

# The Everyday Boeing Entrepreneur

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## Entrepreneurs

**Spring, 1981, Seattle, Washington**

While investigating why a little coffee company called Starbucks was buying so many of his company's Hammarplast drip coffeemakers, Howard Shultz found his destiny, a passion for introducing Americans to the finest dark-roasted coffees. He joined Starbucks that year, but left three years later to create a company that introduced Americans to espressos and lattes. While the founders of Starbucks just wanted to sell coffee beans, Howard Shultz saw that it would take more than that to bring that product to the masses. He was so successful creating his company, il Giornale, he ended up buying Starbucks in 1987. What we know today as Starbucks is really il Giornale with Starbucks' coffee bean roasting capability. The enabling force that created this redefinition of the commodity market of coffee, was entrepreneurial. Howard dreamt of creating a company that respects employees, has high standards of excellence, has enthusiastically satisfied customers, and contributes positively to the community. He spread his passion and dreams, and entrepreneurial spirit to his employees, and together they took a small Seattle coffee company with six stores and turned it into A Billion-Dollar company.

## Intra-preneurs

**January 1994, Los Angeles, California**

The city lay darkened and isolated from the outside world, victim of the LA's largest modern day earthquake. Genuine terror gripped the burning city's trapped and injured population. The earthquake's brute force overloaded the city's communication lines, adding to the chaos. Key financial and business communications lines failed because one common phone circuit outside the city failed. Still, the few public services left (ambulance, fire, police and hospital) were operational because special software that a team of programmers had created protected the communication lines, saving many lives. The enabling force that created this software was Intra-preneurial. This special software was envisioned by a team guided by a Corporate Vice President who put in place a limited set of controls to motivate and produce exceptional results. The team was sequestered in an intra-preneurial greenhouse outside, and separated from, the large corporation.

## **Innovators**

### **January 17 , 1991, Operation Desert Storm**

Eight Black Slippery Shapes glided through the moonless ebony January sky. It was 2:44 am over Baghdad, Iraq, and the Coalition forces had started their moves. The black shapes weren't ghosts, or apparitions. They were Skunk Works built Lockheed F-117A Nighthawk's leading the attack on Baghdad. Working with total impunity, the pilots carried out their mission, without a scratch to any plane. The Iraqis tried, they lit up the morning sky with anti-aircraft fire. And yet, the planes went unscathed.

How could this happen? Could these planes be totally invisible? Could they fool the strongest concentration of air defenses in the world? For sure, at night, the black faceted aircraft left no visible trace. The enabling force that created these incredible aircraft was Innovation. Skunk Works is a special place that exists with a limited set of controls that bring about exceptional results. These controls were known as "Kelly's Rules", which fostered innovation inside a larger corporation. (see sidebar)

### **Hide in Plain Sight**

Having spent several years in an Intra-preneurial greenhouse within a Fortune 500 company, I've come to understand the differences between the Entrepreneur, the Intra-preneur, and the Innovator. At Boeing, Innovators distinguish themselves in some very fundamental ways. Although it's not apparent at first, they're found in greater numbers at Boeing than in other environments. What disguises them, Boeing is their everyday commonness and the fact that they are interwoven into the fabric of the Boeing culture. Like the nubby-ness of some fine linen, what at close scrutiny seem to be slight imperfections, are what distinguish the cloth as precious and rare.

Unlike the intra-preneurial corporate greenhouses fostered in the 1980's whose immune systems failed when exposed to the to the common corporate cold, Boeing Innovators are not nurtured in some separate environment. No, the Boeing Innovators I have known have a unique immune system and can survive, even flourish, within the corporate culture.

### **Timing is Everything?**

Venture capitalists know the high failure rate of an entrepreneurial business offering innovative solutions to a market. The successful entrepreneurs bring their product to market in a short amount of time, at the right time. That market timing is the foundation of their success. And this is precisely where the Boeing Innovators set themselves apart from the world of commerce; their ideas rarely fail because of "market timing." The change impeded by the social systems within the culture of Boeing transforms time into an ally, giving the innovative minds time to improve or

weed out a high percentage of the "next to impossible" ideas. Thus, the Boeing Innovator ends up with a high percentage of potential success. And that's why the degree of flexibility within the innovative mind at Boeing isn't essential. They rarely change course because they instinctively adapt the solution over time as the problem evolves. When the problem and the viability of a solution go unrecognized by others, the Boeing innovator utilizes the advantage to optimize a solution thus increasing the probability of success.

Most successful business entrepreneurs remain on constant alert to quick changes in market conditions. The business entrepreneur grows their business around flexibility and speed of adaptability, while the Boeing innovator oftentimes is exactly the opposite. The innovator must have a deliberate, gradual and long-term commitment to the solution.

Why? There are two reasons. First, the problem is often extensively embedded in what's "acceptable" as a cultural way of doing business. Even worse, few, if anyone, can see that a problem exists. Second, the innovator has a long-term commitment to the solution because it's embedded in their value system. Their innovation isn't a dream or a fantasy as it might be for the entrepreneur. Boeing innovators believe they "own" the solution and the problem equally. The Boeing innovator sees a solution through to completion because it is the "right thing to do." It is a part of the innovators character, and they have a strong belief that they are the only one to make it work and will often tell you so. The entrepreneur, on the other hand, only owns the solution and, in fact, may encourage or sustain the problem in order to continue to benefit from its existence.

The original thinker at Boeing has a risk orientation that lends itself to solving the problem. It's a different mindset. The original thinker at Boeing does not necessarily have a fear of failure. They actually use fear of being wrong to analyze, gather supportive data, and develop proof of concepts either through prototyping or algorithmic analysis. They actually harness fear, in a way that drives thoroughness and sustains their energy to validate and re-validate the solution. Thus, few of them are dreamers and most are very concrete.

### **The Lemming Deception**

Unlike the Lemming, the Boeing innovator is not fearful of isolation or what lies ahead.

They refuse to comfort themselves by joining the crowd and throwing out their different perspective, which doesn't match the masses viewpoint.

This attitude which is common to the innovative thinker at Boeing is just as uncommon in the classically defined business entrepreneur:

Whereas the typical business entrepreneur's ability to apply the 'killer' instinct or react fast is the typical way to prevail, the innovative thinker at Boeing operates in the opposite fashion. For these men and women, it's the determination to stay the course with persistence and patience, while simultaneously improving on the solution that ensures success. An aeronautical engineer once told me he waited three years for those in power to realize or understand the benefit of changing the approach to presenting performance data. There was no thread of prideful victory nor killer instinct in his voice. In fact, the tone of the conversation conveyed how weary he had become of the fight when he was ultimately forced to seek support outside his discipline to reach success. While this innovator grew disheartened, others have told me they continue to wait optimistically for popular opinion opposite to their idea to wane.

Boeing's Innovators have a great ambition, not for success, not for victory, but for "the better way". Their ability to peak their focus at the appropriate time is reminiscent of an Olympic athlete. They dedicate a certain amount of their time to conforming with the corporate social systems or bureaucracy. But when they reach their limit, they have little tolerance for engaging further mental capacities in non-value-related work.

Their ability to prevail allows them to out-distance the public opinion or roadblocks of the corporate culture through endurance, inner-strength, presence of mind, and the commitment to their personal values. They effectively address critical business issues by developing a personal vision through self-knowledge and awareness, thus internally reinforcing the meaning and purpose of their contribution to change.

The innovative thinker at Boeing believes they are always coming from behind. Their solutions always have room to improve. As corporate bureaucracy and slow cultural change delays implementation, they continue to work on improving the solution. They will work on their own time to make it better and better. And that intensity and focus allows them to prevail. They personify America's most idealized and cherished competitive role, the underdog.

### **Nimble for New Opportunities**

Our innovative thinkers are a valuable resource, and we can no longer afford to let these good ideas go unrecognized for what they are. A Boeing Business Strategy states that we must give more value to our customers "and be more nimble in meeting their needs." When these innovative solutions are realized, we must bring them to fruition faster.

This is not intended to support replacing reason with innovation or creativity. We need to foster acceptance and promotion of the innovative mind. We currently provide little encouragement within our tradition of engineering excellence to arouse and nurture the innovative problem solving that has been the basis for our greatness.

## **How we can grow entrepreneurship in Boeing**

The root of many of the problems with new innovation at Boeing is not technology. Rather, it is the systemic nature of the innovation process, which has been ignored. Specialization has been carried to extremes resulting in the separation or isolation of Boeing innovators. Our culture has emphasized individual achievement, reinforcing a disconnected preference in the Boeing innovator. Finally, measurements provoke behavior patterns that make teamwork difficult and personally unrewarding.

If innovations are to contribute consistently to aggressive business strategies, management must pay a great deal more attention to the creation of teamwork among the many specialists participating in innovation, and less to the selection of technology. Fortunately there are ways to help Boeing affect marked improvement in innovation, one has only to use them. The rewards for doing so are substantial.

Moreover, there is no need for asking ourselves, "what structure is best?" Our answer is not to be found in establishing a new structure. Forget reorganizing. It just creates a "brightest & best" mentality that promotes exclusive groupings, furthering isolation. I suggest an approach to coordinate and attract Boeing innovators into an atmosphere where rapid change and venturesome thinking produces solutions that can directly benefit Boeing, and society as a whole.

### **The Boeing Innovation Club (Olympics) might be named:**

(Boeing Innovation League)

(Boeing Innovation Society)

(Boeing Idea Games or BIG)

### **Reinforce Innovation**

Cease promoting those with trusted behavior and shunting aside, if not eased out, promoter types who are venturesome

### **Identify existing barriers to innovation**

Manager's principal reward must be found in handling existing resources

Managers must be encouraged to pursue innovation in the company's behalf.

### **Exploit any resource pool**

Review the corporate asset shelf (storage shelves of innovation)

Pursue outside opportunities with new thinking

### **Tailor reward systems to the situation (Large organizations like Boeing)**

Foster innovation through security and growing responsibility.

Within the context of a Boeing Idea Olympics, there should be a Contest with innovation that brings cross-discipline integration. The corporation should identify problems, and submit them to the club as opportunities for contest is based around. The contest and teams can bring about a rich variety of solutions that may not have been thought of in the normal work situations.

This approach is being offered because the intra-prenurial green-housing, like GTE's efforts in the 1980's proved not self sustaining. doesn't work for the long term benefit growth of corporations. or the development of it's employees.

The value of a cross discipline club is that this should be the collective intelligence of a quarter million people, coming together, bringing new and innovative ideas into one, exciting force. No one can challenge that power once nurtured. Think about the history of Boeing. This workforce was able to do the impossible. We were able to build 12,000 B-17's in less than five years. That was an amazing time. In the last forty years, we've only built 4,000 jetliners! This proposal is an opportunity to recapture the spirit and drive that was an undeniable force in World War II.

Therefore this proposal is written with passion, clarity and grace to recognize entrepreneur thinking and the genius that restores the soul and sustains the purpose of the Boeing Co. It is intended to encourage discussion and freethinking that can translate into and amplify our organizational intelligence. And finally, it's purpose is only to foster real friendship to those Boeing employees who take on the challenge of innovation, creative thinking and problem solving at the Boeing.

And to re-phrase comment I was told Phil Condit made several years ago, I'd like to ask us all to cherish the oddballs.

### **SideBar**

Eight black slippery shapes glided through the moonless ebony January sky. It was 2:44AM over Bagdad, Iraq, and the Coalition forces had started their moves. The black shapes weren't ghosts, or apparitions. They were Lockheed Skunk Works F-117A Nighthawks leading the attack on Baghdad.

Working with total impunity, the pilots carried out their mission, dropping 2,000-pound laser-guided GBU-27 Paveway III bombs without a scratch to any plane. This isn't to say that the Iraqis didn't try. There was enough Anti-Aircraft Artillery fire to light up the morning sky, as was seen by many people via the CNN reporters Bernard Shaw and Peter Arnett, broadcasting live from their room in Baghdad's Al-Rashid Hotel. And yet, the planes went unscathed.

How could this happen? Could these planes be totally invisible? Could they fool the strongest concentration of air defenses in the word, which included 76 surface-to-air missile (SAM) launchers and nearly 3,000 anti-aircraft artillery (AAA) guns? For sure, the F-117A's weren't invisible to the eye during the day. But, at night, the black

faceted aircraft left no visible trace. The most a radar operator would see is a radar return indicating an object between .01 and .001 square meters - about that of a small bird, barely worth mentioning.

### **What is worth mentioning is how these aircraft came into being.**

The birthplace of the F-117A Nighthawk is the Lockheed Advanced Development Projects division, better known as "The Skunk Works." The Skunk Works is a special place, unencumbered by the usual bureaucracy. It has churned out such aviation legends as the U-2 which operates at more than 70,000 feet, and is still the world's highest altitude single-engine jet. The SR-71 Blackbird, which initially flew in 1964, still holds several world aircraft records for speed (more than 2,200 miles per hour) and altitude (85,000 feet-plus). And, the F-117A Stealth Fighter, the first operational aircraft designed for low observability was a standout performer in the 1991 Persian Gulf War.

This special place exists because Kelly Johnson believed that if only a limited set of controls were in place, he could bring about exceptional results. These controls were known as "Kelly's Rules." It was basically an entrepreneur environment inside a large corporation. It allowed the Skunk Works to deal directly with their customers, the Air Force and the CIA, in a streamlined fashion. They were given control of their budget, and allowed to have teams only 10 to 25 percent the size of "normal" teams. Mutual respect was expected with the military and the CIA, and reporting was done on a timely basis.

Kelly Johnson established the Skunk Works in 1943, with the philosophy of using small groups of capable people to produce results quickly. This enabled them to deliver innovative products on or ahead of schedule, under the projected budget, and significantly below the costs of traditional programs.

They continue to emphasize streamlined, small project teams staffed with multi-disciplined personnel. The bottom-line: the Skunk Works is cost-effective.

### **Kelly Johnson's 14 Rules and Practices**

- 1.** The Skunk Works manager must be delegated practically complete control of his program in all aspects. He should report to a division president or higher.
- 2.** Strong but small project offices must be provided both by the military and industry.
- 3.** The number of people having any connection with the project must be restricted in an almost vicious manner. Use a small number of good people (10% to 25% compared to the so-called normal systems).
- 4.** A very simple drawing and drawing release system with great flexibility for making changes must be provided.

- 5.** There must be a minimum number of reports required, but important work must be recorded thoroughly.
- 6.** There must be a monthly cost review covering not only what has been spent and committed but also projected costs to the conclusion of the program.
- 7.** The contractor must be delegated and must assume more than normal responsibility to get good vendor bids for subcontract on the project. Commercial bid procedures are very often better than military ones.
- 8.** The inspection system as currently used by the Skunk Works, which has been approved by both the Air Force and Navy, meets the intent of existing military requirements and should be used on new projects. Push more basic inspection responsibility back to subcontractors and vendors. Don't duplicate so much inspection.
- 9.** The contractor must be delegated the authority to test his final product in flight. He can and must test it in the initial stages. If he doesn't, he rapidly loses his competency to design other vehicles.
- 10.** The specifications applying to the hardware must be agreed to well in advance of contracting. The Skunk Works practice of having a specification section stating clearly which important military specification items will not knowingly be complied with and reasons therefore is highly recommended.
- 11.** Funding a program must be timely so that the contractor doesn't have to keep running to the bank to support government projects.
- 12.** There must be mutual trust between the military project organization and the contractor, the very close cooperation and liaison on a day-to-day basis. This cuts down misunderstanding and correspondence to an absolute minimum.
- 13.** Access by outsiders to the project and its personnel must be strictly controlled by appropriate security measures.
- 14.** Because only a few people will be used in engineering and most other areas, ways must be provided to reward good performance by pay not based on the number of personnel supervised.