for new jobs, temporary assistance to individuals or families whose incomes fall below the level needed for basic well-being; assistance to people who are temporarily or permanently disabled, and specific programs to assist with housing, food or medical care.	While the federal government role in providing safety net programs began during the Depression of the 1930s, there were state and local welfare programs long before there were federal programs.
[8.] Addressing macroeconomic issues	Addressing macroeconomic, economy-wide issues of recession, unemployment and inflation. These issues may be addressed through changes in taxes, government spending or interest rates designed to stimulate or slow down the economy.	The federal role in addressing macroeconomic issues expanded during the Depression of the 1930s, through the policies of President Franklin D. Roosevelt and inspired in part by the theories of economist John Maynard Keynes.



### **3 | Income Inequality**

**I**magine a Monopoly-like board game in which players are given different amounts of money and resources to start the game. Through the rules of play, players are supposed to acquire education, jobs and economic assets, but those who started with fewer resources are hampered in their efforts. What rules of play would make a fair game, in which the less-favored players have a chance of winning? What rules of play would make an impossible game, in which the more-favored players always win?

When the Occupy Wall Street movement emerged in 2012, and as the Occupy movement spread from city to city, facts about the distribution of wealth and income in the United States became headline news. We read that the richest 1% of Americans currently hold more wealth than 90% of the rest of Americans. We read about the dramatic increase in corporate executive salaries, learning that the ratio of CEO salaries to worker salaries is dramatically more unequal than in the past. We read about the network of salary consultants and board members who set executive salaries, allowing top executive salaries and bonuses to grow faster than sales revenues or profits or shareholder earnings or worker earnings.

Themes of economic inequality, corporate influence, environmental and economic decline and lack of social mobility blended together in the Occupy protests, with the slogan “we are the 99%” expressing disappointment and frustration both about personal economic struggles and about national economic, environmental and social issues.

There is a strong popular tradition in the United States that we are, or should be, an open, democratic, egalitarian society.

This tradition has valued wealth as a reward for personal success: for inventing a product or nurturing a successful business or succeeding in a valuable profession. But in this tradition, success and wealth are valued as something fluid, something that can be achieved by anyone, and not something that leads to a permanently wealthy class or a permanent underclass.

American culture celebrates the ideal of business leaders, entrepreneurs, politicians and others who live simply, living in the same communities as “ordinary” people and, while perhaps enjoying some “extras” that others don’t have, still doing most of the same things that ordinary people do.

However, despite the ideal of equality, eras of extreme wealth and poverty have alternated with periods of relative egalitarianism in American history.

The current rise in economic inequality began in the 1980s and 1990s, after more than 50 years of declining inequality. Statistical records of income distribution reach back to 1913. In the 1910s and 1920s, the income of the highest-earning 1% of the nation was 18% of total household income. The 1920s marked the end of a period in American history often called the “robber baron” era, when a relatively small group of owners controlled railroads, banking and manufacturing and dominated politics and government. In the years leading up to the 1920s, populist movements and political action had started to give a voice to unions and to begin to rein in the power of the wealthy industrialists through anti-trust laws, consumer protection laws and other reforms. Also in the years leading to the 1920s, companies

like Ford Motor Company had started to pay workers higher wages, motivated by the desire to encourage mass consumption of their products.

The 1920s were also known as the “Roaring 20s” with a sense of great energy permeating the national culture. While America was still a socio-economically and racially segregated nation, the experience of World War I had a democratizing effect on society. Returning soldiers brought home a more sophisticated and more international view of the world. This was the period of the birth of the NAACP, of the black nationalist and Pan-African movements, of the Harlem Renaissance, of women’s suffrage, and of modernism in art and culture. It was a period that celebrated popular culture over “high culture” and society of the 1920s celebrated embraced jazz music and folk culture, with musicians, writers and artists exploring and gathering folk stories, folk songs and folk traditions. This era also marked the beginning of a much-needed turnaround in the degree of economic inequality in the United States.

During the decades from the 1920s through the 1970s, the rise of labor union membership, rising industrial productivity, rising wages, and the growing role of the United States as a world economic leader led to a more equal income distribution. The economic safety net built during the 1930s New Deal contributed to relief from extreme poverty. Meanwhile, in a very mobile nation, both black and white families moved from Southern states and rural communities to Northern states and urban communities, finding higher-paying jobs and expanded opportunities. Along with this migration, poverty rates fell, educational attainment rose, home ownership rose, and both black and white communities saw a growing middle class. By the 1970s, the gap between the rich and the rest of the country had narrowed, and the income of the highest-earning 1% of the nation was by then 9% of total household income, a less extreme difference.

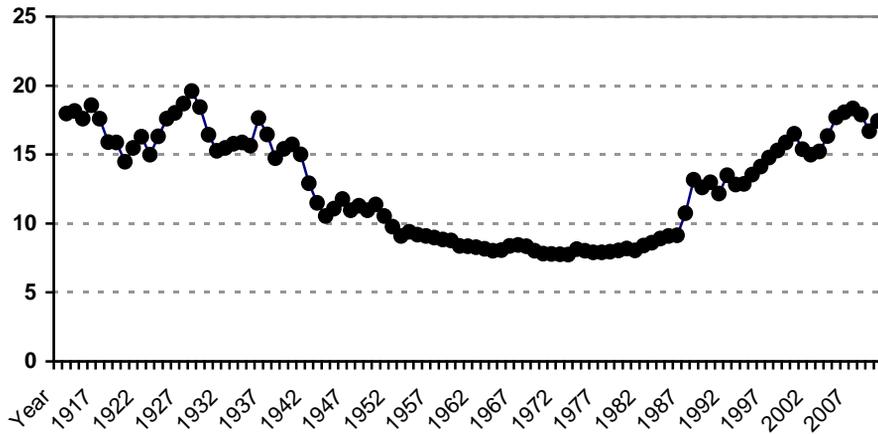
During the 1980s and 1990s, these patterns reversed. Several trends in trade, technology and business organization interacted to create the reversal. Increased

globalization of markets weakened American manufacturing. In a more globalized business environment, the power of unions to negotiate wages declined. Businesses began to organize differently, often outsourcing functions that were once performed within the company. Financial deregulation, probably also a by-product of a more globalized business environment, led to gains in wealth among a relatively small group of people. Meanwhile, the boom and bust cycle in new technology companies led to considerable wealth for many shareholders, but vulnerability to layoffs and unemployment for managers, engineers and programmers in those same companies. Changes in technology created new jobs but resulted in elimination of other jobs, resulting in painful transitions for many individuals and communities.

By the mid 2000s, the richest 1% again earned 18% of total household income, a return to the levels of the 1920s. By 2012, when income and wealth inequality made headlines during the Occupy protests, Americans had long been aware that wages for working people had barely kept up with inflation in recent decades. Along with flat earnings, most workers had less job security, less retirement security, and, after several years of recession, much less confidence in the career opportunities for young adults entering the job market. Figure 3-1 presents this historical data.

### Figure 3-1: Share of Income of the Highest-Earning 1%

Share of income received by the highest-earning 1% of households as a % of total household income (excluding capital gains). 1913-2010



Source: World Top Income Database

Website: <http://g-mond.parisschoolofeconomics.eu/topincomes/>

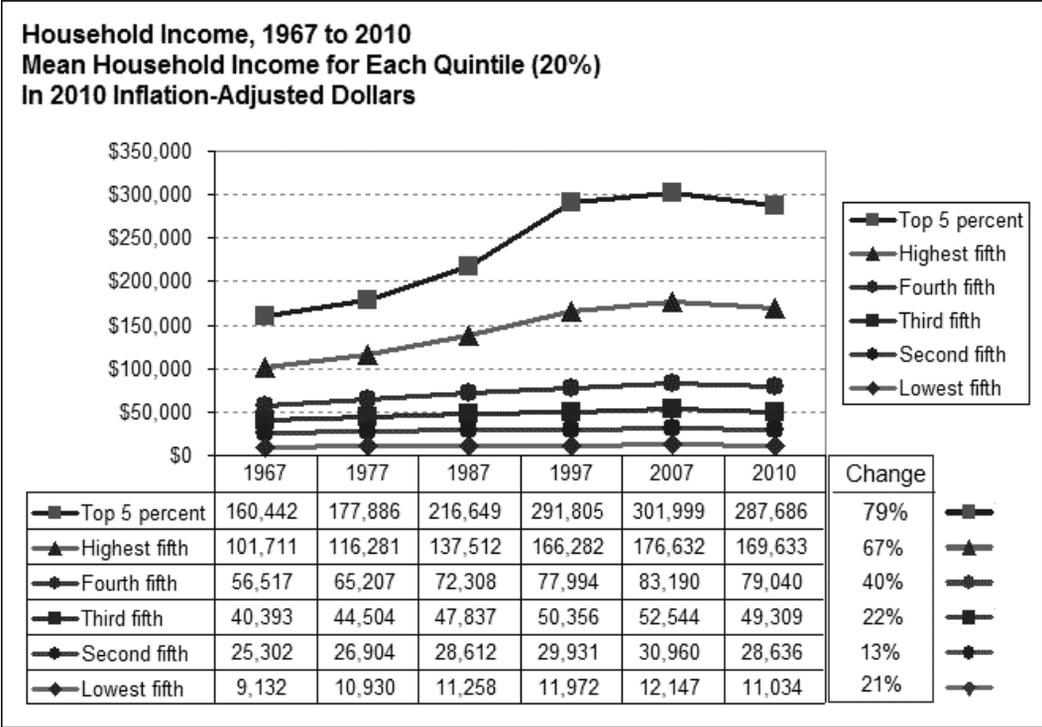
During and after the recession, there was an emerging sense that if others are doing well, it is “not us,” not the 99%, not the many Americans who are struggling with rent or mortgages, student loans, health care worries and job security worries. This has been a more worry-filled era; in great contrast to the hopefulness of the 1920s when a similar level of economic inequality was present.

Figure 3-2 presents similar data, using another technique for looking at income inequality. Figure 3-2 shows the average (mean) income for incomes in the lowest-income 20% of households, and the mean income for each 20% segment up to the highest-income 20%. It also shows the mean income for the highest-income 5% of households. The data comes from the U.S. Census Bureau’s household surveys, from historical tables from 1967 to 2010.

In 1967, the highest-income 5% of households earned an average of \$160,442 (in 2010 inflation-adjusted dollars). In 2010, the highest-income 5% of households earned an average of \$287,686, a 79% increase adjusted for inflation.

In 1967, the lowest-income 20% of households earned an average of \$9,132 (in 2010 inflation-adjusted dollars). In 2010 the lowest-income 20% earned an average of \$11,034, an increase of approximately 21% increase adjusted for inflation, much less than the gains seen by the upper 5%. The gains seen by the middle groups were also very modest, with second-lowest-income group of households seeing a 13% gain in income and the middle group seeing a 22% gain in income.

**Figure 3-2: Household Income by Quintile, 1967-2010**



Source: U.S. Census Bureau

Like the “top 1%” statistics, these statistics support the concern that income inequality is increasing and that incomes in the middle and lower end of the economic spectrum have been relatively stagnant.

These statistics also raise many questions. It is clearly true that income inequality has increased in the past several decades. But it is not clear why, or what the long-term implications might be, or what the best responses might be.

To what extent are these shifts caused by shifts in the economy, with younger workers working in lower-paid sectors of the economy, earning less than their parents or grandparents did? Or how much is explained by shifts in earning structure within companies, with a widening gap between the salaries of management, professional and technical staff and the wages of front-line workers in those companies? How much is explained by shifts in the way work is organized, with fewer people working in the same job for an entire career and more people working in contract work, part-time work and self-employment?

Also, to what extent are these shifts caused by changes in household formation, such as growing numbers of two-income families earning higher household incomes and single adults with lower household incomes? To what extent are these shifts caused by differences among geographic regions, with increasingly large differences in earnings and cost of living in different cities and regions?

The most important question is whether it is possible for gaps between higher-earning and lower-earning households to be bridged. Even if many people feel “stuck” and worried in the current economy, is it possible to envision ways that individuals, families, households and communities can find and create opportunities for sufficient rewarding work and comfortable incomes?

An international and a long-term historic view is valuable. Throughout the world and throughout history, there have been shifting levels of economic equality and inequality. For example, historical data for many European countries, such as Sweden, the Netherlands and Finland, currently known for relatively strong income

equality, show much greater inequality in the past. Many developing countries are also now seeing relatively strong income equality after periods of higher inequality.

Is there a natural cycle of fluctuating equality and inequality in an economy? Could the turn-around in the U.S. of the 1920s through 1970s be repeated? Is the U.S. economy healthy enough and does it have the tools and the resilience needed to correct this current period of growing inequality? If yes, will current levels of inequality be addressed through populist protest, through political action, through entrepreneurial effort, through redistribution, through widely-shared economic growth, through austerity, or through some combination of these?

And most important for the discussion of the mosaic economy, what array of jobs and economic opportunities will be at the forefront of a healthy and more egalitarian economy?



## 4 | A Fresh Look at Labor Market Data

“There is no longer a lobstering industry in Massachusetts,” the professor said confidently to his students in his introductory economics class. My friend’s son’s eyes opened wide, his face still tanned from a summer spent with his father on their lobster boat in Quincy, Massachusetts. He tried to talk to the professor, but was never quite satisfied that the professor believed his description of the lobster fishing that took place off the shores of Boston, from boats that came out from Quincy, South Boston, Saugus and other urban ports.

We all have stories of hearing of the demise of something we know is alive and well. “No one lives next to farms anymore,” my friend heard a co-worker say with confidence. “No one actually *lives* in the city anymore,” my daughter once heard another child say.

Environmental activist Bill McKibben<sup>9</sup> writes about an official from the U.S. Department of Agriculture who spoke several years ago about the demise of farming,

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<sup>9</sup> From *Deep Economy: The Wealth of Communities and the Durable Future*, by Bill McKibben, St. Martin’s Griffin Press, 2008.

suggesting that in the near future, agriculture in the United States would largely be focused on supplying turf for lawns and golf courses and seedlings for backyard gardens; and that farming for food would continue to be a smaller and smaller sector of the economy. The official did not anticipate the expansion of organic farming, urban agriculture, and many other food and farming movements that are breathing new life into agriculture and drawing many people back into agriculture and related work.

It is easy to over-generalize trends and patterns to tell a story, and to publish media reports about a future where practically everyone is working in the newest, up-and-coming fields, and virtually no one is working in older, traditional fields. It is also easy to develop career advice based on whatever seems to be the safest bets. Teachers, career counselors, parents and others are often more comfortable guiding students toward well-known opportunities in fields like healthcare and engineering, and less comfortable encouraging students to follow an interest toward a less-defined or less-secure career path.

In this information-rich era, we are fortunate that we have access to an extensive set of data about occupations and industries. If viewed with an open mind and fresh eyes, this data is valuable for gaining insight into opportunities in the economy.

How can labor market data help individuals, counselors, educational leaders and others to make sound decisions? Although it is important not to over-generalize based on labor market data, it is useful to use the data to support planning and decision making.

Career decision making should focus on three dimensions: (1) personal interests and values; (2) opportunities in the job market, both current opportunities and projected future opportunities; and (3) personal preference about the timeline, educational investment, risk and rewards of preparing for and entering a particular field.

For individuals who are looking for immediate job opportunities or short-term career training options, labor market information can provide ideas about jobs and career paths that they may not have considered, about the typical range of earnings, from entry-level to most-experienced, and about the distribution of different occupations across different industries.

For individuals considering longer-term educational investments, including colleges, vocational programs and apprenticeship training, labor market information can provide insight into likely long-term strengths and weaknesses in the economy, providing one important factor for guiding long term investments in education and career training.

For educational leaders who are investing in new career-related vocational, college and job training programs, long-range labor market projections are important. Should a community college invest in creating a dental hygienist program, a respiratory therapist program, an electronics technician program? Should a vocational high school continue to offer a machine trades program, a cosmetology program, a cabinetmaking program? Should a high school guidance counselor or college advising program encourage students to apply to college programs in health care, engineering, social work, journalism?

For all of these decision-making scenarios, it is important to look at data with an open mind and fresh eyes; not to eliminate or neglect occupations that might be more promising than the current projections suggest; to use imagination about how various skills, training, credentials and first jobs may lead to future opportunities in an ever-shifting economy; to consider thoughtfully the economic risks and rewards of various educational and career paths.

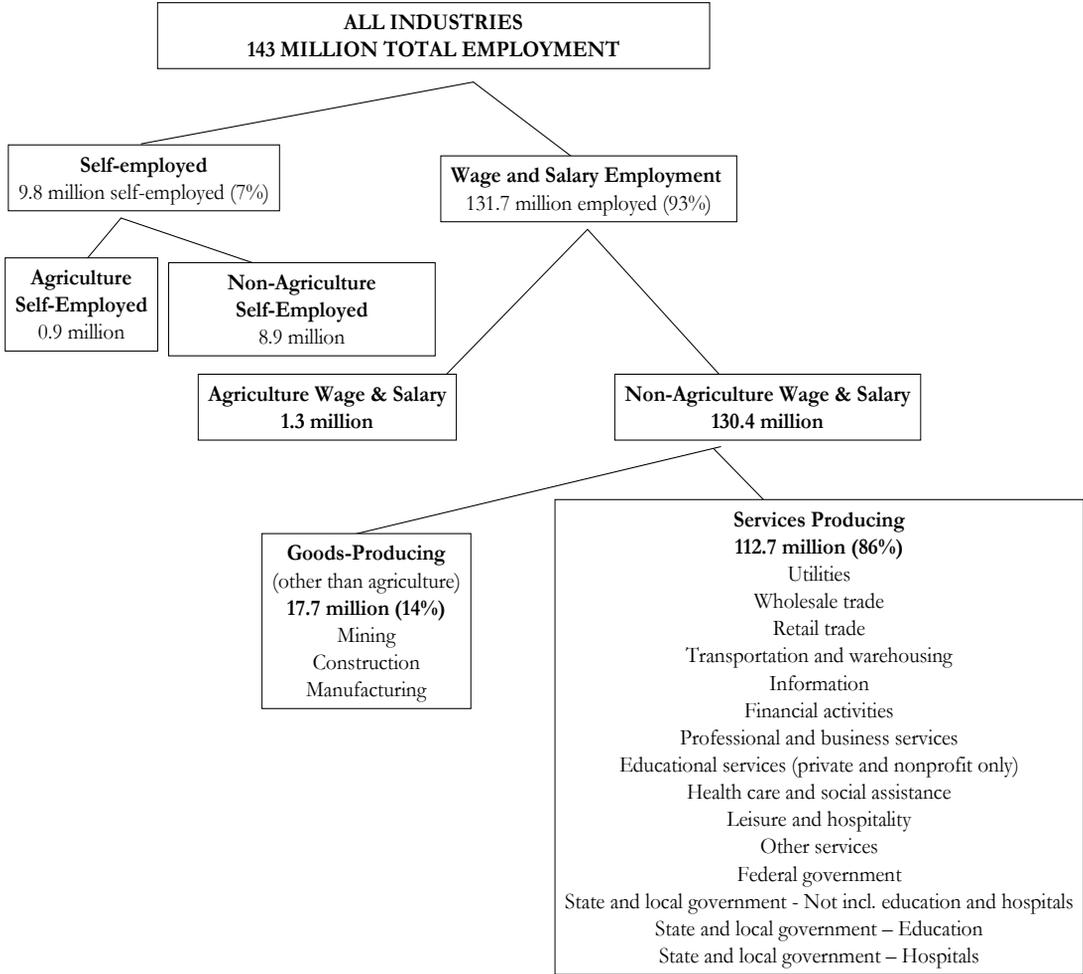
It is natural for advisors, teachers, parents and community youth program leaders to want to help youth find and follow a “safe” career path. But it is short-sighted to push large numbers of students toward just a few specific high-growth occupations. If “everyone” enters a popular “high growth” field, a glut can occur.

Risk is actually minimized when students and others are encouraged to pursue a diverse set of career paths.

Employment projections provide a useful reality check, but should not be the sole factor in making decisions. Additional sources of information about the outlook for a career area can include direct observation of economic activity in the local and regional area, surveys of educational and career outcomes of recent graduates, and the insights of professional associations and industry advisors. And of course, understanding one's own personal interests, values and approaches is essential for making career decisions that will work out well in the long run.

The U.S. Bureau of Labor Statistics (BLS), the research and statistical service within the U.S. Department of Labor, provides information about employment by "industry" and by "occupation." "Industry" refers to the type of business or organization where people work, such as the number of people working in health care in general, or, more specifically, in hospitals, nursing homes, doctor's offices, physical therapy clinics or other health settings. Information from payroll taxes and other types of business taxes is used for developing industry employment statistics. "Occupation" refers to the type of job that people have. For example, within a hospital, people may work in healthcare occupations such as physicians, nurses or in a variety of other fields, such as food service occupations, building maintenance occupations, financial management occupations or clerical occupations. BLS uses surveys and research studies to provide statistics about occupational employment.

**Figure 4-1:  
Employment in the U.S., by Industry, 2010**

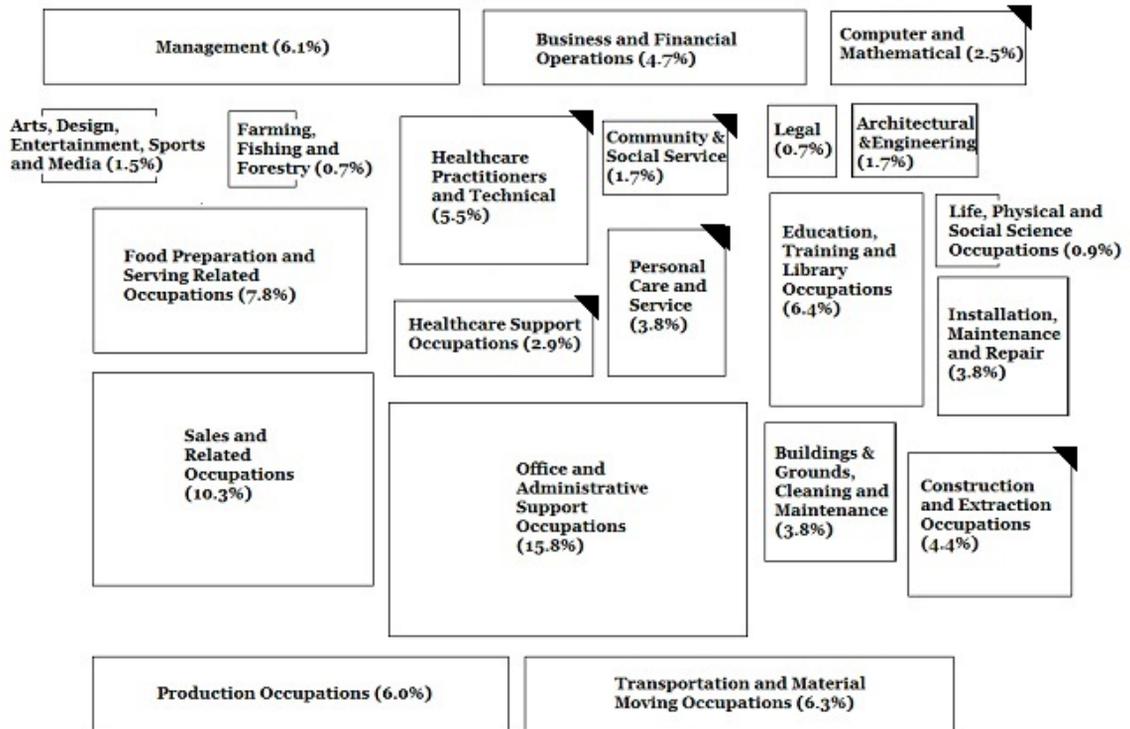


Source: Bureau of Labor Statistics, Industry Employment. Graphic by author

Figure 4-1 shows how industry employment data is organized and reported. This chart shows that total U.S. employment in 2010 was 143 million. Of this 143 million, 7% was self-employment (sole proprietors or partners in a business) and 93% was wage and salary employment. These groups are further classified into agricultural and non-agricultural. Non-agricultural wage and salary employment is classified into the broad categories of goods-producing industries and service-producing industries. Goods-producing industries, including manufacturing, construction and mining, made up just 14% of non-agricultural wage and salary employment. Service-producing industries, such as retail trade, business services, education and health care, made up 86% of non-agricultural wage and salary employment.

Figure 4-2 shows occupational employment data. The Bureau of Labor Statistics provides data for approximately one thousand different occupations, grouped into the broad categories shown in Figure 4-2. This chart is organized visually, with different sized blocks representing different occupational categories, reflecting the idea of a mosaic economy.

**Figure 4-2: Employment in the U.S., by Occupation, 2010**



▴ = High Growth Occupations

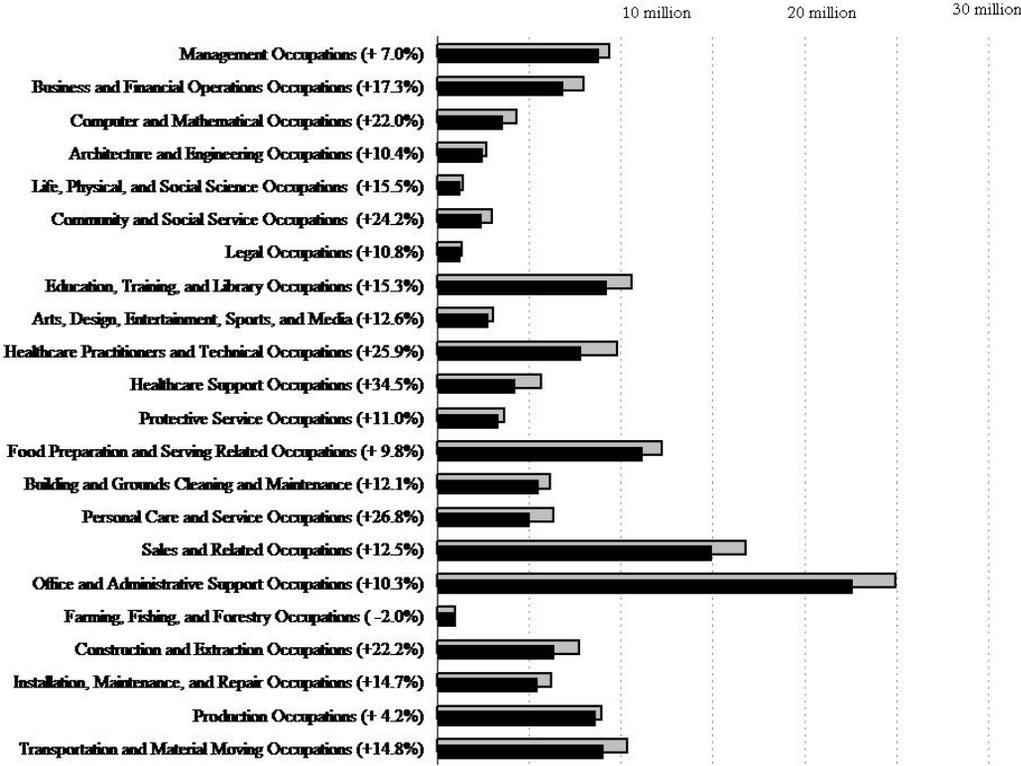
Note: Percentages and box sizes represent each occupational group's share of total labor force. Arrowheads on the right corner designate high-growth occupational groups, marking occupational groups that are projected to grow 20% or more from 2010-2020.

Source: U.S. Bureau of Labor Statistics, Employment Projections. Website: <http://www.bls.gov/emp/#tables>. Graphic by author.

As shown in Figure 4-2, six of the occupational groups are projected to have growth of 20% or more over the period 2010-2020. These include jobs in computer/mathematical occupations, healthcare practitioners and healthcare technicians, healthcare support occupations, community service occupations, personal and service occupations and construction and extraction occupations. Specific jobs in these groups include jobs such as personal care assistants, dental hygienists, physical therapists, marriage and family therapists, market research analysts, stonemasons, glaziers and various construction helper occupations.

The BLS projections are based on recent trend data for each occupation, projections of the overall employment growth, plus the best possible estimate of how each occupation will shift in the next few years. Figure 4-3 shows the projections for major occupational groups, showing actual employment in 2010, projected employment in 2020, and the projected percent change. The overall projected employment growth rate, for all occupations, is 14.3%, reflecting a population growth rate of about 1% per year plus an increase in employment as the economy recovers from the economic recession that was still affecting employment levels in 2010.

**Figure 4-3:  
Employment Projections by Occupational Group:  
2010 employment and 2020 projected employment**



Source: U.S. Bureau of Labor Statistics, Employment Projections. Website: <http://www.bls.gov/emp/#tables>. Graphic by author

Figure 4-4 below shows more detail from four of the occupational groups, showing one moderate growth occupational group (Installation, Maintenance and Repair occupations), one low growth group (Production Occupations) and two high growth groups (Healthcare Practitioners and Technical Occupations; and Computer and Mathematical Occupations).

The category of “Installation, Maintenance and Repair Occupations,” as a whole, is expected to grow at 14.7%, about the same as the rate of overall employment growth. The detailed projections show that some occupations in this group, such as bicycle repairers, cellphone tower installers and medical equipment repairers, are expected to show strong growth while others, such as watch repairers and home appliance repairers, are expected to show flatter growth.

The category of “Production Occupations”, as a whole, is projected to grow only 4% between 2010 and 2020. However, within this category, some occupations are expected to show declining or flat employment levels, while others are expected to show moderate or high growth rates.

There is interesting connection among these categories, for example, with some of the maintenance and repair occupations being complementary to jobs in production occupations and healthcare (such as industrial machinery maintenance and medical equipment maintenance). These overlaps point to one of the strengths of the mosaic economy: that growth in each industry area (healthcare, manufacturing, etc.) stimulates growth in a wide variety of occupations.

## Figure 4-4: Detailed Occupational Data and Projections

Examples drawn from four selected occupational categories

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Occupational Group: Installation, Maintenance and Repair Occupations




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Employment in 2010	5,428, 600
Projected Employment in 2020:	6,228,700
Growth Rate	14.7% growth (Moderate)

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*Sample Occupations (with projected growth rate)*

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Bicycle Repairers (37.6%)  
 Heating, Air Conditioning, and Refrigeration Mechanics and Installers (33.7%)  
 Security and Fire Alarm Systems Installers (33%)  
 Medical Equipment Repairers (31.5%)  
 Radio, Cellular, and Tower Equipment Installers and Repairs (29.4%)  
 Motorcycle Mechanics (23.6%)  
 Industrial Machinery Mechanics (21.6%)  
 Motorboat Mechanics and Service Technicians (20.6%)  
 Automotive Body and Related Repairers (18.4%)  
 Locksmiths and Safe Repairers (17.7%)  
 Automotive Service Technicians and Mechanics (17.2%)  
 Telecommunications Equipment Installers and Repairers (14.6%)  
 Bus and Truck Mechanics and Diesel Engine Specialists (14.5%)  
 Telecommunications Line Installers and Repairers (13.6%)  
 Farm Equipment Mechanics and Service Technicians (13.4%)  
 Computer, Automated Teller, and Office Machine Repairers (6.5%)  
 Watch Repairers (5.9%)

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Table 4.4 (continued)

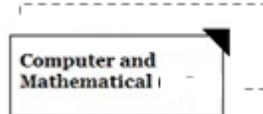
Occupational Group: Healthcare Practitioners and Technical Occupations



Employment in 2010	7,799,300
Projected Employment in 2020:	9,819,000
Growth Rate	25.9% growth (High)
Sample Occupations (with projected growth rate):	
Veterinary Technologists and Technicians (52%)	
Diagnostic Medical Sonographers (43.5%)	
Physical Therapists (39%)	
Dental Hygienists (37.7%)	
Audiologists (36.8%)	
Veterinarians (35.9%)	
Occupational Therapists (33.5%)	
Emergency Medical Technicians and Paramedics (33.3%)	
Optometrists (33.1%)	
Pharmacy Technicians (32.4%)	
Physician Assistants (29.5%)	
Opticians, Dispensing (28.9%)	
Chiropractors (28.3%)	
Respiratory Therapists (27.7%)	
Registered Nurses (26%)	
Pharmacists (25.4%)	
Physicians and Surgeons (24.4%)	
Speech-Language Pathologists (23.4%)	
Licensed Practical and Licensed Vocational Nurses (22.4%)	
Recreational Therapists (17.1%)	
Dietetic Technicians (16%)	

Table 4.4 (Continued)

Occupational Group: Computer and Mathematical Occupations



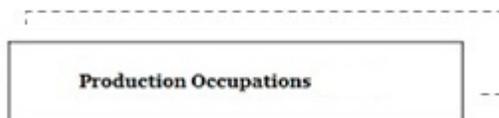
Employment in 2010	3,524,800
Projected Employment in 2020:	4,321,100
Growth Rate	22.0% growth (High)

*Sample Occupations (with projected growth rate)*

Software Developers, Systems Software (32.4%)  
 Database Administrators (30.6%)  
 Network and Computer Systems Administrators (27.8%)  
 Software Developers, Applications (27.6%)  
 Actuaries (26.7%)  
 Computer Systems Analysts (22.1%)  
 Information Security Analysts, Web Developers, and Computer Network Architects (21.7%)  
 Computer and Information Research Scientists (18.7%)  
 Computer Support Specialists (18.1%)  
 Mathematicians (15.7%)  
 Operations Research Analysts (14.6%)  
 Statisticians (14.1%)  
 Computer Programmers (12.0%)  
 Mathematical Technicians (6.2%)

Table 4.4 (Continued)

Occupational Group: Production Occupations



Employment in 2010	8,951,200
Projected Employment in 2020:	8,594,400
Growth Rate	4.0% growth (Low)

*Sample Occupations (with projected growth rate):*

- Sawing Machine Setters, Operators, and Tenders, Wood (24.7%)
- Woodworking Machine Setters, Operators, and Tenders, Except Sawing (20.2%)
- Computer-Controlled Machine Tool Operators, Metal and Plastic (19.2%)
- Painting, Coating, and Decorating Workers (17.2%)
- Cabinetmakers and Bench Carpenters (16.8%)
- Structural Metal Fabricators and Fitters (15.7%)
- Welders, Cutters, Solderers, and Brazers (15.0%)
- Water and Wastewater Treatment Plant and System Operators (11.6%)
- Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic (10.8%)
- Machinists (8.5%)
- Upholsterers (4.2%)
- Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic (3.8%)
- Packaging and Filling Machine Operators and Tenders (3.8%)
- Medical Appliance Technicians (3.7%)
- Nuclear Power Reactor Operators (3.6%)
- Tailors, Dressmakers, and Custom Sewers (2%)
- Paper Goods Machine Setters, Operators, and Tenders (-6.1%)
- Model Makers, Metal and Plastic (-8.2%)
- Sewing Machine Operators (-25.8%)
- Shoe Machine Operators and Tenders (-53.4%)

In order to provide highlights from the employment projections, the BLS and many career exploration publications typically publish lists of the top 25 fastest growing occupations and the top 25 occupations showing the largest numerical growth, shown in Tables 4-1 and 4-2 below.

**Table 4-1:  
Top 25 Fastest Growing Occupations**

Occupational Title	2010 Employment (in thousands)	2020 Projected Employment (in thousands)	Percent Change, 2010- 2020
Personal Care Aides	861	1,468.00	70.50%
Home Health Aides	1,017.70	1,723.90	69.40%
Biomedical Engineers	15.7	25.4	61.70%
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	29.4	47	60.10%
Helpers—Carpenters	46.5	72.4	55.70%
Veterinary Technologists and Technicians	80.2	121.9	52.00%
Reinforcing Iron and Rebar Workers	19.1	28.4	48.60%
Physical Therapist Assistants	67.4	98.2	45.70%
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	57.9	84.2	45.40%
Meeting, Convention, and Event Planners	71.6	102.9	43.70%
Diagnostic Medical Sonographers	53.7	77.1	43.50%
Occupational Therapy Assistants	28.5	40.8	43.30%
Physical Therapist Aides	47	67.3	43.10%
Glaziers	41.9	59.6	42.40%
Interpreters and Translators	58.4	83.1	42.20%
Medical Secretaries	508.7	718.9	41.30%
Market Research Analysts and Marketing Specialists	282.7	399.3	41.20%
Marriage and Family Therapists	36	50.8	41.20%
Brickmasons and Blockmasons	89.2	125.3	40.50%

Occupational Title	2010 Employment (in thousands)	2020 Projected Employment (in thousands)	Percent Change, 2010- 2020
Physical Therapists	198.6	276	39.00%
Dental Hygienists	181.8	250.3	37.70%
Bicycle Repairers	9.9	13.6	37.60%
Audiologists	13	17.8	36.80%
Health Educators	63.4	86.6	36.50%
Stonemasons	15.6	21.4	36.50%
Cost Estimators	185.4	252.9	36.40%
Medical Scientists, Except Epidemiologists	100	136.5	36.40%
Mental Health Counselors	120.3	163.9	36.30%
Pile-Driver Operators	4.1	5.6	36.00%
Veterinarians	61.4	83.4	35.90%

**Table 4-2:  
Top 25 Occupations with the largest numerical growth**

Occupational Title	2010 Employment (in thousands)	2020 Projected Employment (in thousands)	Percent Change, 2010-2020
Registered Nurses	2,737.4	3,449.3	26.0
Retail Salespersons	4,261.6	4,968.4	16.6
Home Health Aides	1,017.7	1,723.9	69.4
Personal Care Aides	861.0	1,468.0	70.5
Office Clerks, General	2,950.7	3,440.2	16.6
Combined Food Preparation and Serving Workers, Including Fast Food	2,682.1	3,080.1	14.8
Customer Service Representatives	2,187.3	2,525.6	15.5
Heavy and Tractor-Trailer Truck Drivers	1,604.8	1,934.9	20.6
Laborers and Freight, Stock, and Material Movers, Hand	2,068.2	2,387.3	15.4
Postsecondary Teachers	1,756.0	2,061.7	17.4
Nursing Aides, Orderlies, and Attendants	1,505.3	1,807.2	20.1
Childcare Workers	1,282.3	1,544.3	20.4
Bookkeeping, Accounting, and Auditing Clerks	1,898.3	2,157.4	13.6
Cashiers	3,362.6	3,612.8	7.4
Elementary School Teachers, Except Special Education	1,476.5	1,725.3	16.8
Receptionists and Information Clerks	1,048.5	1,297.0	23.7
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,310.4	2,556.8	10.7

Occupational Title	2010 Employment (in thousands)	2020 Projected Employment (in thousands)	Percent Change, 2010-2020
Landscaping and Groundskeeping Workers	1,151.5	1,392.3	20.9
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,430.0	1,653.4	15.6
Construction Laborers	998.8	1,211.2	21.3
Medical Secretaries	508.7	718.9	41.3
First-Line Supervisors of Office and Administrative Support Workers	1,424.4	1,627.8	14.3
Carpenters	1,001.7	1,197.6	19.6
Waiters and Waitresses	2,260.3	2,456.2	8.7
Security Guards	1,035.7	1,230.7	18.8
Teacher Assistants	1,288.3	1,479.3	14.8
Accountants and Auditors	1,216.9	1,407.6	15.7
Licensed Practical and Licensed Vocational Nurses	752.3	920.8	22.4
Physicians and Surgeons	691.0	859.3	24.4
Medical Assistants	527.6	690.4	30.9

Source: Employment Projections program, U.S. Department of Labor, U.S. Bureau of Labor Statistics.  
 Website: [http://www.bls.gov/emp/ep\\_table\\_103.htm](http://www.bls.gov/emp/ep_table_103.htm)

A major strength of this data is its role in providing insights into on-going industry shifts.

All of this data can be useful in generating conversations, suggesting potential career options and assessing the strength of career options. For example, the predicted growth for biomedical engineers, medical scientists, bicycle repairers and health educators reflect emerging opportunities in a society that promotes both simple strategies for personal health and fitness (bicycling, good nutrition and community health education) and also high tech advanced medical research (biomedical engineers, medical scientists).

Or, for example, the projections show that employment for manufacturing production workers will grow slowly. However, employment for maintenance and repair of industrial equipment is projected to show strong growth. These projections may reflect the shift toward more use of automation and technology in manufacturing, with the typical manufacturing worker now being a technician or mechanic who maintains a high-tech automated factory rather than an assembly line worker.

But in general, other than a few interesting insights about emerging fields and economic trends, most of the jobs on these “top 25” lists have been a long-time part of the occupational landscape. Registered Nurses. Personal Care Assistants. Retail Salespersons. Cashiers. Construction Laborers. Carpenters. Carpenter Helpers. Landscaping and Groundskeeping Workers. Dental Hygienists. Waiters and Waitresses. Overall, the collection of “top 25” lists do not really tell a compelling story about the economy.

One challenge is that it is hard for BLS statistical programs to highlight newly emerging job titles and new job descriptions.

BLS tries to maintain consistent categories over time, in order to provide a consistent series of historical data; although of course they will sometimes add new categories or re-group jobs as technology and job demand changes. However, an

inevitable challenge is that sometimes the existing groupings can obscure interesting patterns in employment.

For example, until 2013, web developers were grouped in with other computer programming or graphic design occupations, not having a separate category for web development. In 2013, BLS added web developers to the list of occupations, along with 24 other new occupations, long after these occupations have become an important feature in the economy and an important source of career opportunities.

Another basic challenge is the simple fact that the lists of “top 25” occupational titles pull these occupational titles out of context. So, for example, while the category titled “Elementary School Teachers, Except Special Education” is in the list of occupations providing the largest number of new jobs, the closely-related category “Special Education Teachers” also shows strong growth, but, since it is smaller, is not on the “top 25” list.

There is the important concern that decision-making based on employment projections will result in misdirection of resources and educational investments.

In a healthy economy, individuals and organizations gather as much information as possible to make good decisions. For example, students and their families gather information about the local, regional and national job market in order to make good decisions about first career steps. School and college leaders study the same information when deciding whether to launch new programs or expand, maintain or cut back on existing programs. The BLS employment projections are extremely valuable for this decision making, but should never be the only source of information.

In a healthy economy, industries and occupations may surprise experts by rebounding after a period of decline. New technology or rediscovery of old technology, and new consumer needs or renewed attention to earlier values can result in a turnaround of industries that had been expected to decline and die. Entrepreneurial efforts can tap into areas neglected by others, resulting in new

energy and revival. Recently, revitalization in manufacturing and agriculture have demonstrated this concept. Recent news reports have highlighted a shortage of manufacturing workers suggests that decision-making by individuals and organizations in the past few decades was not sufficiently responsive to signs of resilience and revitalization in manufacturing.

Most importantly, there is a danger that if we view this data too rigidly, to imply that workers must be prepared and trained to compete for a limited number of pre-defined jobs, we will fail to understand the full potential of the economy.

The formal employment data should be just a starting point for discussion, helping to identify trends and to raise good questions. The data should be supplemented by observation, conversation about underlying trends and entrepreneurial prospects and other exploration. Exploration should go beyond the standard BLS research categories in order to uncover interesting trends.

The concept of the mosaic economy suggests a fresh approach to analyzing labor market trends. The job market can be very dynamic, with new opportunities emerging as the economy shapes and re-shapes itself. People work in many creative efforts, often in jobs that do not fit neatly into the categories defined by labor market statistics. Economic trends can create clusters of new jobs that span several different industries and occupations, and therefore could be easily missed by the formal data.

For the past several years, I have worked with students and colleagues to gather informational interviews with people in a variety of career fields. I also gather data through several youth employment database projects that I manage, getting a glimpse of people's careers and career paths. I have learned that many people have careers that evolved over many years, having been shaped by personal choices, changes in technology, local, national and world economic trends, environmental concerns, and other factors. Many people are now working in areas very different from the career paths that they started on when they were in high school, college and first jobs. Many work in job titles that they had never heard of and would not have thought of when

they were in school and preparing to launch their careers. Many are pursuing their original career values and interests in ways they would not have predicted, in occupations and industries that are different from their earliest expectations.

When we ask people about their careers, several themes emerge. Basic themes of food, personal health, environment, community connectedness, artisanship and entrepreneurship mix together across industries and occupations to create a mosaic of career opportunities. Different ways of organizing work have produced opportunities in professional and business services in support of manufacturing, technology, health care and other sectors.

The values of “personal environment” and “community connectedness” are apparent in a variety of jobs. One example is a bookstore events coordinator who organizes readings, book clubs, discussion groups and lectures, making the bookstore a source of community connection. Another example is a workshop instructor in a “sewing lounge,” a fabric store where people can drop in to rent the sewing machines, take classes and workshops, buy fabrics and meet people.

Similarly-themed examples include a community gardening coordinator, farmers’ market coordinator, yoga instructor, fitness center manager, developer of a new social media website, writer for an online newspaper, park landscaper, instructor in a homelessness outreach project, pastor in a small community church, and a variety of other professionals in health, education, social and community settings. These jobs, which span private and public sectors, and include technology, services, hospitality and retailing, all center on the themes of personal environment and community connectedness.

Another theme is the importance in our personal, community and professional lives of making, growing, fixing and building things.

A small but visible artisanal economy is emerging, with both established producers and newer firms creatively producing organic food products, building

wooden furniture, building boats, manufacturing custom bicycles, producing organic cotton fabrics, and designing and producing clothing.

On a larger scale, manufacturers are finding new niches in green technology, medical product development and even in many almost-forgotten sectors of basic manufacturing. Construction and mechanic/repair trades are evolving with the use of new technology and environmental approaches. Professional services in support of manufacturing and agriculture are re-emerging, with new demands for technical training, research, marketing and distribution support.

Another theme of the mosaic economy is the theme of social, personal and business entrepreneurship. People create and share open source software, create and launch new websites, organize community arts programs, youth programs, sports leagues, or recovery and self-help programs. People create start-up businesses and work in freelance roles. People invest time in community organizing, volunteer work and internships, not only for the experience itself, and not only for the benefit to communities, but, increasingly, as a way of investing in future careers.

Understanding the entrepreneurial focus of the current economy is important. Even in regular wage and salary jobs, people are most successful when they take an entrepreneurial approach to their work and long-term career path, being willing to try new things, take on new assignments, learn about new products and develop new skills.

## 5 | Education and Careers

A young woman who has helped to care for her mother during a long illness is inspired by the dedication of the nurses she has met, and decides that she wants to study nursing. She will need to take pre-requisite courses before applying to a nursing program, but knows that it is something she values and wants to pursue.

A man in his 40s is considering various career options after struggling with many life crises. After many years of short-term jobs and frequent unemployment, he is not sure if he should go back to school or try to find a job that offers on-the-job training and long-term growth opportunities. He enjoys working with his hands though does not have expertise in any particular skilled trade or occupation.

A high school student who is passionate about art is making a decision to apply to college programs in art or design. He is weighing different options, including fine arts programs, graphic design programs, and industrial design programs.

In a mosaic economy, there are many different options and many different career paths, with no single best option in any situation. People go through a

decision making process that includes three dimensions: understanding one's own career interests and values; understanding labor market opportunities; and evaluating possible paths and timelines for getting started in a career.

Some careers have well-defined paths for getting started. There are many occupations that require apprenticeship training; others that require two-year, four-year or graduate degrees and licensure. Many of the fast-growing occupations in the current economy require some training beyond high school.

There are many other occupations that do not have specific educational or licensure requirements, and are often held by people with a variety of educational backgrounds. Some career fields favor higher education while others do not; while some fields are accessible to people with a wide range of experience and education. Table 5-1 presents selected examples.

**Table 5-1:  
Educational Levels and Occupations:  
Selected Examples**

Education level of individuals currently in the field	<i>High Growth Occupations</i>	<i>Moderate or Low Growth Occupations</i>
High School or Less  (over 50% of individuals have high school or less)	Bicycle Repairers Childcare Workers Home Health Aides Industrial Machinery Mechanics Motorcycle Mechanics Personal Care Aides	Bus Drivers Forest and Conservation Workers Home Appliance Repairers Light Truck and Delivery Drivers Machinists Maintenance Workers, Machinery
Apprenticeship  (over 50% of individuals completed apprentice training)	Brickmasons and Blockmasons Carpenters Electricians Glaziers Plumbers, Pipefitters, and Steamfitters Stonemasons	Elevator Installers and Repairers Sheet Metal Workers
1-3 Years Postsecondary  (Over 50% of individuals have 1 to 3 years of postsecondary education)	Dental Hygienists Emergency Medical Technicians and Paramedics Environmental Engineering Technicians Medical Equipment Repairers Occupational Therapy Assistants Physical Therapist Assistants Radio, Cellular, and Tower Equipment Installers and Repairers Respiratory Therapists Veterinary Technologists and Technicians	Bailiffs Police and Sheriff Patrol Officers Respiratory Therapist Technicians Surveying and Mapping Technicians

Education level of individuals currently in the field	<i>High Growth Occupations</i>	<i>Moderate or Low Growth Occupations</i>
4 or More Years College  (Over 50% of individuals have four years or more of college)	Actuaries Athletic Trainers Computer Systems Analysts Database Administrators Environmental Engineers Financial Analysts Health Educators Healthcare Social Workers Market Research Analysts and Marketing Specialists Network and Computer Systems Administrators Occupational Therapists Physical Therapists	Accountants and Auditors Aerospace Engineers Art Directors Biological Technicians Budget Analysts Commercial and Industrial Designers Computer and Information Systems Managers Computer Programmers Detectives and Criminal Investigators Dietitians and Nutritionists Landscape Architects Public Relations and Fundraising Managers
Graduate or Professional Degree  (Over 50% of individuals have a graduate or professional degree)	Audiologists Chiropractors Epidemiologists Marriage and Family Therapists Pharmacists Physicians and Surgeons Rehabilitation Counselors Speech-Language Pathologists Veterinarians	Career/Technical Education Teachers, Secondary School Clergy Lawyers Librarians Mathematical Technicians Mathematicians Urban and Regional Planners

Education level of individuals currently in the field	<i>High Growth Occupations</i>	<i>Moderate or Low Growth Occupations</i>
<p>Varied Educational Levels</p> <p>At least 25% of workers are in the “high school or less” category; at least 25% are in the “1-3 years postsecondary” category; and at least 25% are in the “4 years of college or more” category.</p>	<p>Cost Estimators Choreographers Travel Guides Health Technologists and Technicians, All Other</p>	<p>Tour Guides and Escorts Construction Managers Retail Salespersons Geological and Petroleum Technicians First-Line Supervisors of Office and Administrative Support Workers Dancers Transportation, Storage, and Distribution Managers Industrial Production Managers Wholesale and Retail Buyers Library Technicians First-Line Supervisors of Retail Sales Workers Lodging Managers Agricultural and Food Science Technicians Chemical Technicians Property, Real Estate, and Community Association Managers</p>

Source: BLS National Employment Matrix (Author’s analysis of the data)

There is a complex relationship between the educational requirements for entering a career field and the risks and rewards to entering the field. My analysis of data from the BLS National Employment Matrix shows some of the factors in this complex relationship:

- ❖ In general, the more one invests in education and apprenticeship training, the higher the earnings are likely to be.
  
- ❖ However, the relationship between education and earnings is not a precise relationship, since other factors also influence the average earnings in a career field. The level of specialization, attained through education, apprenticeship or general experience, is a significant factor that affects earning levels. Other factors include the physical demands of the job, physical risks and talents and skills needed.
  
- ❖ Fields that are relatively narrow and specialized (as measured roughly by the number of individuals employed in the occupational area as defined by BLS) tend to pay more than broader, larger fields. Higher earnings serve as a reward for the greater “risk” involved in pursuing specialized education for a relatively small, narrow career field.
  
- ❖ Other things equal, higher-growth fields do not necessarily pay more than moderate-growth and low-growth fields. A possible reason is that a high expected growth rate signals a low “risk” level and therefore attracts individuals to the field, thereby ensuring a strong supply of labor.

❖ Low-growth to moderate-growth career fields may offer more flexibility around educational requirements for entry. Some of the fields with the greatest variety of educational levels – such as property managers, retail and wholesale buyers, industrial production managers, construction managers and supervisors in office, retail and other fields – tend to be long-established, moderate-growth fields where individuals can obtain the necessary knowledge and skill through either education or experience. These career paths are often open to individuals who rise within the organization from a front-line worker to a supervisory or management role.

This analysis shows the value of thoughtful, open-minded and in-depth analysis of job market data and personal observation of opportunities and trends in the job market. There is no one quick and easy story about where the jobs are, and no one typical path to successful careers. Instead, a healthy economy is created when individuals gather information about opportunities (whether through observation, data or both), spend time getting to know their own values and interests, and evaluate possible timelines and paths toward careers.



## 6 | First Career Steps

**W**ith the diverse mosaic of jobs in the economy, many people work in careers that they would not have dreamed of when they were in high school. Careers take shape over time, with one opportunity leading to another, with interesting careers taking shape based on interests, skills, goals and opportunities.

How do young adults learn to navigate job markets to find careers that match their needs, interests and skills? How do mid-career adults continue to build and re-shape their careers? Does high school help students to be ready to take first steps toward careers? What are the elements that help people to navigate from high school to their current careers? What are some barriers that can make it hard to navigate, especially in the first five or ten years after high school?

In two survey projects, I've gathered information from youth and from professionals about their expected and actual career paths.

The survey of adult professionals, called the Career Outlook Project, is an informational interview for gathering information about people's careers and the paths they have followed to attain these careers. The interview questions ask people about their jobs, especially about the skills that are important in their jobs, the

education and training that they had and the education and training they recommend for others entering the field, and for suggestions about related jobs and job titles that might be interesting to people interested in their field. People are energized by the questions, enthusiastically talking about the skills that they use in their work and the preparation that they recommend for others interested in their career field.

In these interviews, most people say that they did not know when they were in high school that they would be in their current career area.

For example, a self-employed computer programmer and consultant, who is in his mid-50's, answered that he did not know when he was in high school that he would work in the computer field. He writes that he was exposed to computer programming during high school and was not interested. Years later, he got a PC when they were first developed, started using it and self-taught himself as the industry grew. He has taken a few specific courses, read a lot of textbooks and read a lot of manuals over the last twenty years and now has a successful computer programming consulting business, providing customized software for clients.

A young single mother writes that she is in charge of shipping/receiving, expediting, inventory, and the outside processing of parts at a small machine shop. She enjoys the freedom the job provides, local travel, and the good pay. She says that when she was in high school she didn't know about this field of work, and advises others who are interested to attend a trade school or to pursue an engineering or technical degree. She writes that "machine work has long hours but can pay pretty decently. It is meticulous but very interesting. People who repair the machines that the parts are made on (CNC lathes and CNC mills) can make really good money. There are shops that are willing to train and trade schools that teach you how to run the machines. Machine shops not only need machinists but they also need people to run their offices for billing, payroll, bidding and quotes on jobs as well as delivery drivers, part inspectors, quality control managers, engineers and a shipping department."

A young woman with an art degree describes her job as a kitchen designer for a hardware store. “I work in a hardware store that sells kitchen appliances, cabinets and woodwork for kitchens. I meet with customers in the store and onsite in their homes to help them design a layout and sell them the materials they need. ” She notes that the work pays well, with both salary and commission. She explains that the job exercises her artistic and creative skills as well as skills in communication, teaching customers about design concepts, math, measurement and sales. She writes that she did not know about this field of work until she started in the job a few years after finishing college.

A marketing specialist who works for a small company says that she has been interested in the marketing field ever since she started working with graphic design software in high school. After high school, she attended community college, first completing a graphic design certificate program and then continuing toward an Associates degree. She advises people interested in marketing that “the greatest thing about this field is the wide variety of tasks involved. It is very important to get your hands dirty, play with the necessary software programs, and get some hands-on experience. College education is important to help you understand the business world, to sharpen your communication skills, and to practice working under pressure. See if you can find an internship or job where you can write, design, and/or analyze data so you can expand your knowledge early on. And never stop looking for ways to improve your work: that’s what marketing is all about.”

Typical of a mosaic economy, each of these four people work in jobs that make up a small proportion of the total jobs in the economy, with job titles and job descriptions that don’t fit neatly into typical occupational title categories, and in jobs that they would not have thought of when they were in high school.

Are these people just lucky to have found interesting work? How will new generations of workers navigate to find interesting careers if many are going to work outside of well-known career areas? Are there any signs that the next generation of

workers will be prepared to find and create interesting and economically sustainable careers?

In another survey project, I developed and piloted an online survey of high school students about career development. I called the survey the “First Steps” career survey, reflecting the idea that high school students do not need to have their entire career mapped out, but should be ready to take first steps toward post-secondary education and careers.

I promoted the survey through colleagues in youth employment programs, vocational-technical schools, youth organizations and generally via social media. The survey asked about career goals, career-related experiences, career-related skills and other topics. The initial phase of the survey project brought in 583 responses, with responses coming from a mixture of urban, suburban and rural areas, from diverse racial/ethnic and socioeconomic settings. While the responses do not necessarily represent a random sample, they do represent a strong cross-section of students from different backgrounds.

One of the survey questions asks students whether they had one strong career goal, or whether they were interested in two or three possible career areas, or whether they were not sure or had just started thinking about careers. More than half of the students have said that they had two or three career areas that interested them. Students in 9<sup>th</sup> grade are somewhat more likely than those in the upper grades to say that they had not set goals yet, and students in 12<sup>th</sup> grade are more likely than others to say that they have a single strong career goal. But among all grades, at least half of students have said that there were at least two or three career areas that might interest them.

**Table 6-1: Do you know yet what career areas you are interested in?**

Survey Response	9 <sup>th</sup> Grade	10 <sup>th</sup> Grade	11 <sup>th</sup> Grade	12 <sup>th</sup> Grade	All Grades
YES, I can name 2 or 3 possible career areas that might interest me	50%	56%	51%	50%	52%
YES, I have one strong career goal	11%	20%	21%	39%	24%
NO, I do not know yet what type of career I want	13%	9%	7%	5%	8%
NOT YET, but I am starting to think about careers	26%	15%	20%	6%	16%
TOTAL	100%	100%	100%	100%	100%

Source: First Steps Career Survey

The next survey question asks students to list some of their possible career interests. Some of those who said they were interested in two or three different areas are interested in closely-related fields, while others are considering fairly disparate options. Many responses include an aspiration toward the arts, music, acting or professional sports or other hard-to-enter fields, along with some alternative career options. Others responses include careers in different occupational areas but with similar themes, such as military/police/law or photography/travel/history. These responses show a level of flexibility and diversity of interests that is important in a mosaic economy.

Another section of the survey asks students to evaluate their strength in various career skills. The question asks students to rate their strength using a scale of 1 to 5, with 5 as "very strong" and 1 as "not yet strong."

**Table 6-2: How Would You Rate Your Strength in the Following Career Skills?**

What Skill	5=Very Strong	4	3 = In-between	2	1=Not Yet Strong	Average Rating
Understanding workplace safety rules	67.8%	22.8%	6.4%	1.2%	1.8%	4.54
Dressing appropriately for a workplace	64.3%	23.3%	8.8%	2.3%	1.2%	4.47
Being on time for work or meetings	61.1%	27.1%	9%	1.6%	1.2%	4.45
Having good attendance	61.7%	25.4%	9.6%	2.0%	1.2%	4.44
Working with people	41.8%	40.5%	14.5%	1.8%	1.4%	4.19
Creative thinking	33.5%	38.8%	21.3%	5.5%	0.9%	3.99
Logical thinking	32.6%	40.1%	22.4%	3.6%	1.3%	3.99
Leadership	34.0%	34.8%	21.9%	6.8%	2.5%	3.91
Communicating verbally	30.6%	35.7%	26.9%	4.2%	2.6%	3.87
Communicating in writing	23.7%	35.2%	30.3%	8.7%	2.1%	3.70
Working with tools and equipment	23.5%	29.6%	27.8%	14.0%	5.2%	3.52
Managing timelines and projects	17.3%	35.1%	31.1%	13.3%	3.2%	3.50
Working with data and numbers	18.5%	26.2%	31.7%	18.3%	5.3%	3.34
Source: First Steps Career Survey						

Students consistently give themselves strong ratings for basic foundation skills (often called “soft skills”), such as being on time for work and meetings, having good attendance, and dressing for a professional workplace, with most choosing “5-Very Strong” for these skills. Skill ratings vary for other career skills, which include communicating in writing, working with people, leadership, creative thinking and other skills, with most students expressing strong or moderate confidence in their skills. Skill ratings have been weakest for working with tools and equipment, managing timelines and projects, and working with data and numbers.

Student confidence in these skills is correlated with other experiences they have had. Students who indicate that they have participated in internships, after-school jobs, summer jobs, volunteer work, career/vocational programs, career-related classroom projects and other career-related learning experiences are more confident of their career-related skills.

The high level of confidence expressed by the students in the survey was surprising to some who read the results. People involved with education and youth programs have read numerous studies that express concern about the basic foundation skills that youth bring to their first jobs, reading about a shortage of the “soft skills” needed for career success.

As with many issues in youth development, the full story is complex. Professionals who manage youth programs can tell stories about youth summer jobs programs and internship programs in which the students shine; in which there is an almost-magical spark of energy that grows from the work experiences. But they can also tell of experiences in which they struggle, in which students seem unmotivated, and in which everyone’s best efforts just can not seem to ignite the spark that is needed for a truly beneficial work experience program.

Sometimes the experience is between these two extremes. Youth vary in the backgrounds, attitudes, skills and motivation they bring to first jobs and internships. Even among those who start with major weaknesses, most can successfully and

quickly develop basic foundation skills at the same time that they are exploring higher-level career skills and learning about what types of career options they can do in the future.

In a reflection essay about his internship experience, a student writes about working to overcome problems with attendance and timeliness. The student was interning with the local police department, and was inspired by the connection he felt with the police officers who were his internship supervisors and the strong connections he observed among all of the officers in the police department. He enjoyed learning about police work, writing about how much he enjoyed trying out the police department's scheduling software and learning about other systems and strategies used in the department. In response to a question about attendance, the student wrote:

“Although it may come naturally for some people to be punctual and have perfect attendance, I find it to be relatively difficult.... When it comes to work however, my motivation begins to increase. My internship at the police department was so exciting and riveting that I always felt motivated to go and see the officers. It was as if I was looking at a glimpse of my career future.”

This student beautifully described some of the key personal factors in successful first career steps: understanding yourself; finding motivation; taking action to move toward career goals.

When adults are interviewed about their career paths, they usually mention both internal and external factors that come together fortuitously, typically saying things like “good luck and hard work landed me here,” or “when opportunities to get into this field began to open up, I was interested.”

For this student, the good fortune of finding good mentors in a career area that is exciting to him coincided with internal motivation and self-understanding. For

many high school students and young adults, similar experiences open up doors to interesting career paths.

In the First Steps career survey, one of the questions asks students who have had jobs, internships or volunteer positions what they have learned from these experiences. Students report that their work experiences helped them to learn about career options, learn basic foundation skills, and learn about and apply other career-related, professional and academic skills.

**Table 6-3: If you have had a job, internship, or volunteer position, what do you think you learned from your experience? Check as many as apply.**

Survey Response	Percent
Career options (what type of careers I might like)	47%
Basic foundation skills (such as working with others or professionalism)	46%
Career-specific skills (such as childcare, cooking or computer skills)	39%
Higher-level professional skills (such as project management, creative thinking, or leadership)	28%
Applied academic skills (such as how to use writing, reading, or math in a workplace)	25%
Not applicable (have not had a job, internship or volunteer experience)	22%
None of the above	8%
Other	4%

Source: First Steps Career Survey

These survey results and individual stories provide a positive picture about how young adults get ready to take first career steps and how people successfully navigate in a mosaic economy.

However, there are many students and adults who are stuck; who are not experiencing the serendipity of uncovering opportunities, investing in skills and navigating successful and interesting career paths.

Among young adults, there are some who navigate smoothly from high school to college to first jobs and long-term career paths. There are others whose career paths have many stops, starts and turns along the way.

For some, the less-than-straight path leads to successful careers. It is important to recognize that it is normal in today's economy for many young adults to take a non-traditional career path and to ultimately find a satisfying and economically-sustainable career. It is useful to step back and understand the paths that people naturally, organically follow as they pursue education and build careers.

Although it is tempting to want a neatly-organized set of pathways, the mosaic economy is, by far, the opposite of a "planned economy" and there isn't always a straight-line path from high school to college to a set of pre-defined jobs.

Labor economists write that it is typical for young adults to have a "shopping period" in the first few years after college, frequently changing jobs as they "shop" for a job that is the best fit. Labor economists have looked at how students who graduate during a recession and take low-paying jobs upon graduation are generally able to "shop around" for new jobs over the next few years.

A serious concern, however, is that studies find that those who grew up with more-advantaged socioeconomic backgrounds are better able to use this shopping period to improve their earnings than are those who grew up in less-advantaged backgrounds, even with comparable college degrees and first jobs.<sup>10</sup>

Another concern is that some students feel “stuck” and lack direction even before they leave high school. In most high schools, there are some students whose goals emerge early on. These students know that they want to attend a four-year college or two-year college or pursue a skilled trade or enter a family business. They may be interested in a particular field of study or career or may be motivated toward a general liberal arts education. There are other students whose plans emerge slowly, and who make decisions after exploring various interests and weighing different options. But there are also others who have no clear focus as high school graduation approaches, and if asked, answer vaguely about maybe working or maybe taking some classes somewhere or maybe no plans yet at all.

And, in fact, many young adults do move from job to job or move in and out of colleges and experience major periods of unemployment in the years after high school.

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<sup>10</sup> The Short- and Long-Term Career Effects of Graduating in a Recession. Philip Oreopoulos, Till von Wachter and Andrew Heisz. *American Economic Journal: Applied Economics*, 4(1): 1–29. Abstract: This paper analyzes the magnitude and sources of long-term earnings declines associated with graduating from college during a recession. Using a large longitudinal university-employer-employee dataset, we find that the cost of recessions for new graduates is substantial and unequal. Unlucky graduates suffer persistent earnings declines lasting ten years. They start to work for lower paying employers, and then partly recover through a gradual process of mobility toward better firms. We document that more advantaged graduates suffer less from graduating in recessions because they switch to better firms quickly, while earnings of less advantaged graduates can be permanently affected by cyclical downgrading.  
Website Link: <http://www.aeaweb.org/articles.php?doi=10.1257/app.4.1.1>

In an analysis of National Longitudinal Survey data, researchers from the Bureau of Labor Statistics found that 6% of 21-year-olds who had not attended college had never held any job, 45% had never held the same job for more than a year, and only 16% had held any job for two years or longer. The same survey analysis found that 37% of high school dropouts and 19% of high school graduates not enrolled in college were neither employed nor in training during the October when they were age 21. <sup>11</sup>

The National Center for Educational Statistics reports that only 38% of students who start a four-year degree as full-time students finish within four years and only 58% finish within six years. Only about 30% of full-time students who start certificate or Associate's degree programs graduate within 150% of the expected time (such as within three years for a two-year program). <sup>12</sup>

All of this data, taken together, suggests that while students should not be expected to map out their whole career path while in high school, they should be able to leave high school with a foundation of knowledge, skills, experiences and confidence that will help them to navigate along the way.

What should career development look like in a mosaic economy? The field of systems thinking suggests that if policy makers or educators want to intervene and improve a system, it is important to first step back and understand how the system works, particularly taking a look at how the system works naturally and organically at its best, as well as taking a look at the barriers or issues that can cause the system to fail. Without this type of systems thinking, it is possible that educational and public

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<sup>11</sup> Bureau of Labor Statistics, Monthly Labor Review. America's Youth At 21: School Enrollment, Training, and Employment Transitions Between Ages 20 and 21  
[http://www.bls.gov/news.release/archives/nlsyth\\_01232009.pdf](http://www.bls.gov/news.release/archives/nlsyth_01232009.pdf)

<sup>12</sup> National Center for Educational Statistics, Digest of Educational Statistics,  
[http://nces.ed.gov/programs/digest/d11/tables/dt11\\_345.asp](http://nces.ed.gov/programs/digest/d11/tables/dt11_345.asp)

policy approaches will feel artificial and, more importantly, that approaches may do harm despite good intentions. With a systems thinking approach, education and public policy approaches are able to harness the energy of positive “organic” forces within communities, creating more natural, less artificial strategies that are likely to be most effective.

For many successful young adults, career knowledge and career paths develop organically. Early school, community and home experiences awaken career interests and inspire first career steps.

Some will follow step-by-step career paths, such as exploring interests in particular career fields during high school, going on to study those fields in college, and going on to careers in those fields. For example, a student might discover a love for science and technology, participate in engineering clubs, robotics clubs, computer science classes or other technology programs in high school, attend engineering college and become an engineer. The student may be encouraged in this path by teachers and mentors from their school, home or wider community.

Others will follow less-linear paths, but will navigate with confidence and find a satisfying career path. A student may have several different interests and passions during high school and enjoy a variety of classes and activities. The student may research career options through websites, books and other sources, talk with teachers, mentors, family and community members. The student may pursue a more general 2-year or 4-year degree; or may pursue a certificate, on-the-job training or apprenticeship, either directly from high school or after working for a year or two after high school. As a young adult, he or she may work in several different jobs at first, but with the help of mentors, family and community members, these steps will lead toward a satisfying long-term career.

In a mosaic economy, opportunities exist for both linear and less-linear career paths. There are many jobs that require specific education and training, such as engineering, architecture, medical careers, teaching, social work, construction trades

and more. There are also many jobs that can be entered via a variety of different paths.

What are the barriers to successful navigation?

As students think about various educational and career-related choices, they naturally tend to weigh potential outcomes, both positive and negative. Students consider the experiences of friends, relatives and acquaintances; assess their own impressions about the job market and their own experiences in school and jobs; and consider positive and negative messages they have heard from teachers, counselors, youth program staff, media and others.

Students also consider the reliability of what they have seen and heard. For example, they may attend a school in which the goal of entering a four-year college is highly emphasized, but their own experiences and observations show that starting college is not a guarantee of graduating or having a successful career. They may have heard mixed messages about the value of college for everyone vs. the likelihood that they, personally, will succeed in college. Students from low-income communities in particular may also have heard mixed messages about their own community and chances of success, with expressions of concern backfiring as expressions of low expectations.

Effective career development education for high school students and young adults needs to be more than just talking about and promoting the choices that we think a student ought to make. It needs to be based on providing information and experiences that can illuminate good decision making. It needs to be done with honesty — presenting a wide range of possible choices and paths — with recognition that in real life, people take many different routes to successful careers. Real-life connections with local professionals and local businesses can help students visualize different options for their future.

Opportunities for an in-depth look at job market information can uncover interesting information about real careers in the current economy. A variety of

hands-on experiences, such as community service projects, after-school jobs, internship programs, and various other school and community activities can light a spark and provide motivation.

Ideally, career development education should provide messages that resonate with people in a way that is honest, respectful and can lead to action. Messages should focus on the strengths of the local and regional economy and should engage students, parents and local community members in dialogues about career opportunities. Messages should focus at the personal level and the “micro-economic” level on the variety of potential job markets in the local and regional economy and not on sweeping “macro-economic” trends about job gains and job losses and groups of people being left behind.

Career development education should be non-biased, avoiding the type of messages often delivered to youth from low-income communities that sometimes subtly and sometimes not-so-subtly communicate low expectations.

Messages about the job market should provide an optimistic look at long-run options, recognizing current gaps in job markets, but focusing on ways that in an entrepreneurial mosaic economy, new opportunities can emerge and job markets can be continually transformed.

### Communication and Personal Motivation

Honesty and respect are important elements in career development education, as well as in any type of life education.

Why do some messages — about careers, education, diet, health, environment, etc. — resonate with people and others are ignored or heard with cynicism? When is it helpful to hear advice about diet and when is it annoying? When is advice about personal health welcome and when is it unwelcome? What career advice do you embrace and what advice do you ignore? How do you, personally, convert public messages about health, diet, exercise, environment, education or careers into personal motivation?

In economics, there is a theoretical model of decision making that assumes that people make rational choices based on available information and based on their personal assessment of the risk and rewards of various options.

Like investors weighing different possible investment options, people weigh various life choices (perhaps explicitly, perhaps more instinctively) to decide how to invest their time, money and energy. They gather information from all possible sources, including looking at the experiences of friends, family and others in their community as well as reading and listening to expert advice.

This suggests that effective motivation needs to be more than just talking about and promoting the choices that we think a student “ought to” make. It needs to be based on providing information and experiences that can illuminate good decision making. It needs to be done with honesty — presenting a wide range of possible choices and paths — with recognition that in real life, people take many different routes to success. Information must be combined with actions that increase the chances of success. Students and others need to be able to develop relevant skills and build a network of support in order to navigate successful choices.

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## First Steps Career Survey

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HOW DO YOU FEEL when people ask you about your career plans? Do you feel confident, worried, ready for the future, or not-so-ready? DID YOU KNOW that many successful adults did not know when they were in high school that they would be in their current careers? Of course, many people chose a career path early on, studied for a particular career, and have enjoyed that career path all along. But for many people, careers evolve over time, as one career opportunity leads to another, and as they continually learn new skills and build their careers.

THIS SURVEY asks about your current career plans -- with the assurance that it is fine if your career plans are continuing to evolve!!

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[1.] Check all that apply -- how do you feel about career planning?

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- Confident
  - Worried
  - Excited
  - Bored
  - Ready
  - Not-so-ready
  - I know exactly what I want
  - I have lots of options
  - I don't have enough information
  - I have too much information
  - I have about the right amount of information
  - I haven't really started planning yet
  - Other (please specify)
- 

[2.] Do you know yet what career areas you are interested in?

---

- YES, I have one strong career goal
  - YES, I can name 2 or 3 possible career areas that might interest me
  - NOT YET, but I am starting to think about careers
  - NO, I do not know yet what type of career I want
- 

[3.] If you can, please list one or more career areas that might interest you.

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Career interest #1: \_\_\_\_\_  
Career interest #2: \_\_\_\_\_  
Career interest #3: \_\_\_\_\_  
Career interest #4: \_\_\_\_\_

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[4.] What do you plan to do after high school? (Or if you are already out of high school, what are you currently doing?) (Check as many as apply)

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- Attend a two-year college
- Attend a four-year college
- Attend a career training program
- Enter an apprenticeship program
- Enter the military
- Work part-time
- Work full-time
- Work or volunteer for a year before attending school/training
- Other (please specify)

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[5.] Which of the following have you done? Check as many as apply.

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- Talking with friends about careers
  - Talking with teachers or counselors about careers
  - Talking with parents about careers
  - Career interest checklists/assessments
  - Hearing guest speakers about careers at my school
  - Career days or Career fairs
  - Field trips to companies and workplaces
  - Job shadow days (spending a day or half-day shadowing someone in their job)
  - Looking at websites, videos or books about careers
  - Summer job(s)
  - After-school job(s)
  - Internship(s)
  - Volunteer work
  - Summer program(s) related to career interests
  - Clubs or activities related to career interests
  - Classroom projects related to career interests
  - None of the above
  - Other (please specify)
-

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[6.] How would you rate your strength in the following career skills?

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	5 = Very Strong	4	3	2	1 = Not Yet Strong
Communicating verbally	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Communicating in writing	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Working with people	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Creative thinking	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Logical thinking	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Leadership	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Working with data and numbers	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Working with tools and equipment	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Managing timelines and projects	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Dressing appropriately for a workplace	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Being on time for work or meetings	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Having good attendance	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Understanding workplace safety rules	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Being motivated and taking initiative	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]

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[7a.] What are the most helpful things that your school or program currently does to help students learn about careers?

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[7b.] What do you think your school or program should do (or do more of) to help students learn about careers?

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8. If you have had a job, internship, or volunteer position, what do you think you learned from your experience? Check as many as apply.

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- Career options (what type of careers I might like)
  - Career-specific skills (such as childcare, cooking or computer skills)
  - Applied academic skills (such as how to use writing, reading, or math in a workplace)
  - Basic foundation skills (such as working with others or professionalism)
  - Higher-level professional skills (such as project management, creative thinking, or leadership)
  - None of the above
  - Not applicable (have not had a job, internship or volunteer experience)
  - Other (please specify)
- 

[9.] What is your current grade or school status? (Or if this is summertime, what grade are you entering next fall?)

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- 12th Grade
  - 11th Grade
  - 10th Grade
  - 9th Grade
  - 8th Grade
  - 7th Grade
  - In college or a training program
  - Not currently in school
  - Other (please specify)
- 

[10.] Where did you learn about this survey? Check as many as apply.

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- School
  - After-school program
  - Summer program
  - Community-based program
  - Church-based program
  - Facebook
  - Website
  - Other (please specify)
-



## **Career Outlook Interview**

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What is your job title?

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What is your job description? What do you like best about this work?

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What are some related career options that people interested in your field should know about?

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What new technology do you think will be important in this industry in the next 10 or 20 years?

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What education and training did you have to prepare yourself for this career?

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What education and training do you recommend for a young person interested in this career?

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When you were in high school, did you know you would be in this career?

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Skills Profile: What skills are most important for this type of job? Which skills are least important?  
Rate the following list of skills on a scale of 5 (most important) to 1 (not important).

	5 = Most Important	4	3	2	1 = Not Important
Artistic	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Athletic/Physical	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Bilingual	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Computer Technology	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Coordination / Using hands, tools, equipment	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Creative Thinking	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Interpersonal	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Investigative/Fact finding	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Leading and Supervising	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Logical Thinking	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Math	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Mechanical Understanding	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Sales and Negotiation	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Scientific and Experimental	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Service/Helping skills	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Teaching/Instructing	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Verbal Communication	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Understanding nature, plants, animals	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Understanding yourself	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]
Writing	[ 5 ]	[ 4 ]	[ 3 ]	[ 2 ]	[ 1 ]

Your Career Area (choose from list):

- |   |  |
|---|--|
| <input type="checkbox"/> Arts, Media and Communications                 | <input type="checkbox"/> Hospitality, Tourism and Recreation |
| <input type="checkbox"/> Business                                       | <input type="checkbox"/> Human Services                      |
| <input type="checkbox"/> Construction and Design                        | <input type="checkbox"/> Information Technology              |
| <input type="checkbox"/> Education                                      | <input type="checkbox"/> Law, Government and Public Service  |
| <input type="checkbox"/> Environment, Agriculture and Natural Resources | <input type="checkbox"/> Science, Technical and Engineering  |
| <input type="checkbox"/> Health   |  |



## 7 | An Entrepreneurial Economy

A yoga teacher describes three different aspects of her career. Along with teaching classes at a yoga studio, she also teaches classes for corporate clients – mostly small and medium-sized companies who want to offer yoga classes to employees – and also runs a successful craft business. She describes the way the things she has learned through yoga help her to balance these roles and avoid the too-busy feeling that permeates so much of urban life.

An art investment and appraisal advisor describes her work, explaining that she helps individuals, museums and companies to evaluate purchases of art and build their art collections. She says that her work started as a hobby and then turned into a business. Over the years, she developed a 4,000-volume art history library to draw on, supplemented now by growing availability of online resources. Her work intersects with the fields of art history, art conservation, the physical preservation of canvases and other artwork, and art appraisal, evaluation of collections for individuals and estates for insurance or sale.

A dentist is an accomplished guitar player, playing professionally and semi-professionally alongside his dental practice. He talks about how he is also re-shaping his professional career to allow more time for teaching and writing about dental

health, something he enjoys very much, and how it all fits together. He is pleased that his son, also a talented musician, has entered a pre-dental program with plans to pursue a similar path.

A senior scientist in a bio-tech research and development company writes about the need to be able to write grant proposals for research grants and to write business proposals to corporate clients to obtain contracts for her company. She says that the entrepreneurial aspect of the work is as important as the research work in a small company that depends on numerous grants and contracts.

A computer programmer for an insurance company describes the many different programming languages and software she has learned over the years and the new projects that have come her way because of her programming skills. She describes the ways that her own entrepreneurial attitude and the opportunities provided by her company mix together to support her professional growth.



In the mosaic economy, almost everything we do to develop our career paths is entrepreneurial. All of the decisions we made along the way – our early summer jobs and internships; our choice of high-school and post-high-school programs of study; our first “adult” jobs; our choices of career options, business ventures, skills development and professional projects – are a form of entrepreneurial investment decision making. Even many of our personal projects may translate into entrepreneurial opportunities when we are looking for new opportunities.

In the 1980s and 1990s, while working for the state unemployment agency, my colleagues and I developed career management seminars that taught the importance of entrepreneurial thinking for workers in the new, changing economy. We offered self-employment start-up programs for anyone interested in self-employment,

temporarily waiving the normal requirements of unemployment insurance programs that require workers to pursue regular wage and salary employment. The agency also offered re-training programs for workers who had been laid off from manufacturing jobs, offering workers the opportunity to pursue office occupations, healthcare occupations, construction trades and other alternative paths.

This was a period of painful reorganization and downsizing, with layoffs resulting from declining manufacturing employment, boom/bust cycles in the new technology sector, and outsourcing of jobs across all sectors of employment. Many people who had grown up with the expectation that they could work for one company for their entire career suddenly found themselves out of work and unsure what to do next.

Books, articles and seminars promoted the idea that the economy was changing and that a new, entrepreneurial approach to career management was essential for survival. I still have a copy of an early 1990s article that circulated through my office, titled “We are all entrepreneurs now,” proclaiming that whether you were starting your own business or navigating a career within an existing business, survival depended on creative thinking, customer service, product quality and leadership skills. To many at the time, this idea was both discouraging and energizing, representing a worrisome loss of security but also a potentially interesting new direction in the economy.

Now, two decades later, the theme of entrepreneurship is embraced as a strong value in the economy. Successful business entrepreneurs are celebrated in the media. Bookstores are full of books about entrepreneurship and business success. Many students participate in entrepreneurship programs, learning how to write business plans and create small start-up enterprises. International development work is successfully pursuing the idea of micro-enterprises, promoting small business start-up as a vehicle for economic development. Technology has created opportunities for many entrepreneurial projects, with technology as the focus of start-up software and

website development ventures and with technology and social media as a platform for building and promoting businesses in all sectors of the economy.

Although entrepreneurship is a visible theme in today's economy, statistics show that the percent of the U.S. labor force that is self-employed or owns an incorporated business has actually grown only slightly in the past two decades. In part, these statistics reflect declining self-employment in agriculture, reflecting a national decline in farmland and farm employment. These statistics also reflect the fact that part-time self-employment is not counted when it is a supplement to a full-time job. And the flat trend may also highlight the fact that the emergence of interesting economic trends does not immediately translate to large numbers. In an environment that strongly values entrepreneurship, perhaps the foundation is just being built for future growth in entrepreneurial work.

What does this foundation look like now?

As of 2010, one out of nine people in the labor force is self-employed or owns an incorporated business. Table 7-1, at the end of this chapter, shows trends from the 1990s to the present.<sup>13</sup>

Table 7-2 shows self-employment rates by type of work. The fields of construction, auto mechanics, personal services such as barbering, professional services such as law and medicine, sales occupations such as real estate brokers or independent sales representatives, and arts occupations such as musicians and artists

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<sup>13</sup> During these years, the percent of workers who were self-employed (as owners of unincorporated businesses) declined slightly, while the percent of workers who owned incorporated businesses increased slightly. Note that owners of incorporated businesses are technically considered employees of their own business for tax and legal purposes, but are counted alongside self-employed workers in these tables in order to create a full picture of self-employment and business ownership. Also note that during these years, agricultural self-employment declined while non-agricultural self-employment rose. Also note that the statistics do not capture part-time self-employment if the person also has a full-time wage-and-salary position.

have high self-employment rates. Agriculture has traditionally had one of the highest self-employment rates, and continues to have a high rate of self-employment, though the total number of agricultural workers (employed or self-employed) has declined in recent years.

Table 7-3 shows self-employment rates by age group and educational level. Older workers, particularly those past traditional retirement age, are especially likely to be self-employed, with self-employment increasing steadily with age as individuals gain more work experience and skills as well as greater access to investment funds. Table 7-3 also shows self-employment rates by educational level, for workers age 25 and over. Workers with professional degrees are most likely to be incorporated and workers with no high school diploma are most likely to be unincorporated self-employed. Overall, the differences across educational levels are small, demonstrating that there are many opportunities for self-employment across many different types of work accessible to people of all educational levels.

While the total number of people nationally who are self-employed in agriculture has declined in recent years, following a national decrease in farmland acreage, small farms, and farm employment, signs of renewal and revival in agriculture come from creative entrepreneurial projects.

In today's economy, many communities that were once focused around agriculture or manufacturing or other anchor industries no longer have that single focus. But agriculture, manufacturing and other traditional fields remain as a potential focus for entrepreneurial efforts.

At a local farmers' market, vendors sell organic produce and many value-added products, such as pies, breads, artisanal cheeses, teas, herbs and spices, recipe booklets, and flats of herbs, vegetable and flower seedlings for the backyard gardens and community gardens of their customers. At these markets, one finds young farm owners, often new to farming, alongside long-time family farm owners.

The website of a statewide network of farmers markets promotes the markets and the many additional events, ranging from music to crafts to bicycle repair that are coordinated with market days. On this website, customers can sign up for an email newsletter, or browse the website for recipe ideas, or connect to farmers markets on social media.

Along the same theme, the very entrepreneurial concept of community-supported agriculture (CSA) fits well in today's culture of social media and networking. Many farms have begun selling CSA shares to residents of nearby cities and towns, selling shares at the beginning of each growing season and delivering seasonal produce to shareholders throughout the year.

In the mosaic economy, traditional self-employment and business ownership are complemented by many avenues for newer approaches and less-traditional entrepreneurship. Personal and social entrepreneurship intermix with business entrepreneurship. Technology is often the focus of entrepreneurial work or a platform for launching and promoting the work.

Social entrepreneurship is re-shaping social and community development work. Many people are exploring new ways of creating community services, such as using crowdsourcing to fund small community projects or raising funds online for a social venture. Many people are simply launching small programs in their neighborhoods and communities, demonstrating an entrepreneurial attitude that translates into social action.

One inspiring social entrepreneur is a West African woman who launched a church-based after-school program in one of the lower-income neighborhoods in Boston. She realized that she had a vision for an after-school program, wanting to provide a safe place for children whose parents were working long hours, and wanting to pass along the richness of West African culture that might otherwise be lost, along with the richness of her Christian faith and practice. She talked to the pastor of her church about starting a program, found volunteers, organized the space,

got licensing, invited families and opened the program. I have visited the program and was treated to recitations of the 23<sup>rd</sup> Psalm, a West African dance, and West African song. She launched the program without grant funding and without assurances of funding, and may not be able to sustain the program forever. But this type of entrepreneurial risk-taking is surprisingly prevalent throughout all sectors of the economy, especially wherever people can invest available resources – time, talents and knowledge – to create a product or service and see where it leads.

The open source software movement provides another example, in a very different arena, of people creating a product with no assurance of profit, but with a spirit that is both generous and entrepreneurial. Software developers create modules of software and share them freely, along with the code used to create the module, through online networks. The software developer may also provide fee-based products and services, including more customized software and consulting services. The free products attract customers for the fee-based products and services. Free software is somewhat similar to the promotional sales and give-aways of traditional retail stores and other businesses. Yet the open source movement has gone far beyond the promotional approaches of traditional businesses, helping to build the very new entrepreneurial culture that makes up part of the mosaic economy.

Business models in the world of software and web design are always evolving, with creators of proprietary, open source and free software projects each exploring new ways of attracting customers, meeting customer needs and generating revenue. For every highly-visible technology start-up, there are many other less-visible but exciting technology projects underway, created by developers who work on projects on their own or in small teams, often in addition to regular full-time jobs.

Similarly, the world of the arts is diversifying, with artist markets and online networks displaying jewelry, fabric arts, pottery, woodworking, handmade furniture and many other works, from craftwork to fine arts.

The world of music is also changing, with musicians exploring ways of building audiences and selling work through a new network of web technology and live performance. Music schools now offer courses in music business and music technology, complementing traditional musical performance and musical composing courses.

In many communities, trends that encourage consumers to support local businesses, buy local foods and to shop for environmentally friendly and fairly traded products are reflected in new coffee shops, restaurants and stores. Coffee shops, restaurants and stores seek out local suppliers for fresh, local, organically grown food and environmentally friendly products and therefore new opportunities along the supply chain are emerging to meet this demand.



None of these non-traditional examples guarantee large numbers of business and self-employment opportunities or promise sustainable incomes. However these examples together represent a new “flavor” to the way work is organized and performed, and set a foundation for future growth. In a mosaic economy, many diverse opportunities make up the total economy, including a foundation of traditional and not-so-traditional expressions of entrepreneurship.

**Table 7-1: Self-employment rates, 1990 to 2009, as a percent of total employment**

Year	Total Self-Employed and Business Owners	Unincorporated Self-Employed	Incorporated Business Owners
1990	11.4%	8.5%	2.9%
1994	12.2%	8.7%	3.5%
1995	11.8%	8.4%	3.4%
1996	11.5%	8.3%	3.2%
1997	11.5%	8.1%	3.4%
1998	11.1%	7.8%	3.3%
1999	10.8%	7.6%	3.2%
2000	10.8%	7.5%	3.3%
2001	10.7%	7.4%	3.3%
2002	10.7%	7.3%	3.4%
2003	11.1%	7.5%	3.6%
2004	11.2%	7.5%	3.7%
2005	11.1%	7.4%	3.7%
2006	11.1%	7.3%	3.8%
2007	11.0%	7.1%	3.9%
2008	10.9%	6.9%	4.0%
2009	10.9%	7.0%	3.9%

Source: U.S. Bureau of Labor Statistics, Monthly Labor Review, September 2010. Self-Employment in the United States. Website: <http://www.bls.gov/opub/mlr/2010/09/art2full.pdf>

**Table 7-2: Self-employment rates by industry,  
2009 annual averages  
As percent of total workers in each industry group**

	Total Self-Employed and Business Owners	Unincorporated Self-Employed	Incorporated Business Owners
BY INDUSTRY			
Total, 16 years and older	10.9%	7.0%	3.9%
Agriculture, forestry, fishing, and hunting	47.0%	39.8%	7.2%
Mining, quarrying, and oil and gas extraction	5.0%	2.5%	2.5%
Construction	26.7%	17.5%	9.2%
Manufacturing	4.6%	2.3%	2.3%
Wholesale trade	11.4%	4.5%	6.9%
Retail trade	8.7%	5.0%	3.7%
Transportation and utilities	8.3%	5.5%	2.8%
Information	7.7%	4.5%	3.2%
Financial activities	12.1%	6.9%	5.2%
Professional and business services	21.3%	13.3%	8.0%
Education and health services	5.0%	3.5%	1.5%
Leisure and hospitality	7.9%	5.0%	2.9%
Other services	20.0%	15.0%	5.0%

Note: Self-employment rates are calculated by dividing the number of self-employed workers in a specified worker group by total employment in the group.

Source: Bureau of Labor Statistics, Monthly Labor Review. September 2010. Self-Employment in the United States. Website: <http://www.bls.gov/opub/mlr/2010/09/art2full.pdf>

**Table 7-3: Self employment rates by selected characteristics**

Characteristic	Self-employment rates (# of self-employed as % of total workers in each group)		
	Total	Unincorporated self-employed	Incorporated self-employed
BY AGE			
Total, 16 years and older	10.9%	7.0	3.9
16 to 19 years	1.7%	1.6	.1
20 to 24 years	2.5%	2.1	.4
25 to 34 years	6.5%	4.6	1.9
35 to 44 years	10.9%	6.8	4.1
45 to 54 years	13.5%	8.2	5.3
55 to 64 years	16.2%	10.0	6.2
65 years and older	25.8%	18.1	7.7
BY Educational Attainment			
Total, 25 years and older	12.2%	7.8	4.4
Less than a high school diploma	11.9%	9.9	2.0
High school graduate, no college	11.8%	8.3	3.5
Some college, no degree	12.6%	8.1	4.5
Associate's degree	10.3%	6.6	3.7
Bachelor's degree	12.3%	6.8	5.5
Advanced degree	13.9%	7.3	6.6
Note: Self-employment rates are calculated by dividing the number of self-employed workers in a specified worker group by total employment in the same worker group.			
Source: Bureau of Labor Statistics, Monthly Labor Review, September 2010. Self-Employment in the United States. Website: <a href="http://www.bls.gov/opub/mlr/2010/09/art2full.pdf">http://www.bls.gov/opub/mlr/2010/09/art2full.pdf</a>			



## 8 | Manufacturing

A woman who works in marketing in the industrial automation industry shares a positive message about her industry. “Coming out of the recession, when other industries and manufacturers were still struggling, our sales increased well over 20% from 2009 to 2010. They continued to increase at a very high rate the next year, with 2011 sales another 15-20% over 2010. I’d like to think my efforts are part of the equation, (since the company never had a marketing department before I started working here in 2009), but a lot of it has to do with the fact that the industrial automation market is exploding now. Why? Because with the constantly evolving technologies, industrial automation products and solutions significantly save OEMs/manufacturers money with quicker, more reliable network communications, integrated product solutions that increase reliability, decrease install time, reduce cabling requirements, and more.”

A central story in the mosaic economy is the long-term change in the level of manufacturing employment and output along with the emerging signs of resilience in the manufacturing sector.

Early in the industrial revolution, first in Europe, and later in the U.S., agricultural productivity rose, and the number of people required in the agricultural sector decreased. Along with this opportunity, these countries began to industrialize,

with the population becoming more urbanized, organizations becoming larger and more complex, financial markets, distribution networks and retailing becoming more extensive, and education, research and technical development becoming a greater focus. Therefore, an expanded service sector emerged alongside the growing manufacturing sector. As the economy evolves and as productivity in manufacturing rises, employment in manufacturing begins to level off and decline as a share of total employment, while employment in the service sector continues to expand.

These shifts have stimulated worry about the long-run viability of national economies. Almost two centuries ago, when agricultural employment began to decrease and urban population began to rise, it was hard to imagine how an economy could survive in the long run with so few people producing food. Similarly, today it is hard to picture how an economy can survive in the long run with so few people making things or growing food, and with so many people in service-sector jobs. Manufacturing is an important anchor to the economy, as the leading source of exportable products and the leading source of technical innovation in the economy.<sup>14</sup>

As of 2010, only about 30% of the U.S. labor force worked in the “goods-producing” sectors, including manufacturing, agriculture, mining, forestry and construction, and 70% worked in the service sector. Manufacturing sector employment was 9% of total employment, far below the 27% share seen during the 1920s, when manufacturing employment was at a peak, or the 20-27% share seen during most of the 1960s.



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<sup>14</sup> According to the U.S. Treasury Department, while manufacturing accounts of 9% of total employment, it accounts for 11% of the value of total national output, 60% of exports and 69% of private research and development spending. Cited in [http://www.manufacturing.gov/mfg\\_in\\_context.html](http://www.manufacturing.gov/mfg_in_context.html)

But perhaps these patterns are more organic and natural than we imagine. Not only in the United States, but also in countries around the world, long-term economic growth seems to follow an evolutionary pattern from a primarily agricultural economy to an industrial and service-sector economy.

As economic analysts, technology researchers, investors and policy makers around the nation and the world pay more and more attention to the importance of the manufacturing sector and the future of the manufacturing sector, it is becoming clear that there is a synergy between manufacturing and service sector economic activity in which both sectors grow together and one does not replace the other.

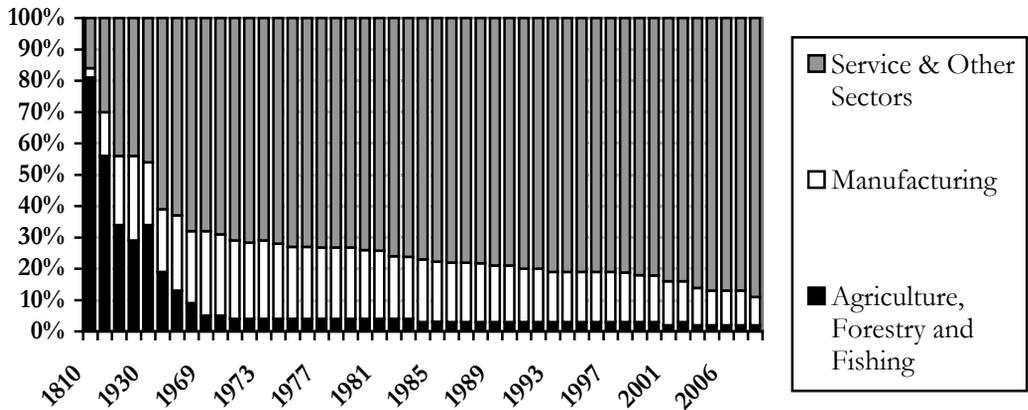
These patterns are echoed among countries all over the world that have more recently industrialized. For example, Figure 8-1 and Figure 8-2, below, show the very similar evolution of manufacturing and service sector employment in the United States and Korea.

Figure 8-1 shows historical data for the United States, including sample years from 1810, 1860, 1910, 1920, 1940, 1940, 1950 and 1960, and 1969-2007. The historical data shows that in 1810, the United States was primarily an agricultural economy. Then, as industrialization began, there was a rise in both manufacturing and service sector employment. This was followed by an eventual leveling off and decline in manufacturing and continuing rise in service sector employment.

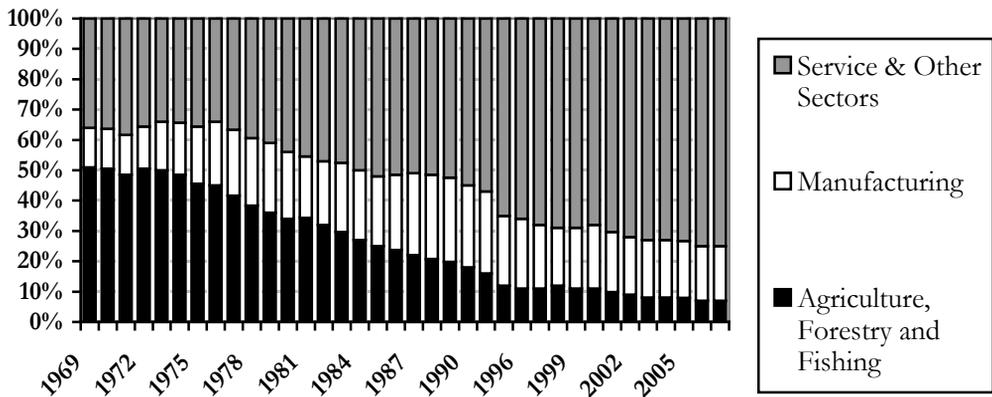
Figure 8-2 shows similar patterns in Korea, though in more recent years. In 1969, agricultural employment was 51% of total employment, manufacturing employment was only 13% of total employment and service sector employment was only 36% of the total. During the 1970s and 1980s, as Korea became more industrialized, both manufacturing and service sector employment rose. In the early 1990s, service sector employment continued to rise, as the share of manufacturing employment leveled off and began to decrease. Service sector employment continued to increase, and is now at 75% of total employment.

Other countries have followed the same patterns, showing that as a country begins to industrialize, manufacturing and service sector employment rise simultaneously at first, and then manufacturing employment levels off or declines as a share of total employment as service employment continues to rise.

**Figure 8-1:  
United States: Employment by Sector by Year, 1810-2007**



**Figure 8-2:  
Korea: Employment by Sector by Year, 1969 – 2007**



Source: United Nations – UN Data Website at [un.data.org](http://un.data.org). Data from LABORSTA, International Labour Office database operated by the ILO Department of Statistics.

These shifting employment patterns may be very organic, the natural outcome of rising productivity and the natural result of the service sector employment generated as a direct and indirect result of manufacturing productivity.

The National Institute on Standards and Technology cites analysis by the U.S. Economics and Statistics Administration<sup>15</sup> estimating that in 2011, the 11.8 million manufacturing sector jobs in the United States directly supported an additional 7 million jobs in other sectors of the economy.<sup>16</sup>

However, while the manufacturing sector and agricultural sectors continue to be key anchors for the U.S. economy, it remains unknown whether there is a baseline level of manufacturing and agricultural employment and production necessary to support economic growth.

While many of these answers are still unknown, there are emerging conversations about a new, smaller but resilient manufacturing sector. For the first time in many years, the Bureau of Labor Statistics projections predict a slight rise in employment of production workers and stronger rise in occupations such as industrial mechanics, machinists, engineers and research and development professionals.

This resilience in U.S. manufacturing rests on both purely economic advantages and values-related advantages. Economic advantages include access to technology

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<sup>15</sup> Economics and Statistics Administration, The Benefits of Manufacturing Jobs, May 2012, cited in “U.S. Manufacturing in Context.” Cited in [http://www.manufacturing.gov/mfg\\_in\\_context.html](http://www.manufacturing.gov/mfg_in_context.html).

<sup>16</sup> The estimated 7 million non-manufacturing jobs directly supported by manufacturing does not include the many other jobs in the local service sector that are indirectly supported by manufacturing employment – as money cycles through the local economy creating demand for teachers, doctors, landscapers, hair stylists and other service sector workers.

and equipment, access to research and development work, proximity to markets and distribution channels as well as proximity to decision-making networks. Values-related advantages include the preferences among consumers and organizational buyers for to buy products that reflect environmentally-friendly production, fair labor practices and job creation.

The National Institute for Standards and Technology offers this synopsis of the rebound in of manufacturing:

But U.S. manufacturing has begun to rebound from the “great recession”. Since December 2009, manufacturers have increased their payrolls by almost 500,000 workers. In the first four months of 2012 alone, the U.S. manufacturing sector added 139,000 jobs.

Some of these jobs were the result of onshoring—the return of positions and operations that had been transplanted to lower-wage nations. Shifting global conditions and promising technologies could add momentum to these nascent trends, leading to a healthy resurgence in U.S. manufacturing output and to new employment opportunities across the economy.

In fact, several economic and technological trends are converging to create new opportunities for U.S. manufacturing. Increasing U.S. manufacturing productivity, rising labor costs in developing economies, prospective market-disrupting product and process technologies, growing production of domestic natural gas, and the desire to protect home-grown intellectual property are shifting the comparative advantages of global competitors. The shifts, many predict, will favor the U.S. manufacturing sectors, especially industries that produce high-value-added goods.<sup>17</sup>

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<sup>17</sup> From the National Institute of Standards of Technology, “Manufacturing in Context” at [http://www.manufacturing.gov/mfg\\_in\\_context.html](http://www.manufacturing.gov/mfg_in_context.html)

Many leaders in manufacturing and related fields echo these views.

An online provider of U.S.-manufactured organic and sustainable fabrics and sewing supplies writes that:

“We believe that when given the opportunity people will make choices that benefit both themselves and the environment. ...We endeavor to make those choices easier and more enjoyable by carefully selecting sustainable fabrics and notions that are as delightful to work with as they are beneficial to people and the planet. ... [Our] principals have learned about green business - often the hard way. Watching North and South Carolina's textile industries essentially shut down as growth and production was outsourced, we've grown to treasure what little remains; the relationships with American farmers, mills, finishers, and manufacturers that we've nourished over these years are integral to our business.”<sup>18</sup>

Green Manufacturer magazine,<sup>19</sup> published by the Fabricators and Manufacturers Association International, uses social media to share almost-daily announcements of good news about environmentally-friendly manufacturing, for example, citing successes in energy conservation technology and citing polls showing that consumers care about eco-friendly products, and showing increasing enrollments in trade schools, fueled by growing demand for skilled workers in manufacturing sector jobs.

What jobs are found in the manufacturing sector today?

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<sup>18</sup> NearSea Naturals, <http://neaseanaturals.com>

<sup>19</sup> Green Manufacturer, <http://www.greenmanufacturer.net>  
(<http://facebook.com/#!/greenmanufacturer>)

The jobs that are directly created within manufacturing include not only production workers – who represent 51% of current employment in the manufacturing sector -- but also mechanics, technicians, engineers, scientific research and development, industrial designers, quality control managers, sales representatives, shipping and warehouse workers, and other occupations. The jobs that are indirectly created and supported by manufacturing work are just as diverse. Some of the work of supporting manufacturing is staffed internally within the manufacturing company; other functions may be provided by outside firms, including research and development firms, engineering firms, marketing firms, distributors, computer software providers, employment staffing firms and others, making up the estimated 7 million non-manufacturing sector jobs directly supported by manufacturing.

A mechanical engineer writes, “I am a mechanical engineer working at a company that builds medical devices that tests blood. I work in a team of electrical and software engineers to build test equipment to test parts of the medical device. I brainstorm, design, research and have parts built to create fixtures capable of housing all the components needed and function correctly. My favorite part is building up the test fixtures once I get all my parts made. I also really like using the 3D modeling program to design my parts. It allows you to be creative, and I am constantly learning new things.”

An electrical engineering technician writes that “following an engineers’ instructions, I build new electronic circuits or equipment and test them.” When asked about the outlook for jobs in the future, he responds, “Any electronics specialties in the medical industry will be in strong demand. This includes equipment for diagnoses of illnesses as well as equipment for people with handicaps. Especially prosthetics. More and more is known how the nervous system works. People who are paralyzed may be able to use their limbs again.”

A surgical products salesperson writes that he manages sales for a three-state area for one of the world’s largest medical supply companies. He explains that three

areas of focus are pharmaceutical sales, disposable medical supplies and capital equipment, including various machines and equipment. When asked about future outlook, he responds that robotics, less invasive technologies, genetic and tissue engineering and expanded use of computers and software are examples of areas that will be increasingly important in the medical supply industry.

A partner in a marketing firm that serves many manufacturing businesses writes that she is continually investing in self-education, reading about different industries through industry journals and materials from clients. She says that with clients in science, manufacturing and technology-oriented businesses, she is always reading to learn about the work their clients do and becoming an expert so that she can help clients to communicate that work through videos, press releases, journal articles and other marketing and public relations.

A process analyst in the paper industry writes that he is responsible for “integration and communication of information related to quality, productivity, and yield improvement needs throughout all aspects of paper manufacturing.” When asked about outlook and jobs, he responds that “any person who can take data, transform to knowledge, and make a business wiser in its decisions will have value. So not only will software and computer technology be important but also how these technologies are leveraged.”

Throughout the country, many manufacturers are showing resilience in holding fast to local production facilities and in adapting to the demand for newer environmentally friendly production techniques and products. Robotics, 3D fabrication technology and other innovations are reducing production costs and made it possible for U.S. producers to compete on both price and quality. Many manufacturers are discovering niche markets in which U.S. manufactured products have an advantage. Many are holding onto market share or gaining market share in markets that have been dominated by imported products.

While the number of people employed in manufacturing is smaller than in was in the past, a resilient manufacturing sector provides an anchor for future production work, maintains knowledge, distribution channels and markets, and provides stimulus for other economic activity.

The revival of all types of artisanal, manufacturing and production work builds a foundation for other types of jobs and economic development. Jobs in wholesaling, marketing, shipping and distribution flow from locally-based production of products. Jobs in retailing, restaurants, hotels and other areas of hospitality and tourism are created and expanded whenever manufacturing and artisanal work expands. Jobs in recycling are complemented by jobs in the creation of goods made from recycled materials. Vocational-technical schools, art schools, college-level art departments and adult education programs are expanding courses and added studios focused on metalworking, woodworking, fabric arts, industrial design, machine work and other manufacturing, design and craft areas. Technology development complements the development of new online networks of producers and buyers, online magazines and online forums, creating further growth in technology sector employment and innovation.



## 9 | An Artisanal Economy

**D**uring the late 1800s and through the turn of the last century, the Arts and Crafts movement in Europe and America was a celebration of traditional crafts, a reaction to the expansion of industrialization and mass production. Furniture, housewares, textiles, jewelry, wallpapers, printing, bookbindings and buildings were designed and produced to be simpler and more rustic; beautiful to have and more humanizing to produce. The Arts and Crafts movement had several different aspects. The core was a movement of professional artists and craftsmen who collaborated to enrich their craft with traditional design principles, more-humanized production methods and individual artistry. The movement grew from concern about the de-humanizing effect of modern industry, with leaders like English socialist William Morris seeking ways to improve the lives of workers, while also preserving the past and elevating practical arts. Morris and others founded workshops, which were small factories that brought together diverse types of artists and craftsmen. Some emphasized handcrafted work while others used machinery in ways that sought to preserve a creative role for workers and designers.

Another aspect of the Arts and Crafts movement was the movement toward philanthropic crafts, in which leaders established classes and workshops for local people in impoverished communities, providing employment and skills while reviving local craft traditions. In Ireland, the revival of lace-making in the late 1800s was part of this philanthropic movement. A related movement was a movement toward celebrating national identity, often called Romantic Nationalism, in which countries that were striving for independence celebrated national crafts and heritage.

Another aspect was the popularization of crafts as personal hobbies, in which non-professionals learned traditional crafts, mostly for their own pleasure, but also sometimes selling goods in craft markets. Professional artists, at first concerned about competition from hobbyists, soon learned to see non-professional crafters as a market for materials, classes and books.

There was lively debate about approaches among adherents of the Arts and Crafts movement. A concern was that handcrafted products were expensive, and out of reach for many people. A related concern was that sometimes, despite the good intentions of the socialist-inspired movement, some saw the Arts and Crafts movement as elitist, celebrating the “gentry values” of the English countryside over modernism and industrialism. In response to these concerns, eventually the idea of “democratic design” took root, and more-efficient multiple production made beautifully designed products affordable and available to more people while still avoiding the pitfalls of mass production. Today, the history of the Arts and Crafts movement is valued for its respect for traditional craftsmanship, simplicity of design, enthusiasm for beautiful decorative arts and strong creative relationships with nature and with a simpler past.

The history of the Arts and Crafts movement provides an excellent frame for viewing the rise of a new artisanal economy in this century.

Today, a revival of traditional craftwork, traditional production and manufacturing and newer environmentally-friendly production has transformed the

worlds of art, design, craft, manufacturing, consumer products, environment and community development.

An artisanal economy focuses entrepreneurial efforts toward all kinds of production, from simple to advanced, from do-it-yourself to large-scale manufacturers, with the common theme of capitalizing on knowledge, old and new.

Boat builders create beautiful wooden boats, blending old designs and new materials and technology. Craft markets and galleries are part of the revival of downtown areas. Entrepreneurial new businesses spring up in communities across the country to support sewing, knitting, jewelry making, woodworking and other crafts for do-it-yourselfers. Online marketplaces spring up for the buying and selling of hand-made items. Local restaurants, stores and farmer's markets boast of artisanal food products, from cheese to bread to beer, produced locally using traditional techniques. While the number of people employed or self-employed in this artisanal work is small, this work has a much larger impact, as it preserves knowledge, establishes markets and creates positive ripples throughout the economy.

The artisanal movement has a social and community building aspect, as well. International development work promotes local crafts, providing employment and business start-up opportunities for men and women in economically underdeveloped communities. In this country, many projects focused on woodworking, furniture-making, jewelry-making and other arts provide employment and training for long-term unemployed workers. Environmental and social justice themes intermix with artisanal themes, with many new and traditional products designed to be environmentally-friendly and to support fair trade and fair employment.

Unlike the nineteenth century Arts and Crafts movement, the current artisanal economy is reacting not to over-industrialization, but to the de-industrialization of countries like the United States.

One of the strengths of a healthy market economy is that there is a natural motivation for individuals and organizations to preserve and re-use existing

technologies. In a market economy, knowledge is a valuable asset. Therefore, wherever knowledge is readily available and not being used effectively, it is likely that individuals, businesses and organizations will begin to use, expand and profit from that knowledge. So each generation naturally tends to re-claim almost-lost production and craft techniques and to hold onto knowledge and expand on it in order to meet the shifting demands of the current economy.

Therefore the revival of artisanal and production work also builds a foundation for future growth by preserving skills, developing new production techniques and establishing markets for products.

Locally-produced, environmentally-friendly and U.S.-produced goods are attractive to consumers who want the money they spend to reflect their values. Many people simply feel good about buying things that affirm their values. Many people sense that it is actually economically advantageous to spend money on locally-made goods, creating local employment and a healthy flow of money through the local economy, compared to the alternative of having an unhealthy local economy and having to help bear the costs of local unemployment and community decline.

What will happen over the next few decades in manufacturing, production and artisan work? How will shifts in national and international financial markets affect these markets? How will environmental and energy issues affect these markets? Will economic, environmental and energy challenges push consumers toward buying more U.S.-made and locally-made products?

While these answers are unknown, it is clear that the current healthy markets for artisanal and production work are both important in community development and economic stimulus now and are also extremely important as foundations for future growth.

## 10 | Creating Health and Wellness

All kinds of organizations, such as grocery stores, fitness centers, youth sports programs, food banks, community gardening programs, schools and healthcare organizations, value employees who can guide customers and develop marketing and educational materials to promote health and wellness.

Many health-related occupations are among the fastest growing occupations and among the occupations providing the largest number of new jobs. These occupations include newly emerging occupations such as community health educator and biomedical engineer and occupations that have long been part of the labor force, such as nurses, home health aides, dental hygienists, physical therapists, physical therapy aides and many other medical occupations.

The themes of health and wellness are important across many different sectors of the economy. Many businesses, organizations and career paths are focused on ways of promoting and preserving personal and community health. From renewed attention on healthy eating to programs for exercise and relaxation to holistic approaches to healthcare and prevention, people are more interested than ever in ways of promoting health.

In the First Steps career development survey that I conducted with high school students, an open-ended question asked students to list career areas that they might be interested in. Healthcare careers were the most frequently-mentioned category of jobs, with students responding with interests in nursing, nutrition, oncology, cardiology, occupational therapy, pediatrics, physical therapy, pharmacy, surgical technology and surgical nursing, dental assisting and many other options.

Health careers are attractive because these careers are in high demand, offer good salaries, and offer an opportunity to fulfill personal career values, including helping others, working in a close-knit team, working with technology, working with practical applications of science, making a major difference in people's lives. The wide variety of health careers offer opportunities that are accessible through short-term training, two-year degrees, four-year degrees or advanced training and education, with opportunities to advance with additional education and experience.

The growth in healthcare opportunities flows from several factors: from advances in technology plus a long-term increase in standards of living and incomes plus an increased life expectancy plus general population growth.

While teaching economics, I have often used the growth in healthcare opportunities as an illustration of the economic concepts of supply and demand. As a rule, when new technology improves the "supply" of a product or service, the product or service becomes more available and more affordable and the quantity demanded will increase.

Drawing an example from history, before the industrial revolution, most people owned very few items of clothing, because fabric and clothing were so expensive. When the industrial revolution made production more efficient, prices fell, and people can now buy clothing easily and frequently, typically having closets full of clothing. Home entertainment provides another example. A few generations ago, a family might own a piano or guitar or violin or other musical instrument for musical entertainment. Over time, record players, radios, televisions, smaller portable radios,

tape players, CD players, and digital music devices became available. Today, a household might have several musical instruments, including inexpensively manufactured guitars and keyboards, plus a wide variety of electronic entertainment options. Not only the quantity but also the variety has increased.

Similarly, we have more food, more furniture, more household appliances, more children's toys and more of many other products than previous generations.

The same pattern holds for services such as healthcare. As health-related technology has increased, we have far more healthcare options and services than previous generations.

A second economic concept is the idea of "elasticity of demand." When an item becomes more affordable, the quantity demanded increases, but the amount of the increase varies depending on the type of item. For example, demand for food is fairly "inelastic." People today consume more food than people of previous generations did, but the increase in food consumption is limited by the amount of food that can be (or should be) consumed in a day. Because demand for food is relatively "inelastic" it turns out that total spending on food, total land use and total employment in farming and food production has declined as production became more efficient.

Demand for manufactured products such as clothing, household appliances and other products has been somewhat more elastic, with a more visible increase in the quantity of manufactured items – clothes, furniture, appliances, toys, etc. -- owned today compared to previous generations.

Demand for services such as healthcare has been even more elastic than demand for new manufactured products. As medical technology has made new health-related products and services available and relatively affordable, society has responded by using a greater quantity of healthcare and by devoting a larger share of spending to healthcare.

Healthcare is different from food or manufactured products because it is hard to measure the “quantity” of healthcare the way one might measure the quantity of food or appliances or clothing produced and sold. Yet there are very visible signs of increased healthcare usage, with more options for preventing, diagnosing and treating illnesses and injuries, with more access to knowledge about nutrition and well-being, and with very positive impact on life expectancy and quality of life.

These trends have translated into an array of good career opportunities. Total employment in healthcare has increased in the past several decades and is projected to continue to increase. A variety of specialized fields have become increasingly important. New technology has increased opportunities in technical fields, such as diagnostic sonography, ultrasound, audiology and other fields. An aging population, which is a positive outcome of increased life expectancy, has increased need for occupations focused on eldercare such as home health nursing or assisted living program managers. Increased opportunities for treating injuries and addressing physical disabilities have increased demand for physical therapists and occupational therapists.

The story of expanded healthcare services and opportunities is only partly complete, however. Healthcare spending has become a politically important and controversial topic in recent years. Healthcare spending now makes up a large part of private and public spending and has reached a critical point at which it can potentially crowd out other spending. But because healthcare is generally paid for by private and public insurance programs, decision-making about healthcare spending is a shared process, subject to political and social decision-making. An interplay of public and private decision-making is likely to shape and reshape healthcare usage and healthcare career opportunities in the coming years.

Meanwhile, entrepreneurial energy in the private, nonprofit and public sectors is shaping career opportunities in healthcare. Trends include growing emphasis on prevention, education and communication, with an overall emphasis on managing

costs while not sacrificing health and wellness. Advanced medical research continues to produce new approaches and new technologies for diagnosing, treating and preventing medical issues. Technology is being used to support patient communications, patient information, diagnosis and treatment. Health and wellness themes are being promoted in a variety of settings beyond typical healthcare settings. Traditional and alternative medicine is being revitalized.

A medical practice introduces new ways of communicating with patients, including a website for secure email between patients and doctors, a 24-hour telephone ask-a-nurse service and a new database that tracks patient information, such as test results and medications prescribed, and sharing information with patients.

A software firm creates a website building package for chiropractic offices, providing the technical structure for a website, members-only pages, and email, along with professionally-written articles and features about chiropractic care and other health and wellness issues.

A hospital clinic has a robotic walker that provides therapy for people who cannot walk because of disability or injury. A therapist helps the person to get into the walker and robotic sensors sense the person's gait, helping them to learn or re-learn to move their legs in a natural manner.

A university research center maps genetic sequences from cells, producing a computer database that is explored by quantitative biologists who are looking for clues about genetic components of cancer, diabetes, heart disease, autism and many other conditions.

A nonprofit organization reaches out in less-advantaged communities with health education programs to address issues of health and nutrition. Health educators offer workshops and one-on-one conversation about health topics at health clinics, schools, churches and other community settings.

A middle school integrates a new school garden into health, consumer science, home economics or cooking classes, inspiring good conversations and lessons about nutrition, cooking and food choices.

A health and fitness club adds a physical therapy clinic, offering physical therapy in the club setting and encouraging patients to sign up for suitable exercise and fitness classes once their therapy is completed. Patients are referred via their regular healthcare providers and pay with their insurance, and so the clinic functions just like any other physical therapy clinic, but with the appeal of the health club setting.

A grocery store publishes a newsletter featuring articles about nutrition and health, highlighting healthy recipes and providing seasonal tips about a variety of general health topics such as winter weather, seasonal mood swings, summer sun exposure, sport safety and more.



As in other areas of the mosaic economy, traditional and almost-forgotten approaches are being revitalized and integrated into formal and informal healthcare settings. In an entrepreneurial economy, it is natural that potentially valuable, freely available traditional knowledge and approaches will be reclaimed and reused. For example, over the past few decades, midwifery, once almost forgotten, has become an important medical specialty. Or, for example, in the spirit of the community networks of past generations, health educators and community outreach programs play increasing roles in providing person-to-person communication about issues such as asthma, diabetes, heart health, nutrition, parenting and many other topics. And, for example, Eastern approaches to wellness, such as yoga, meditation, vegetarian diets and natural healing have become widely popular. Physicians are increasingly likely to encourage patients to explore all aspects of their health,

including nutrition, exercise, yoga, meditation or other approaches. Hospitals and health centers often offer workshops on multiple health education topics, including parenting, exercise, yoga, meditation and more.

All of these approaches to health and wellness create career and entrepreneurial opportunities. Over the next few decades, the focus of health and wellness work will continue to shift, but will likely remain a major value within the economy, with jobs in healthcare occupations, technology, communication and media, food and nutrition, exercise and fitness, medical research and more all combining to satisfy public desire and demand for good health.



## 11 | Building Community

Community is a strong value in American history and culture. In the entrepreneurial mosaic economy, many initiatives, including public, private, and nonprofit; formal and informal; paid and volunteer, seek to create and re-create community connectedness.

A community garden organizer in West Virginia describes how the church-based community garden and soup kitchen provides meals to community members through donations by local citizens and businesses. She writes that the soup kitchen, now in its 33rd year of operation, serves breakfast and lunch seven days a week to all who enter its doors—no questions asked. The organizer describes a recent event, a “String Bean” fundraiser held at the local farmers’ market. She explains that the idea came to her when she looked at old family photo albums and journals and read some of her great-great-great grandparents’ history. She writes, “Some of the local 19th century communities made bean stringing, apple butter and sorghum production a community event...complete with country music bands.” Inspired by what she read, she organized the event, at which volunteers and market vendors donated and prepared many bushels of string beans for freezing for the winter.

As people look back at the communities where their grandparents, great-grandparents and great-great-grandparents lived, they learn about different ways that people experienced community connections. In small towns and villages in the United States and around the world, community life may have centered on market days, shared farm work, and community fairs; on community institutions like schools, churches and temples; or on informal gathering places such as stores, streets, and parks where people tended to meet and talk. In industrialized towns and cities, community life may have formed around community institutions, workplaces, cultural and community centers, and various other formal and informal gathering places in the city or town. In the later part of the nineteenth century, settlement houses, immigrant cultural centers, literary magazines, and other worker-focused organizations began to appear to help to nurture community connectedness in an era of urbanization and industrialization.

Whether rural or urban, community connections sometimes form spontaneously, through the natural associations of daily life, and sometimes form deliberately, through small networks of people or through wider community sponsorship of events and organizations.

A man who emigrated from China to New York City as a young child with his family in the 1960s describes the two small rooms they lived in behind his family-run laundry in the South Bronx. He then describes a communal apartment in Chinatown where they went on Sundays for hot showers and a Sunday meal. The apartment was shared by several families, serving as a communal resource, not only for the kitchen and hot showers, but also a place to stay for anyone who was newly arrived, or out of work, or otherwise in need of a temporary room.

The director of a settlement house in the South End of Boston describes the culture of settlement houses that arose in Chicago, Boston, and other cities during the 1800s, providing practical resources for a growing urban population and supporting personal enrichment and community education with lectures, arts

programs, and other community connections. His settlement house now offers adult education classes, summer day camp for children, and other community programming in the spirit of the original settlement house movement.

In the mosaic economy, formal and informal community building is an important value for workers and consumers and is a natural result of jobs as varied as a bookstore manager, children's librarian, parks administrator, or restaurant or retail manager. Community connections may form around author events at a local bookstore. Connections may form around children's story hour at the local library or concerts in the local park. Connections may form around the people who drink coffee at the same place each morning or who frequent the local hardware store.

The owner of a bicycle shop participates in a variety of community initiatives for expanding and improving bike paths, for supporting "buy local" campaigns, and for annual bike safety presentations and activities at local community events. This community building is a natural part of the shop's marketing strategy, building a market for bicycles and bicycle accessories and integrating the shop into the overall fabric of the community.

The assistant manager at a local hockey rink talks about the people he works with each season, as he coordinates the use of the rink by various youth and adult hockey leagues. One of his favorite aspects of the job is seeing the parents, coaches, and players who form an informal community around the rink and the teams they play in.

At a meeting of park volunteers, a police officer who leads the community policing work for his district speaks in praise of a new restaurant that opened in a low income neighborhood near the park. With a smile, he describes the delicious meals available for well under ten dollars, and then continues to make his point about the ways that this new business is turning out to be a benefit to the community by providing a comfortable gathering place, a meeting space for community groups,

and, in general, a positive presence in a neighborhood that has seen a lot of disinvestment.

One of the strengths of a the mosaic economy is the way that private sector, non-profit sector, and public sector organizations can interact to respond to the needs and wants of the market, to provide goods and services, and to create opportunities for work that fulfills people's career values. Work that helps to create community connectedness can be found in the private sector—coffee shops, fitness centers, sewing and craft businesses, bookstores or myriad other businesses; in the public sector—schools, libraries, city and town agencies, or parks departments; and in the nonprofit sector—cultural organizations, religious organizations, community development programs, or youth programs; as well as through individual and informal neighborhood efforts. Consumer demand for “community” has a multiplier effect, creating numerous job opportunities.

Community garden organizing provides an example of deliberate community building that echoes the natural connections that occurred in years past. Community gardening may be supported by full-time or part-time community garden program staff, by staff from city or state parks departments, by state agricultural extension services, or by staff from local schools, religious organizations, community development centers, or other institutions. Volunteer and paid roles are blended together, as in many community organizations, and careers are often built as individuals move from volunteer to part-time and full-time paid roles.

A neighborhood leader from the Quesada Gardens Initiative in San Francisco tells how an informal gardening project expanded to other projects in the Bayview Hunters Point neighborhood over the course of a decade, explaining that “neighborhood residents started planting flowers and vegetables here and there around the block. Other residents jumped in to help them, and, since then, the garden and related projects have accumulated 30,000 volunteer hours. People have come together to create art, share history, organize block events, and commit to

working together to strengthen the community where they live. After nine years, there are nearly forty individual projects, each with resident project leaders and social groups surrounding them. Projects include public art like murals, art benches, art glass garden signs, all done with allies from the neighborhood; regular newsletters about positive community building activity in the neighborhood; public gathering spaces, including food and floral gardens, all clustered in the heart of the neighborhood; and backyard food-producing gardens designed to create spaces where family and neighbors can come together.”<sup>20</sup>

A woman active in freelance work related to parks, gardening, and the environment is hired by client organizations to write grants for garden and park projects, put together events with volunteers, participate as a member of various local boards, and organize corporate volunteer projects. When asked about career opportunities that people interested in this type of work should know about, she explains that volunteer work in the environmental field is a great way to get a job, noting that many successful people have started in the field as volunteers because they love the work and eventually move to paid positions. She adds that technology will play a role as this field expands, noting that urban gardening and other community environmental initiatives are taking advantage of social networking to build interest in projects that help the environment and the community. She also notes that most corporations have a department to look after their environmental footprint, offering a variety of career and entrepreneurial opportunities.

Other examples of careers connected to community building are found in the fields of architecture, interior design, urban planning, and related planning and design fields. Professionals in each of these fields work to create public spaces that will bring people together. Designers of new retail developments, commercial office

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<sup>20</sup> See the Quesada Gardens website at <http://www.quesadagardens.org/>

space, hotels, housing developments, and mixed use developments increasingly seek to create spaces that will enhance the sense of community.

Corporate community relations work offers another avenue for careers with a community-building theme. A man who works as a community relations representative for a gas and electric company describes his job, writing that he interacts with the local community, acts as a liaison to business and residential customers, and helps to foster economic development.

Community building goes beyond local communities, through social media and other networks. Technology can bring people together for common purposes. For example, online classes may have opportunities to interact through message boards. Online craft, woodworking, and sewing communities allow people to communicate about projects and display work online. Charitable foundations provide online profiles and videos of projects. Some provide crowdsourcing for donations, inviting donors and others to vote online to designate funds to specific projects. Online networks are emerging to promote fair trade and human rights for workers, creating stronger global communities.

Over the coming years, approaches to community building will evolve and change, continuing to offer creative opportunities for careers and entrepreneurship.

## 12 | Creating Personal Living Environments

A pastor at a small urban church has worked with many homeless and formerly homeless individuals, developing a specialty in helping them navigate the steps to obtain housing and rebuild their lives. The best wisdom in homelessness programs currently is “housing first,” a strategy of helping homeless individuals to get into housing and then, from that safe base, to continue with steps of community support, counseling, medical attention, job training and employment. “Housing first” is both compassionate and cost effective, saving public money in medical costs and emergency services and saving homeless people from the continued physical and emotional toll of homelessness. But this pastor and others in his church community go one step further with the idea of “relationships first,” believing that individuals who have been homeless need to be welcomed into a larger community, build relationships with people, and when they are able to obtain housing, to have a community who will celebrate that moment with gifts of spare furniture, pots and pans and wishes for success.

One of the themes of the mosaic economy is the work that goes into designing, building, maintaining and personalizing living and working spaces. Building and designing affordable housing and mixed-income developments. Creating housing

complexes for seniors. Creating assisted living programs. Exploring environmentally-friendly “green” building for workplaces and homes. New attention to making the most of smaller living spaces. New housing and commercial construction near public transportation. All of these trends provide positive spin-offs in employment in construction trades, interior design, building materials, environmental engineering, retailing, landscaping and other fields.

The theme of “personal environments” spans many different sectors of the economy. Much of the work of “green” research and development is focused on living and working spaces. Many health and human service occupations are focused on housing and various types of supported living environments. Many careers in retailing are focused on products for homes, yards and office environments. Construction, landscaping and design work often focuses on our living and working environments as well as the community environments in which we live.



A retail salesperson who recently started working at a national retail store that sells containers and shelving describes what she likes about her job. She says that customers who come into the store are really eager to get organized and the staff are eager to help them. She describes a “nesting instinct” – people like to spend time organizing their homes – and she enjoys that energy.

A self-employed contractor/mason describes his work, saying, “I design, build, fix almost everything. I treat this profession as a creative art expression. I love working with my hands.”

An architect describes his work providing design services for residential and commercial owners. He was attracted to the field because he was always interested in how buildings affect people. Describing related career opportunities in the field, he

mentions designers, draftsmen, construction inspectors, and town boards for historic preservation.

An HVAC contractor describes opportunities in his field, writing, “There are more jobs than people to fill them! HVAC system design, drafting, sales, parts and supplies specialist, installation and diagnosis, sales & service of replacement units for home and commercial use, estimator, project manager, energy conservation and more.”

## **Perspectives on the Building Trades**

A professional association of black electricians worked with a local community college to develop a mentoring program for apprentices. I was involved in the project and helped to write a mentoring guide for the program, and in the process, enjoyed good conversations about the challenges and benefits of working in the building trades.

They explained that on a major building project, the work of many different trades must be coordinated in order to complete the project. Ironworkers build the frame for the building. Before walls are constructed, electricians and plumbers lay out the electrical, heating and plumbing systems for the building. The work is continued by HVAC installers, carpenters, elevator installers, tile workers, masons, carpet installers, painters and other tradespeople. Planning and coordination are provided by a general contractor, with consultation with the architects and engineers. The project must be coordinated with local authorities, including city planning, zoning, building inspectors and the local water and sewer and public works departments.

Construction work is very interdependent. Workers don't work in isolation. The quality of your work, your personal safety, and the training you receive on the job all depend on the work of others. Because of this interdependence, and because most construction trades are taught through apprenticeship, there is a strong tradition of informal mentoring in the trades. Successful workers look for mentors who can help them as they get started.

Construction work is also, of course, highly skilled. The building trades require a high level of skills and knowledge, which are developed through a combination of on-the-job and classroom training. Apprentices work with journey-level workers to learn the trade.

Apprentices start with less-skilled tasks and eventually take on more highly skilled work. In addition to skills specific to each of the construction trades, each of the trades requires skills in teamwork, problem solving, workplace safety, communication and project management. Workers must be skilled in blueprint reading and must have knowledge of basic principles of building. A good background in math, science and reading is essential. The work is physically demanding, and includes lifting, using hand tools and power tools, and may include working outdoors and working in extreme weather. Successful tradespeople develop skills and strategies for safely lifting and carrying heavy loads and pay attention to all aspects of fitness, including maintaining strength, flexibility, balance and body awareness.

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## 13 | Exploring Science and Technology

A few years ago, at an expo about environmentally-friendly home design, I was absorbed by speakers who addressed theory of environmental change, while my teen-aged daughter, always more practical than me, was captivated by information about geo-thermal water heaters and low-flow toilets. “This is great,” she exclaimed, looking at a display. “I can see exactly how this works.”

Many of the areas of strength in the mosaic economy are the direct or indirect result of work in science and technology. For example, much of the new resilience in the manufacturing sector in the United States springs from advances in science, technology and engineering. New approaches make manufacturing more environmentally-sound, with major cost and marketing advantages for the company. New approaches increase production, with robotics and other computer-driven processes making work more precise and efficient. New materials are more environmentally friendly, recyclable, sustainable, and therefore more cost-efficient in the long run and more desirable to consumers.

A woman who works at a small manufacturing business describes the growing need for engineers. “Thanks to this shift to automated technology, there is a HUGE

need for engineers. I read articles all the time related to the need for young people with engineering backgrounds and education. The forums and websites I visit each day often display articles and posts speaking to the problem that most engineers are nearing retirement age, and there is a shortage of engineering professionals. In an attempt to pull the younger generation into this field, there are many programs in middle and high school that are aimed to introduce students and get them excited with engineering, including FIRST Robotics & FIRST LEGO competitions. People in my company, as well as one of the publishers we advertise through, sponsor robotics teams and work with the students each season. Pretty cool stuff.”

In the Career Outlook interviews that I have gathered, one of the questions is “What new technology is likely to be important in your career field in the next ten or twenty years?” Recognizing that specific predictions about technology quickly become outdated, it has nevertheless been fascinating to browse answers to these questions, seeing the variety of technologies that are re-shaping career fields. People from a variety of careers mention cloud computing, new devices such as tablets and smart phones, a variety of database and social media applications, as well as very specific healthcare, education, engineering, construction and design technologies.

A special education teacher aide answers “Equipment to help with physical therapy for people with disabilities or injuries, such as a robotic walker that helps people with disabilities or injuries learn to walk. Also equipment to help with speech.”

A home health nurse writes that “One example is computerized heart monitors that can be used at home. Results are read over an online connection by medical staff.”

A high school mathematics teachers answers “The calculator is always evolving, and has more applications every time I plan a new lesson. Also Smart Boards are an amazing piece of technology that continues to improve.”

An HVAC technician writes that “More and more HVAC systems will be integrated with computers. Particularly with the new types of systems, the technician will need a laptop computer to plug into the system to diagnose and repair equipment.”

An Architect/Designer predicts growth in “materials and methods in building technology and construction will mimic biology.”

A civil engineer writes that “There will be improved integration of design tools (water, storm and sewer) with drafting programs, more accurate GPS equipment for surveying, more towns incorporating GIS (Geographic Information System) technology.”

A marketing director for an apparel maker lists “garment /fabric online testing; computer color approval systems; CAD design and spec systems; and online garment fitting technology.”

An art investment and appraisal specialist answers, “Shared databases with museums and libraries allowing larger information database searches of deceased artists or international exhibition history.”

The director of a nonprofit organization answers “Nonprofit management is a "people" skills field, so technology that helps people connect with each other and understand information will be important. One of the big areas is fundraising applications that help identify and track prospects.”

An electrician writes that continual professional education is important in the electrical field, with continual advances in cabling, wiring and wireless technologies, in the design tools used for drawing layouts and in the tools and equipment used by electricians.



Across many different career fields, as technology advances, the ever-present question is “what shall I learn next?” The answers are fun; perhaps learning more about open source software; or learning how to modify existing applications to fit on newer, smaller, tablet or smartphone devices; or just enjoying new photo editing or music writing software or other new tools.

The “what shall I learn next?” question is essential in the mosaic economy, where new technology is always part of the ongoing evolution of jobs and the economy.

In the entrepreneurial mosaic economy, people are motivated to explore new technologies and work on developing new technologies. Whether advancing the work of the organization you work for, advancing your own career, or getting ready to launch a new, entrepreneurial product, individual energy translates into growth and change in the overall economy.

One of the threads of worry that we often hear is that Americans could fall behind other countries in technology. It is easy to worry: ongoing technology development is essential for a successful economy. But it’s also reasonable to be confident that, given a healthy market economy, individuals and organizations will be motivated to explore and work on new technology.

The environment for healthy technology growth is established by a mixture of private, nonprofit and public investment and by personal and organizational-level investment.

The roles of public, nonprofit and private sector organizations blend together, nationally and internationally, in establishing the basic infrastructure for affordable internet connections and wireless networks, for international standards and other infrastructure for computing and technology, for research grants and for the

extensive banks of data and information that are now available to support research and development.

The environment for healthy technology growth is also supported by a strong educational system that allows students to explore technology and prepares them to be ready for lifelong exploration and learning as technology advances.

Because lifelong learning is so important, the environment for healthy technology growth is also supported by networks for lifelong learning. These networks include workplace education and training, training by software vendors or other technology product suppliers, local adult education and community college classes, community centers, parent education connected to local public schools, or do-it-yourself resources for ongoing self-education.

## **Is there a generational divide in technology skills?**

There is an often-repeated myth that younger people are “better” with technology and that they learn more quickly.

I think that technology learning styles, skills and attitudes vary as much among people of the same age as they do across generations. But there are some generational patterns worth looking at, and worth harnessing the assets of older and younger adults.

People who have worked on computers since before the 1990s or 2000s are likely to have what I would call a “pioneer” mentality. They are likely to have originally learned to use computers as work-related tools rather than as entertainment or social media. They are likely to have learned by “creating from scratch” rather than from ready-made templates or point-and-click software. Therefore, they are likely to have a do-it-yourself, make-it-from-scratch attitude; and to continue to value technologies that encourage users to be “doers” and “creators.” Older or mid-career adults are also likely to be most keenly aware of the importance of flexibility in learning and using technology skills. When older or mid-career adults talk jokingly about having used now-ancient technology I think that they are celebrating their flexibility, their ability to learn new things, and their success in staying current through many changes in hardware and software.

Youth are likely to have a “new-pioneer” experience. Youth born since the 1990s know that they are the first generation to grow up with online social networks, electronic instant messaging, and online access to music, movies and other entertainment. They know that these innovations are changing everyday life and enjoy conversations about how much things have changed in a generation. Youth are often among the early adopters of new media and technology and are accustomed to technology that can be learned easily by just trying it out. Many have learned word processing or presentation software in elementary or middle school and are comfortable navigating basic office applications. Some have been fortunate to have some programming or web design or graphic design experience, although that is not at all universal. Schools are only recently developing curriculum standards for teaching technology skills, with the exciting challenge of developing standards that are flexible enough to adapt to year-by-year changes in technology while consistent enough to make sure that students have a foundation that can support them in whatever technology they learn in the future.

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## 14 | Politics, Culture and Dissolving Barriers

One of the foundations of a healthy market economy is a free flow of information, knowledge and ideas as well as a free exchange of investment capital, labor and products. If cultural, political, socioeconomic or geographical barriers limit these free flows, the market economy is less healthy.

Many of the cultural, political and economic tensions in the U.S. today revolve around the concepts of elitism vs. populism and modern vs. traditional values. Some of the tensions probably flow from the last few decades of economic changes, with the feeling that a well-off elite have benefited from (or at least survived) the de-industrialization, modernization and globalization of the economy and a less-well-off middle class and working class have suffered.

Anything that can help to heal these tensions would help to build bridges that would have all kinds of benefits, including social and political benefits as well as benefits related to careers and job markets.

Social and political analysts write about a polarization in the United States today, with many traditional political alliances breaking down and with fewer common experiences linking people across socioeconomic groups. Actually, beyond polarization into two groups, there are many social divisions along lines of income, social group, race, geography and politics. These divisions can both directly and indirectly interfere with the health of the market economy.

As a direct effect, a polarized society can also lead to subtle and not-so-subtle discrimination in hiring; as well as a perception of bias that limits career options.

As an indirect effect, polarization limits the formal and informal connections that support career navigation. A free flow of knowledge and information is vital for workers who are learning how to navigate their careers. There are many different interesting career opportunities, but people need to be able to navigate and find these opportunities. Typically, people draw on past experiences, informal social networks, visible opportunities in their communities, professional networks within their current company or career field, formal or informal career pathways within their company or career field, and other resources in order to navigate career paths. People who lack access to broad experiences and to strong social and professional networks and whose communities have fewer visible opportunities are at a disadvantage in the labor market.

One of the priorities for education and public policy should be to seek ways of building bridges to heal these divisions.

For example, community economic development should be done thoughtfully, creating opportunities that cross lines of socioeconomic groups, cultural groups and local geographic areas. Education should bridge barriers, providing common ground and rich experiences to all students. Support for career development should become a natural part of the fabric of the society, woven into education, community development and community organizations in ways that feel organic and productive.

Examples of building bridges across socioeconomic lines can be found in many sectors of the economy:

- ❖ A network of nursing homes begins offering a career ladder program to entry-level staff, offering adult education classes, career-related workshops and formal opportunities for advancement.
  
- ❖ An association of African-American electricians provides a mentoring program for other African Americans who are entering apprenticeships with their local electrical union. Mentors and apprentices get together for informal conversation, talking about wide ranging topics such as how to do well in apprenticeship classes, how to make the most of the on-the-job experience, personal budgeting, personal strategies and other topics.
  
- ❖ A network of youth program staff from local churches brings together people from different socioeconomic and cultural groups, creating opportunities for friendships to arise naturally and for informal professional networking to take place.
  
- ❖ An urban school system provides family literacy programs, offering adult education, parenting workshops and family literacy events. The family literacy events, similar to the events found in many library children's rooms, offer storytelling, poetry, presentations by guests from local museums and other literacy-focused activities.

❖ A neighborhood development project reclaims long-vacant space and keeps an eye on creating a healthy and diverse mix of new retail, services and organizations while ensuring that the mix meets the needs of low-income and moderate-income residents of the neighborhood.

Most people can describe some positive ways that their communities, employers, professional fields, religious organizations, advocacy organizations and other networks are currently building bridges, as well as some well-intentioned efforts that might somewhat miss that goal, as well as future steps that can continue toward this goal.

## 15 | Work, Education and Systems Thinking

A nurse who worked part-time at a residential program for formerly homeless women and children describes the tea parties that she provided for the children. The tea parties, with beautiful child-sized tea cups, miniature sandwiches, cookies and flower centerpieces were greatly loved, and were repeated many times by request of the children and their mothers. She thought of the idea soon after she started working in the program, after becoming concerned by a growing sense that too much of the activity in the program was centered around problems, with discussion groups, workshops and even posters on the walls of the house that were focused exclusively on the problems and deficits in the women's lives. She even had an uneasy sense that some of the program staff enjoyed this focus, eagerly launching discussion groups that provided a kind of amateur therapy, a let's-talk-about-your-problems format that brought forth dramatic stories, but not necessarily a natural or healthy environment for the women or, especially, for their children.

When she first thought of the idea, some of the staff were skeptical. "Tea parties are too genteel; not appropriate for these children," they suggested. Luckily, she

followed her good instincts and had the tea parties, giving the children one of the simple experiences of childhood that they might otherwise have missed.

This story illustrates some of the concepts of systems thinking. As we as a society look for ways of addressing community problems and ways of helping people who are struggling, it is important to think about ways of providing this help that are, as much as possible, natural, organic and healthy.

Systems thinking<sup>21</sup> suggests that it is important to understand how a system works at its best, as well as to understand the barriers and issues that prevent the system from working. When thinking about how children learn; how they develop personal interests and passions; how they gradually discover career interests, and how they ultimately navigate career paths, it is important to think about how, in a healthy environment, these things happen naturally and organically.

When thinking about how an economy changes and develops, it is useful to understand any natural patterns of growth and change, looking not only at economic theory, but also at our own history and at cross-cultural examples of economic change and growth.

Through this understanding, economic development approaches, educational approaches, community development, career development programs and other public policy interventions can be designed to work within a natural system. Without this understanding, interventions can sometimes backfire or have negative unintended consequences.

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<sup>21</sup> The concept of systems thinking comes from the work of MIT Sloan School of Management Professor Jay Forrester, who developed the concept of Systems Dynamics. In the 1950s, after interactions with Boston Mayor John Collins, Forrester wrote “Urban Dynamics” applying systems thinking to urban issues. Analysis in this chapter is derived from the work of the Emmanuel Gospel Center in Boston, which explores systems thinking applied to urban ministry. See, for example, “Inhaling the Life of the City” in Doug and Judy Hall’s blog at <http://www.livingsystemministry.org/node/5070>.

One way to approach systems thinking is to look at the idea of “asset-based” youth development and community development. In contrast to “deficit-based” approaches, asset-based approaches focus on strengths and provide opportunities for growth.

Examples of deficit-based programs are numerous. For example, a high school in a low-income area focuses English and social studies classes on a single school-wide theme each year, choosing themes such as poverty, oppression and violence each year. Everything in the English and social studies classes revolves around these themes, with assigned readings, history topics and writing assignments focused on the theme. While the intention is to provide education that feels relevant and empowering to their students, the unfortunate consequence is that students may feel unfairly labeled by this focus on deficits in their communities, sensing that the teachers and administrators think that their lives are defined by experiences of poverty, oppression and violence. And the further consequence is that students miss out on experiences that are available in other high schools, missing out on the breadth of literature, arts, creative writing, history and geography that could be part of their curriculum, and missing out on the opportunity to develop a broad range of lifelong personal and career interests.

Or, for example, a youth summer jobs program provides weekly seminars for participating youth in which speakers announce that “we gave you jobs so that you wouldn’t join gangs and commit crimes.” Articles in the local newspaper echo the theme, announcing that the summer jobs program prevents crime and “keeps kids off the streets.” So while it is very beneficial for communities to create positive experiences for youth such as summer jobs programs, it is not beneficial to unfairly label participants nor to communicate such low expectations to the participants and their summer employers. An asset-based approach instead focuses on the skills and positive energy that youth bring to their summer jobs and on the strengths of the local businesses and organizations that provide these jobs. With this more asset-based approach, summer jobs are seen as opportunities for youth to gain work

experience, practice career skills and make a contribution to their employers and the larger community.

A focus on the positive assets of youth, communities and the overall economy and on natural and organic systems leads to healthy, asset-based career development and community development.

In a mosaic economy, people build interesting careers that grow from their early experiences, from the interests and passions they develop, and from volunteer and internship experiences, college and other postsecondary education experiences and first jobs. In the way that one thing often leads to another, people may follow a linear or less-than-linear path from high school to long-term careers.

Typically and ideally, youth and adults are supported by a mixture of formal and informal experiences along the way. Formal experiences include career exploration opportunities through school and community: career speakers, career-related workshops, resume writing and interviewing workshops, internship programs, summer jobs programs and the like. Informal experiences can include a variety of experiences and conversations with family and friends, career-related classroom experiences, after-school clubs and activities, community activities and informal networks that allow students to develop interests and passions and learn about opportunities in their communities and beyond.

On the community level, the mosaic economy evolves as new businesses form and existing businesses re-shape to meet community values – such as desires for community connectedness, health and wellness, new uses of technology and other tangible and intangible wants and needs.

Historically, the typical pattern of economic change includes long-term shifts from agricultural to industrial and service sector jobs and outputs, often accompanied by difficult transitions but also with long-term increases in standards of living.

The mosaic economy evolves as new technology emerges, but older technologies and approaches are also explored, renewed and revitalized. In manufacturing and artisanal production, food and agriculture, health and wellness, construction and design, education, media and communications and many other fields, entrepreneurial efforts and careers are shaped both by the emergence of new technology and approaches and the rediscovery and renewal of traditional approaches.

A recurring theme in the mosaic economy is the idea of organic, natural growth – including the organic way that new economic opportunities arise and the organic way that individuals navigate career paths. Ideally, as educators and policymakers work on expanding economic opportunities and supporting career development for everyone, it is important to nourish these natural and organic approaches.



## 16 | Telling Stories

**T**here is a value to telling stories. While statistics will provide the broad outlines of a situation, stories will bring the situation to life. And when statistics and real-life stories are brought together with open-mindedness and fresh eyes, a mosaic-like picture emerges.

When I was in college I attended a retirement party for an economics professor, a woman who had entered the economics field when it was unusual for women to do so. “I knew I wanted to be an economist,” she explained, “when I was a little girl and traveled with my family. Whenever we went through a town I would ask ‘I wonder what people do for a living here?’”

She would have observed that some towns were surrounded by sprawling farms, with a grain mill or feed store in the center of town; other towns had a mill in the town center, with mill worker housing circled around; other towns had a stately courthouse and busy retail district; other towns might have a college or university that provided the economic focal point..

In many towns and cities, the visual cues of farms and mills may no longer provide an answer, and instead the question calls for gathering individual stories alongside statistics, in order to make sense of what people do for a living. This book

has done some of that, and hopefully the mosaic image has begun to take shape. The story is incomplete, though, since the economy is continuing to evolve, continuing to re-adjust after several decades of major change.

Early in the 1980s I was teaching economics in a local two-year college, and took a group of young college-aged women on a tour of the Lowell Heritage Park, in Lowell, Massachusetts, a park that celebrates the history of Lowell's textile mills and canals. The tour was part of a unit on economic history, an exploration of the long-term evolution of the U.S. economy from agriculture to manufacturing to a service-oriented economy.

As part of the economic history unit, I had presented statistics showing that in the late 1700s and early 1800s when the country was new, about four out of five workers in the United States worked in agriculture. Relatively few worked in manufacturing and relatively few were in service sector jobs – with teachers, doctors, ministers and shopkeepers as examples. As the industrial revolution began in the early 1800s, the number of people working in agriculture decreased, reflecting rising agricultural productivity, while the number working in both manufacturing and services increased. Manufacturing employment as a percent of total employment peaked in the 1920s. Throughout the rest of the century, employment in manufacturing began to give way to more service-sector employment, and by the 1980s when I was teaching this class, and even more so now, the majority of workers in the United States worked in service-sector jobs.

During the Lowell mill tour, the tour guide explained that when the mills first opened, they employed a generation of “mill girls” who came from New England farms. The mill girls were young women who were not needed on their family farms any more in an era of increasing farm productivity, and were sent, or went seeking adventure, to the brand-new mills of Lowell to work. There, they lived in dormitories and participated in book clubs, discussion groups and other cultural events in the evening, after working for twelve hours or more each day in the mills.

“They were our age!” my students exclaimed in amazement, as we toured the dormitories and heard the guide retell their stories.

A generation later, the tour guide went on to explain, the mill workers were mostly immigrants from Ireland, Italy, Greece and other parts of Europe, marking a new chapter in industrial history. We heard about the struggles of mill workers for better pay, hours and working conditions and about the technology shifts that helped the mills to thrive and later to decline. Lowell now has relatively few mills, but has a thriving arts culture, several minor league sports teams, proximity to high tech companies and an eclectic mix of other jobs.

The story of the Lowell mill girls energized our subsequent classroom discussions of economic history, providing a more familiar frame for understanding the way job markets shift from one decade to the next.

The “where are the jobs” question matters both for individuals who are seeking to build satisfying careers, for communities that are seeking investments that will generate jobs for community members and for everyone who is concerned about equity and opportunity in the overall economy.

Telling stories, looking for patterns, and looking for areas of strength and resiliency provide a good start to answering this question.



## 17 | Lessons for Career Development

Ask some small children what they want to be when they grow up. Most likely, their answers will cluster around a few well-known occupations - teacher, firefighter, veterinarian or doctor. Then ask their parents what jobs they have and the answers will be quite varied, including many jobs that most children (and most high school and college students) have never heard of.

When we interview adults about their jobs, we find that most did not know when they were in high school that they would be in their current careers. Instead, many successful careers have been shaped gradually over many years, as people use their career skills to move into new areas of work in the diverse mosaic economy.

There was never really a time in our history when “everyone” worked in a few limited careers. There has always been a diversity of interests, career paths and life work. Now, more than ever, the economy is highly complex with many interrelated themes and personal pathways that combine to create a picture. When we look at the mosaic of opportunities in the economy, certain key themes and patterns emerge. Entrepreneurship. Technology. Building community. Creating healthy personal environments. A re-emergence of manufacturing and artisanal production. Values of

environmental concern, fair trade and social connectedness interwoven into all areas of economic activity.

In an economy with a diverse mosaic of opportunities, personal career decision making should focus on three dimensions: (1.) discovering one's own values and interests; (2.) exploring and networking to find out about jobs, economic trends, and ways of getting started in careers; and (3.) understanding one's own preferences about education and career preparation, and the timeline, risk and rewards of various career paths.

The mosaic analogy – or the analogy of a mosaic pathway -- is useful in understanding these dimensions.

Some people will neatly lay out a pathway, with clear direction and a clear destination. For example, an interest in cities and city planning may lead to a college graduate program in civil engineering or urban planning. An interest in buildings and physical spaces may lead to a career in architecture, landscape design or interior design.

Other people will be comfortable with a broader path, perhaps even a somewhat meandering pathway. Another person with a similar interest in cities and city planning may become a leader in a new bike sharing program or in a local health coalition. A job in corporate philanthropy may lead to opportunities to shape youth programs or to expand community development programs in a city. Skills in coalition building, fund raising, marketing or communications may lead to further career opportunities.

In either case, for the straight career path and the meandering pathway, what are the experiences that help people navigate career pathways?

Ideally, career development starts in early childhood, with a continuum of classroom, community and workplace experiences that build interests, experiences, knowledge and skills.

The first ingredient is a strong academic foundation —with skills including literacy and communication skills, critical thinking, mathematical literacy, civic awareness, history and economic literacy, scientific literacy, information skills, the arts, music and languages. This foundation helps individuals to think creatively and entrepreneurially, analyze information effectively, engage in lifelong learning and understand the underlying themes and opportunities in the economy.

This academic foundation should be complemented a variety of formal or informal experiences: writing for a school newspaper, going to special events and lectures at a local museum, learning how to create videos and websites, helping a family member to do home repairs, following the progress of a local building project, participating in a planning committee in school or at a religious or community organization, teaching a class, helping to organize a school or community event, talking to family members and others about their work, learning through volunteer work, part-time jobs and summer jobs, as well as simply reading, talking and learning all the time. These types of experiences should be available to children and young adults across all social, geographic and economic groups, with no barriers to any group. These experiences build skills in four areas:

1.) *Applied academic skills* – seeing how writing, math, research, information, critical thinking, creative thinking, scientific, design and technology skills are applied in classroom, community and career settings. Having opportunities to “try-out” and demonstrate these skills.

2.) *Essential career skills* — understanding how essential career skills — professionalism, teamwork, goal setting, motivation, communication, project management, customer service, marketing and sales, entrepreneurial thinking, leadership — are used in classroom, community and career settings. Having opportunities to “try-out” and use these skills.

3.) *Career awareness and career management skills* – understanding how to learn about career options, understanding how job markets evolve and change,

knowing what types of careers people have, knowing how people prepare for and navigate various career paths. Understanding how to set goals, navigate transitions, find mentors, seek out information and build a network of support. Building personal resiliency and persistence.

4.) *A range of interests and passions* – having academic-subject-related and career-related interests and passions — as a starting point for further study, personal exploration and/or career development. Having opportunities to enjoy the arts, journalism, science, technology, engineering, design, environmental study, math, media and other interesting areas. Having opportunities to organize community events, participate in community service, work on leadership projects and participate in the arts. Exploring books and media on all types of subjects. Being encouraged to dig deeper into areas of personal interest.

This mix of skills, knowledge and important experiences is also a mosaic, with many small pieces coming together to create a whole. The analogy of a mosaic can extend to all kinds of areas – from understanding the economy to youth development theory to community development theory to personal career development. In all of these arenas, the idea of a mosaic highlights the importance of bringing together many different pieces to create a complete picture.

## Discussion Questions

[1.] When you look at the mix of jobs and opportunities in today's economy, what do you see? How would you describe *your version* of the mosaic economy?

[2.] What is your connection to the subject of the book? Is it relevant to your role as a student, worker, entrepreneur? As a parent, grandparent, aunt, uncle? As a teacher or other professional working with children and youth? As a community leader interested in community economic development? As someone concerned about public policy? As a general interest reader, someone interested in the current economic picture?

[3.] What is your general reaction to the description the mosaic economy? Is it consistent with your experiences? Any surprises? Anything you strongly agree or disagree with?

[4.] Imagine that you are talking with a young adult who is exploring future career options. What is the tone of your conversation -- worried? optimistic? excited about the future?

[5.] How would you advise a young adult who is thinking of exploring a career in an area of personal interest – such as art, acting, archeology, fashion design, music, museum work, etc. – where the career path is by no means guaranteed or safe? How do people make these careers work in the mosaic economy?

[6.] A recurring theme in the mosaic economy is the idea of organic, natural growth – including the organic way that new economic opportunities arise and the organic way that individuals navigate career paths. What does this organic, natural growth look like in a healthy economy? What are the barriers that impede a natural flow of economic activity?

[7.] The author suggests that many careers take shape over time, and that most people work in careers that they might not have predicted when they were in high school. When you were in high school did you know that you would be in your current job? Or, if you are currently in school -- how broad or specific are your career plans so far? Do you have one specific career area that you plan to pursue, or two or three possible areas, or are you not yet sure?

[8.] Think of the career paths followed by some of your friends, family and neighbors. How many followed a straight-line career path? How many have followed a broader or more meandering career path? What are the strategies that help people to successfully navigate a less-than-straight career path?

[9.] To what extent do you think that social, cultural and economic polarization acts as a barrier to a healthy economy and a healthy job market? How would you begin to bridge some of the divisions that act as barriers to a healthy economy?

[10.] In what way is the concept of "asset-based" youth development (as opposed to "deficit-based") relevant to career development in a mosaic economy?

[11.] Worried or hopeful? How hopeful or worried do you feel about your own career outlook? About the career outlook for people in your community? For people in other communities across the country? In your opinion, is it helpful or reasonable for individuals and for local, state and national leaders to adopt a hopeful outlook even in the midst of legitimate worries?

[12.] Inspiration to action? Are there any personal or professional goals you would like to pursue as a result of reading this book? Are there any public policy or educational strategies that you would recommend as a result of reading this book?