Creating a High Velocity Learning Organization: The Executive Imperative

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Introduction: Why are there better apples

For 20 years, my work had one focus: explaining how a few people doing the same work as most people, do it much better. Commercially, this means delivering more value to market with unmatched speed and ease. The very best, their customers, their employees, and their communities win gigantic rewards.

I’ll share lessons from these experiences and extrapolate what they mean for the Navy facing—as Admiral Richardson says—more threats, from more actors, within compressing cycle times, and with rapidly evolving technology and a pervasive global information system. Success against this mix, volume, and speed of challenges demands the habitual identification and rapid understanding of new threats, opportunities, and responses, ranging from the ‘tactical edge’ to the core, and up and down from the deck plate through the chain of command.

Operational Complexity

First, some context. Toyota’s plant in Kentucky operates at huge scale and complexity. It is a $5 billion investment, employing about 7,000. For contrast, the George Bush is a $6 billion asset with a crew of 5,000. Toyota Kentucky runs continuously, with skilled-trades and engineering maintaining, repairing, and upgrading complex machinery that must operate flawlessly to get great product out the door without doing harm to employees or the environment.

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2 “Design for Maintaining Maritime Superiority”
The plant is not standalone. It depends on suppliers, spanning North America and bridging to both Asia and Europe.\(^3\)

And nothing is “turn key.” Operations are a high wire routine of constant adjustment to maintain coordination, despite the vagaries of weather, logistics glitches, changes in market need, and periodic crises like the loss of facilities due to fire, port closures, or natural disasters.\(^4\)

All has to be digested so Toyota Kentucky can launch half-a-million new units every year—that’s more than one a minute, around the clock.\(^5\) And once those cars “leave the deck,” as it were, they fly into competition with the Ford Fusion, Honda Accord, Hyundai Sonata and Kia Optima, each of which is launched out of its own constellation of development, design, and delivery.\(^6\)

**Non Parity of Outcomes**

With aggressive competition against every model and brand and in every region—there are no protected spaces on the sales side. The same is true in acquisitions. Competitors can purchase the same steel, aluminum, and plastic for their products, and the equipment on which raw materials are processed is not different than anyone else’s. All hard and consumable assets are available to everyone.

Given the complexity of such operations, that they have to go head to head against near peers and potential disruptors such as Tesla, Local Motors, or Tata, and that rivals are constantly probing for marginal advantages, one would expect that parity on investments and parity on

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\(^3\) And that network is but one in a larger Toyota/Lexus system through which products and services are offered across different models, brands, and regions.

\(^4\) To add to the potential for chaos, most elements within the globe spanning network are meeting needs for many customers, so Toyota has to maintain choreography of their vendor base while those first, second, and third tier suppliers are adjusting to other Toyota plants as well as Honda, Ford, General Motors, and BMW.

\(^5\) About 40% of those are Camry’s in different forms, with the remaining 60% spread across Avalon, Venza, and Lexus, with both conventional and hybrid power, so there is significant complexity in product mix.

Of course, every time Toyota launches a vehicle, they first have to build it from scratch, as opposed to the F-18s that arrive from Boeing or an FRC already assembled.

\(^6\) And this ability to produce what’s needed when depends on upstream support in the form of strategy, market intelligence, and new designs, a multi billion dollar undertaking.
effort would lead to parity in outcomes. But that is not the case. Results are incredibly skewed. Ford earns about $950 per unit. Toyota earns nearly triple, at $2,700. Fiat-Chrysler and GM trail behind those two.\(^7\)\(^8\)

On a more micro scale, the Camry has been the best selling model for over ten years. As for hybrids, Chevy Volt has sold somewhere shy of 100,000 copies since being introduced in 2010. Toyota’s hybrid systems beat Chevy to market by ten years,\(^9\) and they are on over 7,000,000 cars\(^10\). For all practical purposes, the game is unfair.

### Learning as the Sole Source of Competitive Advantage

Enormous and persistent gaps in profitability, market share, and the like cannot be explained by preferential access to product, technical process, or market. The only meaningful source for differentiation is figuring out better faster what the market needs and learning how to deliver against those targets.

\(^7\) The consumer electronics industry is also one in which competition around every product type, at every price point, in every market, with many large capable rivals creates an incessant battle. In that arena, Apple sells one smartphone out of every five sold worldwide. While it has a plurality of sales, its profits are super majority, some 92% of the markets.

\(^8\) Those macro results are the roll up of micro ones. Operationally, Toyota has maintained leadership on quality, productivity, compressed design-cycles-times for new products, and production ramp speed of new models and new facilities for decades. To put this in concrete terms of doing much more, more quickly, with less effort, the world standard for major model upgrades on the design and engineering side was approximately four years. Toyota compressed this to two and a half, meaning that everyone else was competing with outdated form, features, and functions.

When it came time to ramp production for new models, it used to be that most car companies would have to shut a factory for weeks, idling its workforce and leaving its capacity untapped. Toyota drove down the time between the last of one model year and the start of the next to ten minutes. That was just enough time to disconnect and remove existing equipment at hundreds of work stations and replace it with gear that had been piloted and staged off line, and man it with operators who had already been trained to pick up with hardly a beat.

\(^9\) Despite/because being excluded from a US government 1993 initiative on hybrid systems.

\(^10\) The technology is in its 6\(^{th}\) generation, and it appears on more than 20 models.
Learning fast is the differentiator because my team and your team both start too ignorant of what the market needs and we both start too ignorant about how to be successful. So, if your team gets to a better faster configuration of systems to meet those needs, then your team gets better rewarded for learning faster than me, with devastating results for those who lag.

Learning versus Training

Talking learning is easy. Doing learning is hard. Most organizations are good at taking accepted skills that have accepted purposes, and conveying them in well-accepted ways.

Bona fide learning is different. Learning converts ignorance and lack of capability into knowledge and skill and, ultimately, understanding. The first step in learning requires challenging what is accepted—is this the right purpose, are these the right skills and approaches, are they being taught in the right way? We have to recognize what we don’t know, and then find new approaches for solving new problems, knowing, in advance, that most trials end in error.\textsuperscript{11}

Expanding Ranks of ‘Knowledge Workers’

There’s another challenge. We have our biases to overcome.

In the commercial and academic sectors, the phrase ‘knowledge worker’ may trigger images of doctors and scientists in lab coats or high tech hipsters in T-shirts and jeans. But that doesn’t mean engineers in khakis, techs in coveralls, or operators in hardhats are not knowledge workers also. In fact, because of the frequency, mix, volume, and distribution of problems, they have be knowledge workers for work to proceed well.

When everyone is a knowledge worker in practice, it is a thing of beauty. Alcoa reframed the work of hourlies from using gear to give shape to stuff to building deeper understanding of how to create value. The risk of on the job injury collapsed from 2\% to 0.07\%, hundreds of millions in cost were extracted, productivity, yield, and first pass quality sky-rocketed. While other manufacturers struggled, the stock market treated Alcoa less like the Dow Jones Industrial that

\textsuperscript{11} This distinction between training and learning dovetails with explanations as to why dominant incumbents were vulnerable to ‘disruptive innovation’ in the commercial space (see Christensen, The Innovator’s Dilemma) and feels consistent with the Army’s inability to build competitive doctrine around armor and aircraft during the interwar period but could field a fine equestrian program (see Johnson’s Fast Tanks, Heavy Bombers).
it is and more like a Silicon Valley start-up, in the business of generating and commercializing new ideas.\(^\text{12}\)

Furthermore, our norms may limit who gets to challenge, who can be challenged, and who gets to invent.

At what level does someone get to challenge what is accepted and get time, resources, and training to find different approaches? Is it the associate on the line, her junior counterpart in engineering, is it the team lead or group lead, or does someone have to be super senior to challenge rather than just accept?

Those norms can prevent aggressive, broad based learning. Questions arise like: “What am I expected to demonstrate, how will I be evaluated, will I be penalized if ‘learning’ disrupts exercise of ‘routine’ commitments for which I’ve been trained?”

The problem is, those questions are often unwelcome. Too often, executive functions are characterized by receiving reports, conducting analysis, giving direction, auditing for compliance, and dispensing rewards. People then default to known routines, discovering nothing new. Change does not emerge organically, ‘from the bottom up.’

**Air Cover from the Executive Level**

For learning to actually take hold, there has to be an offsetting motive force from senior leadership. It starts with giving meaningful answer to those questions, such as “You’ll be expected to identify problems, you’ll be expected to try new approaches, you’ll be evaluated not on results only but the discipline and speed with which insights are generated.”

And then it involves putting words into action. I detailed in my book the daily work of Toyota Indiana President, Norm Bafunno, who visits and investigates the large-scale improvement projects of his group leads everyday. Or there is the Toyota Kyushu President who created

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\(^{12}\) DTE Energy reframed how it viewed and engaged its hourly workers, from guys turning wrenches to people coming to ever better understanding of what to do, why and how to do it. With this new approach, they and exempt staff—engineers, managers, and the like—doubled productivity in field service operations, and cut operating costs by 25%. A company in an old industry internalizing a “new economy” mindset.
shop floor experiments putting every idea to an empirical test, his own included so rank didn’t hold sway.\textsuperscript{13}

**Conclusion**

Let me finish with this. For too many, unleashing the creative energy and tapping the potential of everyone to poke and prod for flaws and pilot new ideas is decidedly counterculture.

But that’s our American opportunity.

240 years ago, we expressed the aspiration that “all men are created equal.” 15 years after that we agreed you could stand on a soap box in the town square and disagree, if others agreed with your disagreement, they could assemble, and if it was worthy of sharing more broadly, someone could write about it. Our legal system, in many ways, is constructed to protect those assertions, and our markets for ideas and things foster the challenging of the old by the new, the good by the better.

Since then, enormous wealth has been spent and blood has been shed in pursuit of realizing that ideal, both at home and overseas. This undoubtedly is still an ongoing process, but you can make the argument that we are unusual if not unique as a people in undertaking the challenge. Relentlessly pursuing that ideal may be the advantage no one else can duplicate.

Thank you.

\textsuperscript{13} So, what to do if learning—broad based, deeply rooted and high velocity—is going to become a the critical competitive asset, if challenge is to become the ‘new normal?’

There is already an answer. In industry, when a new technology is brought in, the best approach is to create a model line—a protected place where its functionality can be tested, its application can be explored, where skills for its uses can be built, and where mechanisms for its larger scale introduction can be developed. The model line is not just about “the stuff” and “the gear” it is about developing the routines and purposes for its use. The military has similar structures in the form of developmental units and developmental squadrons. As different as the technology and techniques they test and the missions for which they are purposed, they have the common attribute that they exist to test and trial towards developing reliable approaches others can employ.

To be clear, the “developmental unit” is not a one and done. It’s a platform for practicing new routines and relationships from which broader propagation is made.