

## Beyond Entrepreneurship

### How Innovation and Entrepreneurial Behavior Changes the World

-Jack M. Wilson

#### Chapter 2 Why do Entrepreneurship and Innovation Matter?

Innovation and Entrepreneurship have proven to be the most successful way to address problems and create both economic and social opportunity. It is also about survival: organizations that fail to innovate often disappear.

Digital Equipment and Wang Computer, both born and operated right here in this New England region, were once two of the largest and most important computer companies on the globe. They did not see the microcomputer (PC) coming, and today they do not exist. Apple and Microsoft, two companies that did not exist when Digital and Wang were at their peak are now two of the largest companies in the world.



**Figure 1**  
**Adapt or disappear**  
(<http://chainimage.com/image/dinosaurs-3>)

Blockbuster dominated the video rental business, but now they are gone and videos are delivered on demand by Netflix and others.

Companies that do innovate can succeed wildly. Google, Amazon, Facebook, Twitter, Instagram, and so many others are major companies that are younger than many of our university students!

Geographic regions that foster and support innovation –often around great research universities –are flourishing economically. Innovation and Entrepreneurship create jobs for our citizens, cures for our diseases, and new ways for human beings to interact.

#### *Two Key Concepts in Innovation and Entrepreneurship*

Joseph Schumpeter, a Harvard University economist from Austria asserted the principle of creative destruction.

**Creative Destruction** – 1934- new products and technologies make old products and technologies obsolete.

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Clayton Christensen<sup>1</sup> –Harvard University Management professor, much later took this a bit further with his concept of disruptive innovation.<sup>2</sup>

**Disruptive Innovation**<sup>3</sup>-1997 – new products begin in new, unexplored markets but grow in quality and capability to displace older markets. One example was the way that mini-computers disrupted mainframes and were in turn disrupted by PC's. In both cases, the more established market viewed the new entrants as not serious competitors for their main market. After the entrants took over the low end of the market, they proceeded to move into the more profitable portions of the market.

Steel mini-mills provide a good example in an industrial area. They began by creating poor quality steel at low prices to take the least profitable part of the steel market. They made poor quality rebar, or reinforcing bars, to go into poured concrete. The big steel companies did not pay much attention because that part of the markets was the least profitable. They focused on the higher quality and higher priced market. The mini-mill kept getting better and better and slowly devoured the big companies markets from the bottom. They then grew to displace the old-line steel companies.

I cannot over-emphasize how important these two topics are in understanding entrepreneurship. Creative destruction and disruptive innovation are indeed closely related, disruptive innovation is a very special case when a company enters into a very low end of a market at a place where the dominant players are not so interested because it is not profitable or not able to satisfy their largest customers. But, the company doing the disruption gets a foothold in the market, establishes itself, and then learns how to do the things it needs to do to enter the more profitable and sophisticated portions of the market.

Often the established companies never see it coming.

Innovation is what makes enterprises sustainable. In the immortal words of Andy Grove – the former Intel Corporation CEO: *"Only the Paranoid survive!"*

Steve Jobs said it more gently *"Innovation is what distinguishes between a leader and a follower."*

What is Entrepreneurship?

Now that we have learned about some entrepreneurs and why innovation is important, we should take a moment to define what we mean by entrepreneurship when we use the term. We shall look at the definition given by three key thinkers on the subject.



**Figure 2**  
Andy Grove, then CEO of Intel, shakes the hand of Mark Bernstein of ILinc  
(photo-J Wilson)

<sup>1</sup> [http://en.wikipedia.org/wiki/Clayton\\_M.\\_Christensen](http://en.wikipedia.org/wiki/Clayton_M._Christensen)

<sup>2</sup> [http://en.wikipedia.org/wiki/Disruptive\\_innovation](http://en.wikipedia.org/wiki/Disruptive_innovation)

<sup>3</sup> <http://www.claytonchristensen.com/key-concepts/>

- **Joseph Schumpeter:** *Entrepreneurship is seen as new combinations, which include the introduction of new goods, new methods of production, opening of new markets, new sources of supply, or a new organization.* Joseph Schumpeter was an Austrian Economist who became a Harvard Professor<sup>4</sup>
- **Peter Drucker:** *Entrepreneurship is an act of innovation that involves endowing existing resources with new wealth producing capacity.* Peter Drucker, Professor and Management Consultant, was called the “Founder of modern management” by Forbes Magazine<sup>5</sup>
- Aside: start thinking about how you and others might define “wealth.”
- **Jeff Timmons:** *Entrepreneurship is a way of thinking, reasoning and acting that is opportunity obsessed, holistic in approach and leadership based.* Jeff Timmons, late Professor at Harvard and Babson, was the author of: “New Venture Creation<sup>6</sup>,” “The Entrepreneurial Mind,” and others.<sup>7</sup>

These three definitions help fill out an evolving perspective on who entrepreneurs are how they operate. Schumpeter and Drucker focus on the process while Timmons focuses on the characteristics of the entrepreneur herself or himself.

Who is an entrepreneur? An entrepreneur is a person

- who spots an opportunity (sees a problem)
- has New Idea (finds a solution)
- Is an Innovator
- Takes Well Thought Out Risks, Calculated risks and not gamblers risks
- Finds the resources to implement the innovation.
- Creates and builds a business or other enterprise
- Makes change in the world

The ability to spot opportunities and create new ways to exploit them is at the heart of the entrepreneurial process. The desire to change the world is what drives most entrepreneurs.

<sup>4</sup> [http://en.wikipedia.org/wiki/Joseph\\_Schumpeter](http://en.wikipedia.org/wiki/Joseph_Schumpeter)

<sup>5</sup> <http://www.forbes.com/sites/stevedenning/2014/07/29/the-best-of-peter-drucker/>

<sup>6</sup> <http://uir.unisa.ac.za/bitstream/handle/10500/2050/01dissertation.pdf?sequence=2>

<sup>7</sup> [http://www.inc.com/mike-hofman/2008/04/remembering\\_an\\_entrepreneurial.html](http://www.inc.com/mike-hofman/2008/04/remembering_an_entrepreneurial.html)

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### *Types of New Ventures*

There are several different kinds of new ventures that one might get involved with. They include:

- *Salary Substitute Firms* – In this kind of entrepreneurship, the entrepreneur is seeking to create a career for themselves. They generally want to create a business at which they intend to work for many years. They may not intend to sell the business unless they are planning to retire and do not have a family member to hand this down to. Examples include: Restaurants, convenience stores, dry cleaners, doctor's offices, service stations, etc.
- *Life Style Firms* – These kinds of firms are created when a person wants to indulge their passion, their hobby, or their desire for a particular lifestyle. Examples might include: artists and galleries, custom jewelry makers, pet services, sporting goods and services, and others. A marina owner I met in Tortola was a former Wall Street Executive
- *Entrepreneurial Firms* -These kinds of firms are generally created by individuals that feel that they have a potential business from which they can profit handsomely. In many cases, the entrepreneur is planning to start the firm, and then find a way to sell the firm, go public, or otherwise profit from the value that their hard work has created.

Many of our best-known examples of recent entrepreneurship fall into this category. Examples we might know include Facebook, Amazon, Google (Now Alphabet), Instagram, Tinder, Wayfair, and many others.

Often, the entrepreneurial firms begin as private firms, but eventually most of them “go public” through some kind of “exit strategy.” Going public refers to being able to sell shares of the company in one of the public market places or stock exchanges. An exit strategy is some way that the founders and early investors are able to cash out on the value they have created.

One exit strategy is to sell the company to a larger company. The early investors are then paid for their shares and take the profit. This is termed “being acquired.” Another way to exit is to do an **Initial Public Offering (IPO)**. In an IPO, the company registers their shares on a stock exchange and offers them for sale to the public. This is a very formal and highly regulated process.

Some entrepreneurial firms grow quickly and other disappear. Some of these Entrepreneurial firms grow so fast that we call them “**Gazelles!**”<sup>8</sup>

Some of these firms grow to a value of over \$1 Billion in market capitalization. We call them “**Unicorns.**” A Unicorn is very rare in entrepreneurship –but it is not mythical!

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<sup>8</sup> The Gazelle Theory: <https://www.inc.com/magazine/20010515/22613.html>

Sadly, some firms grow so rapidly that they become Unicorns and then flame out and become "**Unicorpse**." Theranos provides a sad, but interesting story of how one firm followed the path from founding to Unicorn to Unicorpse.

For those interested in how Theranos grew so rapidly and fell so dramatically you might consider reading the case: Theranos at:

<http://www.jackwilson.net/Entrepreneurship/Cases/Case-Theranos-ElizabethHolmes.pdf>

### *Business model innovation*

Not all innovations are technology driven or new product focused. Some are simply new ways of organizing old businesses.

Southwest Airlines in the US and Ryan Air in Europe found new (and very large) markets simply by giving passengers no-frills lower cost travel options.

Dell Computer is one of the best examples. Rather than build computers and then send them to retail stores for sale, like other computer makers of the time, Dell computer offered an online service that would allow the buyer to customize a computer and have it delivered directly. This gave the customer the computer they wanted at a lower cost by cutting out the cost of inventory and the retailer's markup! Cutting out the companies that do wholesaling or retailing is often termed "disintermediation."

Two important types of business model innovation are termed:

- **Disintermediation** is an important technique for developing new business models and for reducing expenses –potentially allowing lower prices and better service to the end user.
- **Mass Customization:** Another key point here is that new business models are enabling products and services to be individually tailored to the needs of users. Mass customization is a polar opposite of Henry Ford's old maxim for the Model T: "*You can have any color that you want as long as its black.*" Interestingly, advances in genomics are allowing even medicines to be customized to single individuals.

### *Invention is not necessarily innovation.*

Long ago it was said that "if one could build a better mousetrap, the world would beat a path to your door." That is ridiculous. Invention can be a nice place to start, but unless you do the work necessary to bring the product to market, the world will NEVER find your door.

Xerox was one of the most famous and horrendous cases of a company that did a great job of inventing new things and then failed to bring them to market. Xerox, in their famed Palo Alto Research Center (PARC), invented many of the key technologies that characterize computers today: The graphical user interface, windows, the mouse, object oriented programming, laser printers, and many others. They never really implemented the technologies and got them to market. Steve Jobs visited PARC, saw these incredible

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(but unexploited) ideas and used their ideas to create the next generation of computing at APPLE -first with a computer called "Lisa" and then with the Macintosh.

Once Apple had implemented the Xerox technologies, Microsoft Windows was not far behind in imitating them. Later Apple had the courage to sue Microsoft for imitating the Apple technologies, but the courts pointed out the obvious fact that Apple had "borrowed" those technologies from Xerox.

Thomas Edison is known as an inventor, but he really did not invent the light bulb, the phonograph, or the movie projector. Instead he improved them enough to bring them to market. Albert Einstein once said, "first we have to make all the mistakes." Edison felt exactly the same way.

Openness and the "Not Invented Here" (NIH) syndrome.

Innovation is something that flourishes in the right climate and cannot take root in the wrong climate. Sometimes organizations cannot recognize a good idea even if it is laid in front of them.

Western Union, the largest communication company of the 19th century was offered the telephone by its inventor, Alexander Graham Bell. They declined saying "we have concluded that it has no commercial possibilities. Yeah, right!"

The founder and CEO of Digital Equipment Company (DEC) declined to get involved in personal computing. In 1977, he famously asserted that "There is no reason for any individual to have a computer in his home." Yeah, right! Today DEC is gone and the PC is in every home with IBM, Microsoft, Apple and others reaping the benefits that DEC (from Maynard MA) could have had.

Thousands of Massachusetts employees lost their jobs, and California came to lead the computer market. Innovation can keep existing companies from disappearing and can create whole new industries. Regions that invest in innovation often prosper, and those that do not often struggle.

Making an organization sustainable.

Some firms, IBM and GE are two examples, have survived for over a century by constantly being open to innovation. IBM began by marketing timeclocks, tabulators, scales and other items. They kept adapting and in 1961 released the IBM Selectric typewriter. That soon swept the market. They had essentially become a "typewriter company." By the end of the decade they were selling IBM 360 computers to businesses and had become a "Computer Company." By the 1980's, they were selling the IBM PC and dominating personal computing. As the 21st century arrived, they were converting themselves into a consulting and services company and eventually sold off the entire PC business. Today they are trying to convert themselves into a big data and artificial intelligence company –with accompanying services. Their Watson supercomputer is renowned for being the first machine to beat a world chess champion. Will they succeed once again?

Similar stories could be told about General Electric (GE), Proctor and Gamble, and other long-lived firms that found a way to innovate and change –even when the change almost killed their former businesses. There is no guarantee that any of these will survive in the long term. The fact that they changed themselves through innovation successfully several times does not mean that they will be successful in the next change.

### Types of Innovation

The types of innovation are often referred to as

- Product: changes in the products or services that an organization offers.
- Process: Changes in the ways these offerings are created and delivered.
- Position: Changes in the context into which the products or service are introduced
- Paradigm: (*Business model innovation*) Changing the underlying mental models or *business models* will define what an organization does.

Some authors wanted to create a catchy “4 Ps” mnemonic, but please take note that “*business model innovation*” is the generally accepted term for this. Yes, business model innovations can often be seen as “paradigm shifts,” but I prefer the term business model innovation to the use of paradigm innovation. Most authors, professors, and researchers agree.

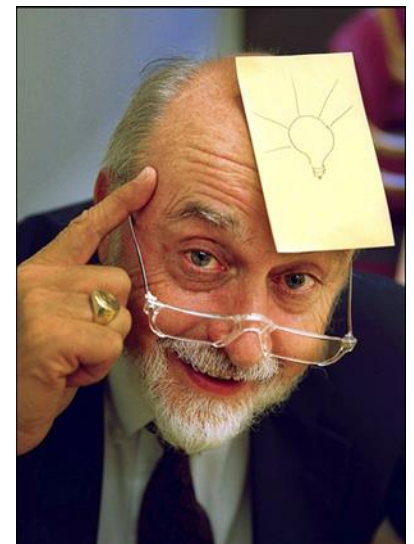
It is sometimes difficult to put an innovation in any one category. Any innovation may overlap several categories.

Here are some examples of these Innovation Types

Examples of Product/Service innovations might include: A new model car, a new computer, Facebook, discount brokerages, or self-driving cars.

Process innovations include: Just in time manufacturing. Six sigma quality control, Robotic assembly of cars, Mass customization, or delivery by drone.

Position: Viagra (sildenafil) was originally developed to treat hypertension and angina pectoris. In the trials they noticed some interesting side effects. The rest is history. Post It Notes is another great example. A 3M scientist was trying to develop a super strong adhesive. He failed miserably by creating a very weak low tack adhesive. After ten years of trying to figure out a use for it, they tried post-it notes. The rest is history. These are examples of re-positioning an invention.



**Figure 4**  
(public domain)

Business model innovation: (Paradigm) – Dell started direct customization and sales of PC’s and cut out the wholesale and retail middlemen (disintermediation). Henry Ford changed auto manufacturing from custom crafting to mass production -allowing cars to be produced inexpensively for the first time. His famous quote, which we have heard

before was: “You can have any color you want as long as its black.” Apple transformed the music business with: iPod, iPhone, and then iTunes. Spotify “rents” rather than sells music. Nintendo creates Pokemon Go to be played on your phone! No more need to make hardware! Netflix delivered digital video on media to the home and then Netflix replaces media with network digital delivery. These business model innovations changed the world dramatically.

Intensity of Innovation



Incremental -----Radical

Innovations are often described as either incremental innovations or radical innovations. It is best to view these classifications as a spectrum and not simply a binary choice. Innovations will fit somewhere on the spectrum. Some are more or less in the middle, while others are easier to place toward the two end categories.

Incremental Innovation examples:

- Automobiles introduce LED lighting
- GM saves fuel in their trucks by shutting down four of the eight cylinders during light duty driving.
- Netflix decided to mail out Videotapes and DVDs rather than make the user go to a store (Blockbuster) to pick it up. (Bye bye Blockbuster)
- Borders and Barnes and Noble add cafes to bookstores and make them neighborhood destinations.
- “Smart” Television sets enable access to network based resources.

Radical Innovation examples include:

- Tesla markets an all-electric high-performance car.
- Toyota creates the first mass market hybrid cars.
- Google creates a self-driving car.
- Netflix decides to deliver video over the network rather than on some media.
- Amazon sells book directly to consumers over the network.
- Tinder creates a cheap widely available app that dispenses with the usual (older?) social conventions around dating.
- Uber (Lyft, Sidecar, Didi Chuxing: China, BlaBlaCr:India) organizes private citizens and their cars to provide an alternative to taxi service.
- Airbnb (FlipKey, HomeAway, VRBO, Wimdu: Germany, 9Flats: Europe, Tujia: China) lets individuals rent out their homes or rooms in their homes to others in competition with hotels and motels.



### *Potential Models of Entrepreneurship Traditional, Effectual, Lean Launchpad*

Over the last few decades three models of entrepreneurship have emerged. The oldest model is the traditional or causal model which is a step by step linear approach and is best characterized by the business plan. Sara Sarasvathy, interviewed entrepreneurs and came up with somewhat different insights. Most recently Steve Blank has built upon her work and created a very robust model called the Lean Launchpad which has been adopted by the National Science Foundation for use in commercializing research that they sponsor.

#### *The Traditional or Causal Model*

Until recently, entrepreneurship was viewed as a traditional (causal or serial) model of entrepreneurship. In this model an entrepreneur:

1. Spots an Opportunity (see a problem)
2. Has New Idea (finds a solution)
3. Is an Innovator
4. Takes Well Thought Out Risks, -Calculated risks and not gamblers' risks
5. Finds the resources to implement the innovation.
6. Creates and builds a business or other enterprise
7. Develops the idea
8. Makes change and captures the value -(can be financial value or social value.)

Recent research has shown flaws in the causal model, and we will explore how both Effectual Entrepreneurship and the Lean Launchpad try to address those flaws.

*Effectual Entrepreneurship* is one alternative viewpoint.<sup>9, 10</sup> There are those who have studied entrepreneurship carefully who have criticized the causal process as much too deterministic. Life is simply not that orderly! Saras Sarasvathy (U. Virginia) has proposed an alternative formulation that she and others term "the effectual entrepreneur." In their formulation there are five major principles<sup>11, 12</sup>:

- Bird in Hand – Who are you? What do you know? Who do you know? What do you have?
- Affordable Loss –Limit risk by focusing on the downside and knowing what you can afford to lose when you go after the upside.
- Lemonade – Use your lemons to make lemonade. Use the bad news as a clue to what might work in new markets.
- Patchwork Quilt – Form partnerships. Working together can increase the probability of success through co-creation of new markets.
- Pilot in the Plane –Control rather than predict. The future is created rather than found or predicted.

We will look at this more closely in a later chapter.

<sup>9</sup> *Effectual Entrepreneurship*, by Stuart Read, Saras Sarasvathy, Nick Dew, Robert Wiltbank and Anne-Valérie Ohlsson Routledge Publishing; NY, NY (2010).

<sup>10</sup> <http://www.entrepreneur.com/article/219772>

<sup>11</sup> <http://www.effectuation.org/sites/default/files/documents/effectuation-3-pager.pdf> •

<sup>12</sup> <http://www.imd.org/news/Creating-entrepreneurs-that-create-opportunities-the-Effectual-Entrepreneurship-textbook.cfm>

### *The LeanLaunchpad*<sup>13</sup>

Steve Blank, Stanford, became the leading apostle of business plan rejection about five years ago.<sup>14</sup> In 2009 he wrote that “In the real world, most business plans don’t survive the first few months of customer contact. And even if they did, customers don’t ask to see your business plan. Steve advocated for the supremacy of business models and he enshrined the concept of the pivot as part of his mantra of the “Customer Development Process” with the concepts of

- “minimum viable product (MVP),”
- “iterate and pivot”
- “get out of the building,”
- “no business plan survives first contact with customers.”<sup>15</sup>



Figure 5 Steve Blank

For those who want to take a full course in the Lean Launchpad, Udacity offers this course online at:

<https://www.udacity.com/course/how-to-build-a-startup--ep245>

In a future chapter we will explore the concept of the lean launchpad, as it is used in the National Science Foundation iCorp Program<sup>16</sup> to encourage scientists and engineers to move their research into the market place through entrepreneurship.<sup>17</sup> You will no doubt notice the similarities to the approach of Effectual Entrepreneurship and the conclusions that Steve Blank reached in the development of the lean launchpad. Sarasvathy is a scholar who has done a careful study and published her work in peer reviewed journals to be evaluated and perhaps substantiated (or refuted) by her peers. Blank is a serial entrepreneur of some success, who draws on his personal experiences and is a consumer of research rather than a producer. His formidable marketing skills have made the lean launchpad a hot topic around the world.

### *Characteristics of Successful Entrepreneurs*

Research has identified some common characteristics of entrepreneurs. Among those are:

- **Passion for the Business:** As we have seen most entrepreneurs possess a desire to change the world
- **A Product/Customer Focus:** Steve Jobs was perhaps the epitome –although he did say that “A lot of times, people don’t know what they want until you show it to them.” -BusinessWeek (25 May 1998) In spite of that quote, Jobs had an intense focus on the customer.

<sup>13</sup> <http://www.forbes.com/sites/steveblank/2013/06/18/the-lean-launchpad-educators-course/#df15d0d43a74>

<sup>14</sup> <http://steveblank.com/about/>

<sup>15</sup> <http://steveblank.com/2009/05/07/business-plan-competitions-2/>

<sup>16</sup> <http://nciaa.org/sites/default/files/u7/Educators%20Guide%20Jan%202014.pdf>

<sup>17</sup> <http://www.businessinsider.com/the-lean-launchpad--teaching-entrepreneurship-as-a-management-science-2011-3>

- Tenacity Despite Failure: Failure is a part of entrepreneurship. Many venture capitalists view prior failures as good experience for project leaders.
- Execution Intelligence: Great ideas, great business plans and great business models are useless without great execution.

Why does the World Care about Innovation and Entrepreneurship? It comes down to Innovation as a component of economic development and job creation. Yes, there is the "Change the World" imperative that might help solve social problems or develop treatments for devastating diseases along with the economic incentive.

Not all countries and regions create a good climate for innovation and entrepreneurship. The rate of starting new ventures depends upon need, culture, and governmental environment. Need is often a key driver -individuals in areas where good jobs are not plentiful often must create their own. Thus, both Peru (27.2%) and Brazil (17.5%) have very high rates of entrepreneurship because of the high need.

Culture is another dimension. Some cultures are more supportive of new venture formation. California is generally considered to be more supportive than Massachusetts -although that has improved a lot! The US (7.6%) is more supportive than Russia (3.9%)

Governmental issues can encourage or restrict entrepreneurial activity. Entrepreneurship relies on certain economic freedoms as well as a well-structured legal and financial infrastructure.

It is sometimes said that 9 out of 10 new ventures fail, but that is overstated. The data shows that the odds are better than that. According to the US Small Business Administration (SBA), after four years 50% are open, 17% are closed but considered successful, and 33% have failed.

Passion drives Key actions and some of those key actions include:

- The ability to learn and iterate
- A willingness to work hard for an extended time
- Ability to overcome setbacks and "nos."
- Ability to listen to feedback on the limitations of the organization and yourself.
- Perseverance and persistence when the going gets tough

There are some commonly believed **myths** about entrepreneurs

- they are born -not made
- they are gamblers
- they are motivated primarily by money.
- they should be young and energetic
- they love the spotlight

It is not true that all entrepreneurs share these characteristics! Of course, some entrepreneurs do exhibit these characteristics, but they are no typical. They are indeed myths.

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Those who do research on entrepreneurship have identified some common traits. Entrepreneurs tend to be:

- Moderate risk taker
- Networker
- Achievement motivated
- Alert to Opportunities
- Creative
- Decisive
- Energetic,
- Strong work ethic
- Long attention span
- Optimistic
- Persuasive
- Promoter
- Resource Assembler/leverager
- Self-confident
- Self-starter
- Tenacious
- Tolerant of Ambiguity
- Visionary

That is quite a list.

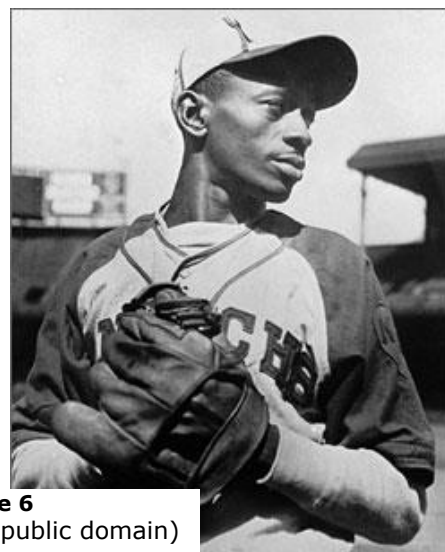
What are the skills required to be a successful Entrepreneur? Here are a few skills that have been identified. Entrepreneurs need to possess these skills:

- Ability to identify what kind of product/service they will offer and what value it creates for people.
- Idea generation and opportunity identification
- Execution of the development of the product or service
- Identification of the customer and the target market?
- Marketing Skills
- Market Research
- Raising funding for the business and making money
- Business Finance
- Networking
- How to manage and grow a business
- HR management, operational management, strategic management, etc.

We will end this section by considering the trait of Persistence –Keep on smiling and moving forward

“When I was young, I thought it was about being brilliant. Now I know that brilliance is good, but persistence wins the day!” – Jack Wilson

Satchel Paige was one of the greatest baseball pitchers to play the game. Most of his career was at a time when African Americans were barred from major league baseball. They played in the “Negro Leagues.” When Jackie Robinson finally broke the color line in baseball and blacks entered the major leagues, Paige was 42 when he was able to enter the major leagues and he played until he was 47. He



**Figure 6**  
Satchel Paige (in public domain)

played in two all-star games at an age when most major league players were retired. He never looked back, he was always looking forward to the next challenge. When he was asked how he managed to do this at his age and after all the obstacles that he had to overcome he replied:

*"Don't Look back, something might be gaining on you."* – Satchel Paige