

## **The innovators Cookbook.**

**Steven Johnson—2011.**

### **The discipline of innovation.**

- All that was wrong, however, was an incongruity between the industries assumptions and its realities. The real costs did not come from doing work (that is, being at sea) to see but from not doing work (that is, sitting idle in port). Once managers understood where costs truly lay, the innovations were obvious: the role on and roll off ship and the container ship. These solutions, which evolved old technology, simply applied the ocean freighters and what railroads and truckers had been doing for 30 years. The shift in viewpoint, nontechnology, totally changed the economics of ocean shipping and turned it into one of the major growth industries of the last 20 to 30 years.
- When an industry grows quickly – the critical figure seems to be in the neighborhood of 40% growth in 10 years or less – its structure changes. Established companies, concentrating on defending what they already have, tend not to counteract when the newcomer challenges them. Indeed, when market or industry structures change, traditional industry leaders again and again neglect the fastest growing market segments. New opportunities rarely fit the way the industry has always approach the market, to find it were organized to serve it. Innovators, therefore, have a good chance of being left alone for a long time.
- The Japanese are head in robotics because they paid attention to demographics. Everyone in the developed countries around 1970 or so new that there was both a baby bust and an education explosion going on; about half or more of the young people were staying in school beyond high school. Consequently, the number of people available for traditional blue-collar work in manufacturing was bound to decrease and become inadequate by 1990. Everyone knew this, but only the Japanese acted on it, and they now have a 10 year lead in robotics.
- To be effective, and innovation has to be simple, and it has to be focused. It should do only one thing, otherwise it confuses people. The greatest praise and innovation can receive is for people to say “this is obvious, why didn’t I think of it!”
- Even the innovation that creates new uses and new markets should be directed towards a specific, clear and carefully designed application.
- Effective innovations start small. They are not grandiose.
- Or it may be the elementary idea of putting the same number of matches into a matchbox. The simple notion made possible the automatic filling of matches and gave the Swedes the world monopoly on matches for half a century. By contrast, grandiose ideas for things that will “revolutionize an industry” are unlikely to work.
- If an innovation does not aim at leadership from the beginning, it is unlikely to be innovative enough.
- When all is said and done, what innovation requires is hard, focused, purposeful work. If diligence, persistence and commitment are lacking, talent, ingenuity and knowledge are of no avail.

## How to kill creativity.

- Creativity is undermined unintentionally every day and work environments that were established – for entirely good reasons – to maximize business imperatives such as coordination, productivity and control.
- Creative thinking, as noted above, refers to how people approach problems and solutions – the capacity to put existing ideas together in new combinations. The skill itself depends quite a bit on personality as well as on how a person thinks and works. The pharmaceutical scientists, for example, will be more creative if her personality is such that she feels comfortable disagreeing with others – that is, if you naturally tries out solutions that the part from the status quo. The creativity will be enhanced further if she habitually turns problems upside down and combines knowledge from seemingly desperate fields. For example, she might like to buy a need to help find solutions to the hemophilia problem, using lessons from the vascular system of plants to spark insights about bleeding in humans.
- Intrinsic motivation principle of creativity: people will be most creative when they feel motivated primarily by interest, satisfaction and challenge of the work itself – not by external pressures.
- Michael Jordan is perhaps the most creative basketball player ever, had a “love of the game” clause inserted into his contract; he insisted that he would be free to play pickup basketball games any time he wished.
- Managers can influence all three components of creativity: expertise, creative thinking skills, and motivation. But the fact is that the first two are more difficult and time-consuming to influence than motivation.
- More specifically, then, what managerial practices affect creativity? They fall to six general categories: challenge, freedom, resources, workgroup features, supervisory encouragement, and organizational support.
- Our research has also been bolstered by a quantitative survey instrument called KEYS. Taken by employees at any level of the organization, keys consists of 78 questions used to assess various workplace conditions.
- When it comes to granting freedom, the key to creativity is giving people autonomy concerning the means – that is, concerning the process – but not necessarily the ends. People will be more creative, and other words, if you give them freedom to decide how to climb a particular mountain. You needn’t let them choose which amount to climb. In fact, clearly specified strategic goals often enhance people’s creativity.
- They keep resources tight, which pushes people to channel their creativity into finding additional resources, nine actually developing new products or services.
- Diversity, however, is only a starting point. Managers must also make sure that the teams they put together have three other features. First, the members must share excitement over the team’s goal. Second, members must display a willingness to help their teammates through difficult periods and setbacks. And third, every member must recognize the unique knowledge and perspective that the other member is able to bring to the table. These factors enhanced not only intrinsic motivation but also expertise and creative thinking skills.
- But to sustain such passion, most people need to feel as if their work matters to the organization or to some important group of people.

- They look for reasons not to use a new idea instead of searching for reasons to explore it further. An interesting psychological dynamic underlines this phenomenon. Our research shows that people believe that they will appear smarter to their bosses if they are more critical – and he often works. In many organizations, it is professionally rewarding to react critically to a new idea.
- Most important, an organization’s leaders can support creativity by mandating information sharing and collaboration by ensuring a political problems do not fester.
- More often people exchange ideas and data by working together, the more knowledge they will have.
- The three components of creativity: Within every individual, creativity is a function of three components: expertise, creative thinking skills and motivation. Can managers influence these components? The answer is an end static yes – for better or for worse – their work place practices and conditions.
- Expertise is, in a word knowledge – technical, procedural and intellectual.
- Creative thinking skills determine how flexibly and imaginatively people approach problems. Do their solutions up and the status quo?

### **The rise of the creative class.**

- “We are not recruiters. We are just hanging out, playing a little Frisbee with our friends.” How interesting, I thought. They’ve come to campus on a work day, all the way from Austin, just to hang out with some new friends.
- “So what is your story?” I asked. “Hey man, I just signed on with these guys.” In fact, as I would later learn, he would was a gifted student who had inked the highest paying deal of any graduating student in the history of his department, right at that table on the grass, with their recruiters who do not recruit.
- The distinguishing characteristics of the creative class is that its members engage in work whose function is to “create meaningful new forms.”

### **The rules of innovation.**

- The management of innovation today is where the quality movement was that years ago, in that many believe the outcomes of innovation efforts are unpredictable.
- I’ve classified these variables into four sets: (1) taking root in disruption, (2) the necessary scope to succeed, (3) leveraging the right capabilities, and (4) disrupting competitors, not customers.
- They are safe because the incumbents are motivated to ignore or even exit the very markets that the entrance are motivated to enter. Taking root in disruption, therefore, is the first condition that innovators need to meet to improve the probability of successfully creating a new growth business. If they cannot or do not do this, their odds of success are much smaller.
- At least one of these criteria must be met in order for an upstart to the disruptively successful. If a new growth business can meet both, the odds are even better.
- #1. Does the innovation and enable less skilled or less wealthy customers to do for themselves things that only the wealthy are skilled intermediaries could previously do?
- #2. Does the innovation target customers at the low end of the market who don’t need all the functionality of the current products? And does the business model enable the disruptive innovator to earn attractive returns at discount prices unattractive to the incumbents?

- Innovators must avoid to common misconceptions in managing the other key resource, money. The first is that deep corporate pockets are an advantage when going new businesses. They are not. Too much cash allows those running a new venture to follow a flawed strategy for too long. Having barely enough money forces the ventures managers to adapt the desires of actual customers, rather than those of the corporate treasury, when looking for ways to get money – and forces them to uncover a viable strategy more quickly.
- The second misconception is that the patience is a virtue – the innovation entails large losses for substantial periods prior to reaping the huge upside that comes from disruptive technologies. Innovators should be patient about the new ventures size impatient for profits.
- Sony, for example, and| the sister’s most successful disruptive. Between 1950 and 1980, introduced 12 bona fide destructive technologies that created exciting new markets and ultimately dethroned industry leaders – everything from radios and televisions to VCRs and the Walkman. Between 1980 and 1997, however, the company did not introduce a single disruptive innovation.
- What drove Sony’s shift from disruptive to a sustaining innovation strategy? Prior to 1980, all new product launch decisions were made by cofounder Akio Morita and a trusted team of associates. They never did market research, believing that if markets did not exist to they could not be analyzed. Their process for assessing new opportunities relied on personal intuition. In the 1980s, Morita withdrew from active management in order to be more involved in Japanese politics. The company consequently began hiring marketing and product planning professionals who brought with them data intensive, analytical processes of doing market research. These processes were good at uncovering unmet customer needs in existing product markets. But making the intuitive bets required to launch disruptive businesses became impossible.
- The fourth factor in successful innovation is minimizing the need for customers to reorder their lives. If an innovation helps customers do things they are already trying to do more simply and conveniently, it has a higher probability of success. If it makes it easier for customers to do something they were trying to do anyway, it will fail.

### **Customers as innovators.**

- We have discovered that a number of companies have adopted an intriguing approach, which at first seems counterintuitive. Essentially, these companies have abandoned their efforts to understand exactly what products their customers want and have instead equip them with the tools to design and develop their own products, ranging from minor modifications to major new innovations. The user-friendly tools, often integrated into a package we call a “toolkit for customer innovation,” the point new technologies.
- A variety of industries use this approach. Bush Boake Allen (BBA), a global supplier of specialty flavors to companies like Nestlé, has built a toolkit that enables its customers to develop their own flavors, which BBA then manufactures. In the materials field, GE provides customers with web-based tools for designing better plastic products.

### **Innovation blowback: disruptive management practices from Asia.**

- They came to describe this unpleasant experience as “blowback,” a term that has subsequently gained wider application in military affairs – to Bernie event that turns on its maker. Blowback is

an apt term for the unexpected consequences of the investment that Western companies have made in emerging markets.

- Over the years, consumer packaged goods companies have reduced their products unit size in emerging markets to unlock demand among customers who can't afford bigger portions. Coca-Cola, for example, began selling 200 mL bottles of Coke in India in 2003. What if companies take this approach with more expensive purchases, such as mobile phones, or even with products for low income businesses?
- Cataract operations in Madurai, for example are performed on for operating tables, side by side. Two doctors operate, each on two adjacent tables. When the first operation is over, the second patient is already in place. "Usually I do about 25 surgeries in a half-day session."
- These models of innovation spell out a clear message for many companies in the developed world: if you're not participating in the mass-market segment of emerging economies, you are not developing in the capabilities you will need to compete back home. Our first recommendation to Western companies is therefore to go offshore, not just to the affluent segments, and not just for wage cost differentials, but to serve the mass market. Only there will you be forced to innovate in the ways required to succeed in the future. The recommendations that follow build on this basic idea.
- When Western executives discuss innovation, they tend to focus more on products than on processes and mostly on breakthroughs rather than incremental product innovations. Supercomputers, blockbuster pharmaceuticals, fuel cells, nanotechnology, lasers – innovations like these capture the imagination and attention of executives in developed countries. Yet very few companies create significant shareholder value through breakthrough product innovations, most economic wealth comes from more modest ones that accumulate over time. Process innovations may be even more important for building competitive advantage and generating wealth. Dell and Walmart stores, for instance have use them to generate enormous amounts of it.
- In fact, most innovation involves creativity recombining existing components of technologies, products or business segments. If executives expand their view of innovation, they may be better prepared to see it in terms of industrial capacity and pace. For example, developing and more module and loosely coupled product architecture – such as a motorcycle assembler did – increases the institutional capacity for innovation and vast promotes incremental improvement. Specialization, as in the example of the eye care system, helps an organization develop innovative processes more rapidly by providing it with lessons from a large number of comparable experiences.
- More important still, a broader view of innovation that values the role of incremental change communicates the power of bootstrapping. Companies that start out with limited capabilities – such as those in many developing economies – can rapidly build them over time through a series of modest processes and product innovations. Ultimately, individual innovators may matter less than the institutional capacity to sustain the rapid series of improvements and the pace at which they are developed and disseminated through a network.

### **The process of social innovation.**

- Where severe innovation defects exist.

- Aging populations that require for example, new ways of organizing pensions, care, mutual support, housing, urban design, mobility and new methods of countering isolation.
- The growing diversity of countries and cities, which demands innovative ways of organizing schooling, language training and housing, to avoid the risk of conflict and mutual resentment.
- The rising incidence of chronic diseases such as arthritis, depression and diabetes. Some historically acute diseases, such as cancers and heart disease are becoming chronic. It is widely acknowledged that the key solutions will have as much to do with social organization as with medical provision.
- Many of the behavioral problems that partly result from affluence are worsening, including obesity, bad diet and inactivity as well as addictions to alcohol, drugs and gambling. None of these is easily addressed by traditional methods.
- Difficult transitions to adulthood – there is a great need to help teenagers successfully navigate their way into more stable careers, relationships and lifestyles.
- Crime and punishment in some countries show a majority of convicted criminals reoffending within two years of living prison – striking pattern of failure.
- The mismatch between growing GDP and stagnating happiness.
- The Glenn challenges that surround climate change – how to reorganize cities, transport systems and housing to dramatically reduce carbon emission, and how to adapt to climate change that may already be irreversible.
- The starting point for innovation is an idea of a need that isn't being met, coupled with the idea of how it could be met.
- Some organizations use formal creativity methods to generate possibilities, like the six hats method devised by Edward de Bono and now used worldwide, the various methods involving users developed by the design company IDEO, and the consultancy What If? All of which into three groups to think more latterly but despite new patterns.
- The second phase of any innovation process involves taking a promising idea testing it in practice.
- The third stage of the social innovation process comes when an idea proves itself in practice and can then be grown, replicated, adapted or franchised. Taking a good idea to scale requires skillful strategy and coax you serve vision, combined with the ability to marshal resources and support and identify key points of leverage.

### **Venturesome consumption.**

- In Democratizing Innovation, published in 2005, von Hippel writes that “a growing body of Imperial work shows that users are the first to develop many and perhaps most new industrial and consumer products.”

## **Innovators at work.**

### **A conversation with Brian Eno.**

- “Oblique strategies”.
- Sometimes we manage, through our education systems, to multiply that energy: often we managed to stifle it. The trick for me is an about showing people how to be creative as though they’ve never been like that before, but rather trying to find ways of the contacting the natural playfulness and curiosity that most people were born with.
- So in my particular case, a lot of my creative behavior has come from looking at technologies, new tools and thinking, “you know what, this allows you to do something that nobody ever thought to do before.”
- Any group of people who has worked together for a long period of time fence to fall into habits about how things are done.
- SJ: I would think that recording in different cities, which you’ve often done, would be helpful in the same way – you are deliberately disorienting yourself with some new culture. I mean, sometimes I hear about people recording a record in the same exotic place, and I think, “why are they traveling all the way there when they can just record it at home?”
- BE: I think one of the other reasons is simply that: getting away from home. So you’re not engaged with picking up the laundry and doing all the normal things for your everyday life. There’s nothing else to do except what you are there to do. And I think that really helps a lot. It’s the strongest reason for going someplace else. The location is almost irrelevant. What’s more relevant is the fact that it’s not your normal location.

### **A conversation with Beth Noveck.**

- BN: you’re exactly right that the notion of innovation is about generating new ideas faster through more interaction with new people and new ideas and creating new conversations. The question is how do you create the mechanics for that richer and more diverse interchange of ideas so you can get better ideas into government saw problems faster. In the current political debates about budget-cutting, I pull my hair out because to me the question is not how do I cut a particular service, but how do I deliver that same service using less money and innovative technologies and techniques to do the same thing for people that we did before. That’s the idea of creating an open government in the sense of open innovation.
- If we actually turned it into a game that could get me tax credits for turning down my heat, how cool would that be?
- One favor project I have is the Federal Register 2.0 project. The federal government publishes the register every day.
- They say, “We’ve never heard of the Federal Register, with never looked at it, but man, is this hard to read. We could make this look better.” Long story short, they entered their prototype in the competition; they don’t get first prize, they get second prize, but the national archives and Government printing office that publishes the Federal Register noticed and saw the entry and thought, wow, that’s pretty good. And they called up the three guys in the coffee shop and said, “How would you like to remake the Federal Register for us?” So the three guys, never done business with the federal government before, know nothing about government – they are three

citizen coders – they get the job, and within three months, in the rotunda of the national archives before the Constitution and Declaration of Independence, the new register 2.0 is announced by the archivist of the United States, with a copy of the Magna Carta in the background. I mean, the founding fathers might as well have been in the room, and these three guys who had to buy a suit for the occasion unveil the new Federal Register. If you go look at it at [www.FederalRegister.gov](http://www.FederalRegister.gov) it's beautiful. A has pictures, it's searchable, if you want to find out what's new today in your home state.

### **A conversation with Tom Kelly.**

- You would say that the answer comes from your expertise, from your informed intuition. And sometimes the answer could be the right one. But the design thinking approach says: “of course I see possibilities here. But I want to defer judgment a little bit – I want to take a humanistic approach, I want to first check in with – you know, what do humans do, what do humans need with respect to this problem?” And then, a part of the design thinking process is this innovative prototyping. Now, understanding what the human needs are, I think I have some answers, as opposed to the answer, and so a good design thinker is really facile, really quick with prototyping, and uses the quickest, cheapest prototyping approach available.
- But it all starts with humility – the humility of “I have approaches, but I don't have the answer.”
- That might be the problems out there, and it seems like this kind of a lot of them out there to me, that are going to be solved by going broader, by getting a business person in the room with an economist in the room with a scientist in the room and an engineer.”
- So in fact, I would argue with cross pollination, it's the only way, if you really want to innovate. Because if you think you are going to innovate by reading your industry's trade magazine, good luck with that. Because every other competitor has that trade magazine on the desk. And so it's good for keeping up with the industry, but it's not good for getting ahead of your industry. And so you almost have to be looking elsewhere.
- “Well, one thing is just to make it clear that's important. So used to, for years run the sum of the management meetings at IDEO. Before that, my brother ran them all. And I would say that the first 20 years of the firm, nearly every group Monday morning meeting started with a show and tell. If you think about it, show and tell is a childish, it's a kindergarten like. But if you think about what show and tell is, it's cross pollination. And so if you have a culture that welcomes that, then you are getting this continuous stimulation of ideas from the outside.
- “And what are they showing at the show and tell?” It's everything. It's new technology, that they've uncovered, it's an interesting book that they've read, it's an event that's going on. If you think of your most precious resource, in any organization, its attention. You tension of the leaders and the team. Just the fact that you are willing to devote that attention, the kind of precious time to bring stuff in. Not knowing whether it's going to be good stuff or not. It says it's important.
- The boss should set up the problem if he or she wants to be there, say how important it is, and then leave, so that the ideas can flow.
- There's a great book out there, it's a coffee table book, called “I wish I worked there” or something.
- So then you get what's called “persistence of information.” As soon as I stepped back inside of that space, in the project again.

### **A conversation with Katie Salen.**

- The problems are really engaging an inch thin, but there's no way on day one that the students can solve them. So gives rise in kids to what we call a "need to know." And that's the core things we care about in terms of the curriculum design. Can we create really compelling learning experiences where kids have an interest in learning about fractions or have an interest in learning how to write a memoir or persuasive essay that they are working on a problem they think is interesting? That's one way that the game stuff manifests itself: we call them "missions," and the missions get broken into smaller classes, which are sort of smaller problems that help kids do work on the bigger problem.
- What does it mean to frame a problem? What does it mean to iterate and propose solutions to something and tested out and get feedback on it? And how do you refine solutions, Heidi tests them? Actually see tremendous creativity on the part of the kids in the school.

### **A conversation with Ray Ozzie.**

- That space where you can get out of the day to day stuff that will impose upon ourselves.