

How does Toyota manage to implement one million new creative ideas each year?

How does an organization implement one million new creative ideas each year? And become a perennial top ten profitable companies of the world. And achieve market leadership while relentlessly pursuing perfection and delivering some of the best new innovations the world has ever seen.

Welcome to Toyota's Innovation Factory. The world knows Toyota as the car maker that produces such great brands as Camry, Lexus, Prius, Scion, Rav4 and more. For example, the introduction of the Hybrid car back in 1997 when other car makers had not even put together a design for a hybrid car, much less a concept car.



Matthew E. May, a senior University of Toyota advisor, and the author of "The Elegant Solution: Toyota's Formula for Mastering Innovation" puts forth a passionate perspective on how Toyota creates new innovations at the breakneck speed of over 2,500 new ideas implemented every day. How is this possible? Innovation at Toyota has to do with the history, foundation, guiding principles and practice.

Foundation of Elegance and Innovation

Toyota was founded by Sakichi Toyoda as a handloom company. In 1898, Toyoda created Japan's first steam-powered loom. Toyota Motors began as Toyota

Automatic Loom Works, a company whose looms were of the "highest quality, lowest cost, and easiest to use." Sound familiar. Hence the term "Elegant Solution" which according to May is about "finding the aha solution to a problem with the greatest parsimony of effort and expense." And May argues that at Toyota, you get elegance from creativity, simplicity, intelligence, subtlety, economy, and quality. Further, May lays the groundwork for the term Innovation, which according to David Neeleman, founder and CEO of JetBlue means: "Innovation is trying to figure out a way to do something better than it's ever been done before." Indeed. This has become one of the guiding principles at Toyota.

Guiding Principles for Driving Innovation

Three guiding principles drive Innovation and create elegant solutions at Toyota, which were originated and finessed by Toyoda:

1. The Art of Ingenuity

May asserts that in order to succeed in an ever complex business world with competing pressures to innovate amidst competitive pressures and yet manage risks and uncertainty, an individual has to be both an artist and a scientist. Ingenuity creates images of cleverness, resourcefulness, initiative, originality, inventiveness, creativity, skill and even cunning – resulting in innovation. Sound contradictory. The key is to continually ask the question: "Is there a better way?"

This is possible if the individual fully leverages their domain knowledge and expertise, continuously pursues every possible way to innovate and perfect,

challenges opposition tactfully, does not accept the status quo, and uses organizational efficiencies to drive new ideas and methods. Toyota has made ingenious vehicles such as Camry, RAV4, 4-Runner, RX which have become perpetual favorites in the market place.



2. The (relentless) Pursuit of Perfection

May argues that for a business to succeed at innovation, it has to rigorously search for an optimal solution – one that yields low-cost, low-risk, high-impact breakthrough. Innovation happens at Toyota through systematic pursuit of perfection at every level, every department, in everything Toyota does. Perfection equates to excellence, precision, flawlessness at Toyota. And it is this chase for perfection that creates better processes, products and services for tomorrow, today. It takes many small steps (Collins - Built to Last) to create sustainable innovation. For example, the Lexus cars made by Toyota epitomize perfection in the form of car design, function, performance, service and total satisfaction.

3. The Rhythm of Fit

May propounds that great innovation has to fit – fit the innovator, the times and the larger system. How can a great innovation shape and then change the attitudes and behaviors of people, the way they think, they work, they live? A change that fits in the current time and environment. For example, the Toyota Prius car. A hybrid car that provides plenty of room in the inside, shows solid performance on the highway,

provides all the safety features, and gives great gas mileage and range. Toyota envisioned the changing environment of higher gas costs and pollution that wanted a car which is economical to drive, is environmentally friendly (green innovation), and does not sacrifice the inherent need for roominess, safety and performance.

The three principles create both the policy and framework at Toyota for driving innovation and creating elegant solutions. How would you find and drive innovation at your organization? Here are six ways to find innovation. If you are a technology company, read about how Intuit creates innovations and achieves market leadership using similar principles. May asserts that these three principles are non-negotiable and must be adhered to by everyone at Toyota.

Blocking Innovation

May also talks about the obstacles that hinder sustainable business innovation which Toyota has tactfully avoided through out its history. He calls these innovation blockers “temptations”, which are about taking short cuts, trying to hit a home run every time, creating products too complex that are top loaded with extra dressing, and without a real understanding of the innate customer need.

Here are the three Innovation blockers (does your organization block creativity and innovation? Here are some tips to unlock creativity and innovation) that Toyota has avoided over the years:

1. Swinging For Fences

High risk. High reward. NOT. When a company only focuses on trying to go all out for home runs every time at bat, you will strike out more often than not. The key is to build a sustainable batting average -- lasting innovation, and not just go out swinging every time at bat.

2. Getting Too Clever

Every product manager at one time or the other is guilty of adding all those extra "bells and whistles" that the customer does not care about. This happens when you bow in to competitive pressures, or needs of specific customers that are not indicative of the mass market. The company ends up creating products that customers actually run away from.

3. Solving Problems Frivolously

May calls this the "brainstorm" trap, which is creating something that is out of line with the company's core values, not serving customer's true needs, and worse yet, something that is created hastily without rigor and analysis.



Ten Practices for Making Innovation

May showcases the following Ten Practices that Toyota has adopted on its core principles towards making Innovation happen:

1. Let Learning Lead

"Learning and innovation go hand in hand, but learning comes first." Education and Learning can drive substantial innovation.

2. Learn to See

"Elegant solutions often come from customers -- get out more and live in their world." The key is to unearth the latent needs of the customers, and perceive the emerging needs.

3. Design for Today

"Focus on clear and present needs, or your great ideas remain just that." Innovation that drives business in today's market is likely to get funded and succeed.

4. Think in Pictures

"Make your intentions visual -- you'll surprise yourself with the image." In [Six ways to find innovation](#), we talked about the need for visual imagery.

5. Capture the Intangible

"The most compelling solutions are often perceptual and emotional." This is where the product manager needs intuition and the ability to read their customers' minds.

6. Leverage the Limits

"Restraining forces rule -- resource constraints can spur ingenuity." It is critical to know what you can deliver, how you can deliver and by when.

7. Master the Tension

"Breakthrough thinking demands something to break through." In [Failures and Stumbles driving innovation](#), we talked about the five takeaways stimulating innovation. Accept that mistakes will be made.

8. Run the Numbers

"Think for yourself -- temper instinct with insight, focus on facts, and do the math." A sound technical analysis is critical before you begin a new product innovation. This should take into account such factors as risks, probabilities of success, and lessons learned from past projects.

9. Make Kaizen Mandatory

"Pursuing perfection requires great discipline -- create a standard, follow it, and find a better way." A process is a must have. Think Six Sigma. Think Rigor at Intuit.

10. Keep It Lean

"Complexity kills -- scale it back, make it simple, and let it flow." Innovation happens when you can simplify

the intended application and make it so easy-to-use that it becomes a no-brainer.

Bottomline:

Toyota has become the dominant car maker today based on large part due to the Innovation Factory. A Factory based on a foundation of creating elegant solutions through three guiding principles, avoiding three “temptations” and driving ten production practices.

"Toyota is becoming a double threat: the world's finest manufacturer and a truly great innovator . . . that formula, a combination of production prowess and technical innovation, is an unbeatable recipe for success."