

## ***Managing multiple streams of innovation***

### **Tyranny of success**

In 1977 Ken Olsen, the founder and CEO of DEC said “There is no reason for any individual to have a computer in his home.” The irony here is that in 1998 a struggling DEC was sold to Compaq, a maker of computers for people’s homes—which in turn was acquired by HP. Of course everything looks clearer in hindsight, but the unfortunate fact is that we often can’t know in advance where to place bets. The next market or technological disruption can be difficult to predict. Nevertheless, it is a puzzle that so many firms do see the next wave in their industry, possess the technology that is later their undoing and fail to act.

The Swiss Watch industry was the first to develop an analog quartz wristwatch in the late 1960s. However, it was the Japanese who successfully commercialized the technology, driving the Swiss into bankruptcy by the early 80s. The U.S. tire industry faced a similar fate. Firestone was a dominant player in the industry, along with its competitor in Akron Ohio, Goodyear. Firestone was a much admired company, with strong results, values and culture. It witnessed a European competitor, Michelin, introduce radial tires. Even though Firestone possessed radial technology, which was cheaper and more effective than the dominant bias ply tires, it failed to respond. Within a few years consumers were buying radials, Firestone and Goodyear were acquired and the US tire industry lost its dominant position.

Firestone and the Swiss Watch Industry are not alone. There is a compelling pattern to research that correlates corporate failure with companies that achieve strong market positions. The factors that make market incumbents successful – highly optimized business models for serving the needs of its customers, organizational competencies tightly tuned to the needs of delivery – are also those that contribute to missing shifts in the market and to suppressing innovation. This phenomenon has been observed in all industries, affecting companies such as IBM, Polaroid, Xerox and others.<sup>1</sup> It seems that the more finely tuned for delivering profit in today’s market, the more likely a business is to deny new technologies, business models and competitive threats. Understanding the nature of the market and technological disruption with which a company is faced can help it anticipate some of these shifts and more successfully align the organization to execute a new strategy.

### **Innovation Streams**

At Change Logic, we analyze a company’s innovation portfolio along 2 axes – the degree of technological change and the nature of the market being targeted. This tool helps a company assess the balance of its innovation investments, identify gaps in the portfolio and isolate areas of potential weakness – i.e., types of innovation with which it is more

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<sup>1</sup> Tushman, Michael, and O’Reilly, Charles; *Winning Through Innovation: A Practical Guide to Leading Organizational Change and Renewal*, Harvard Business School Publishing, 1997

likely to struggle. We define the segments of the Innovation Stream map in the following way:

**Technological change**

- Incremental – improvements to price/performance advance at a rate consistent with the existing technical trajectory
- Architectural – advances that result from substitutions of entire sub-systems or linkages between sub-systems that are core to the product’s functionality
- Discontinuous – a fundamental shift in the underlying technology that represents a leap in functionality or user experience

**Markets targeted**

- Current – customer groups already served by existing products or services
- New – customers that are largely unaddressed by the subject of the map, but are served by other companies
- Emerging – a new customer group to everyone that is developing because of external social/environmental factors

**Innovation streams**

<b>TARGET MARKET</b>	<b>Emerging</b>	IBM Life Sciences Colored Fashion Lenses	Handheld Scanner A Wristwatch - Quartz	Handheld Scanner B & C Visudyne
	<b>New</b>			USA Today.Com Polaroid Digital Camera
	<b>Current</b>	Regular Contact Lenses USA Today Bias ply tire Flatbed Scanner Polaroid Analog Camera Wristwatch - tuning fork	IBM Pervasive Computing	Daily Disposable Contact Lenses Radial Tire
		<b>Incremental</b>	<b>Architectural</b>	<b>Discontinuous</b>
		<b>TECHNOLOGICAL CHANGE</b>		

Each of these innovation streams presents different organizational challenges. Incremental innovation to existing customers is the terrain of Total Quality Management and Six Sigma. They help to drive out variation, improve efficiency and maximize performance. However, incremental innovation alone can leave a company blind to more disruptive innovation.

The Swiss bypassed quartz to go into full production with the next generation of tuning fork oscillator, at the same time as the Japanese prepared to launch their much cheaper and more

reliable alternative. The Swiss struggled because the quartz movement was a ‘competence-destroying’ innovation – it represented the negation of the engineering skill that had allowed their brand to become the hallmark for quality and luxury in timepieces. From their perspective, quartz was an inferior low-technology substitute for their superior specialist skills.

Another reason the Swiss struggled was that the customer group they served – the status-conscious wealthy – were not asking for cheap alternatives. The disruption in the Swiss Watch Industry’s market emerged from a customer group they had dismissed – the masses! Not until the Swiss industry was reinvented by an outsider, Nicholas Hayek, would they figure out how to respond.

Another more recent victim of a ‘competence-destroying’ innovation is Polaroid Cameras. Polaroid had developed an array of new digital imaging competencies, but the rigidity in existing processes and management’s inability to implement a new business model stopped them from successfully entering new markets<sup>2</sup>. Even though Polaroid possessed digital technology long before it became a consumer product, the orientation of the company was to the traditional instant photography that it had so successfully pioneered.

It is the ‘competence-destroying’ characteristics of disruptive innovations that make them so difficult to embrace as they frequently challenge something fundamental to a firm. However, it is a mistake to associate this solely with discontinuous, breakthrough technology. Frequently an architectural innovation – in which key sub-systems or the linkage between them are replaced – is just as challenging as a genuine breakthrough. Indeed, research demonstrates that in some industries every architectural innovation was associated with the leading firm being replaced.

## Explore and Exploit

Change Logic’s research is that the winners are those that can manage both *exploit* businesses – that deliver today’s results incrementally – and *explore* businesses focused on new opportunities and innovation streams. This requires a clear understanding of the innovation portfolio that is being managed along with the potential organizational barriers to successful commercialization.

Successful innovators are typically those companies that not only generate a strong flow of new ideas and business concepts, but which also commercialize them to create new revenue streams. In a successful incumbent, this is achieved without losing focus on current revenue streams that are the basis of today’s performance. However, the competencies, structures and cultures that evolve to optimize current revenue are frequently inappropriate for pursuing new strategies for moving into adjacent customer segment or commercializing innovations.

Ciba Vision (now part of Novartis) in the early 1990’s was a company that embraced an explicit ‘explore’ and ‘exploit’ strategy in the contact lens market. Lagging the leader, Johnson & Johnson, Ciba Vision set about creating a series of market experiments. Each had the potential to disrupt its current market position but with varying degrees of

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<sup>2</sup> Tripsas, Mary, and Giovanni Gavetti. 2000. "Capabilities, Cognition, and Inertia: Evidence from Digital Imaging." *Strategic Management Journal* 21:1147-1161.

technological innovation. Some, where simply fashion items attracted at younger consumers, others discontinuous innovation with medical benefits in treating age-related macular degeneration.

Ciba Vision adopted an explicitly ‘ambidextrous’ structure to managing these innovations. They allowed each unit to develop specific competencies, incentives, process and so on, necessary used to manage the innovation business, even though they are different from those that support today’s core business. Rather than ‘spinning-out’ an innovation, ambidextrous units continue to leverage the organizational assets and capabilities that are not available to an independent business, while at the same time being differentiated where it matters. .

1. **Build an Explore/Exploit portfolio** – by clarifying the model for commercializing innovation across business units you can frequently speed decision-making and ensure that new opportunities receive the appropriate level of support. This would involve delineating between core businesses, focused on near-term profitability, investments with the opportunity to scale into future revenue streams and longer term experiments.
2. **Own the portfolio at the senior team level** – our research shows that the senior team plays a critical role in managing resource trade-offs across the portfolio and in providing the integrating rationale for decisions that can appear contradictory. Successfully managing an innovation portfolio requires a clear consensus among the senior team about the unit’s strategy, relentless communication of this strategy, and a common-fate incentive system.
3. **Identify the barriers to execute an explore strategy** – adopt an analytical approach to working through the organizational issues related to commercializing innovation. Change Logic’s Strategy Execution process provides a proven methodology for enabling organizations to have an honest conversation about the root causes inhibiting innovation.

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