

Giving Technology Strategic Direction

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The first question that must cross the reader's mind is why I chose the word "technology" in the title. Why wouldn't the title be "Giving R&D Strategic Direction", or alternatively "Giving Product Creation Processes Strategic Direction", or even at the extreme "Giving Innovation Strategic Direction"?

All would of course be possible, but the reader will quickly understand from the forthcoming text that a focus on R&D or the product creation process may be too narrow, and that a focus on innovation of all forms may be too broad. Trying to find a reasonable middle ground, I have therefore chosen technology's relationship to strategy as the focus.

This Perspective should therefore be of primary concern to those executives responsible for technology as a whole, in particular the new breed of chief technology officer (CTOs). But it is also intended for R&D executives, new product development executives (or "process owners"), manufacturing executives, logistics and supply chain executives and IT executives. It will, of course, interest general

management and senior corporate management, for they are the ones who ultimately must link strategy and technology together in the firm's value creation process.

While everybody seems to agree that technology and strategy must be linked, I have found little evidence that either technical management or general management have a very clear idea of what this really entails, what specific factors to consider, and how to make the linkages in practice. To close this gap is the intent of this Perspective.

I shall highlight four strategic elements, which should be considered in every case where technology investments, i.e. product, process, or information technology investments, are contemplated.

This can be achieved by asking four key questions:

1. Which strategic pathways do we want to move in, and how will technology contribute to taking us there?
2. Which new “strategic drivers” should these investments be designed to satisfy, and what are the consequences for various levels and players in our business system?
3. With what innovative intent are we making these investments?
4. With which level of commitment should these investments be undertaken?

Which Strategic Pathways?

We can see from figure 1, where contours have been drawn to represent lines of customer indifference between various combinations of perceived value and delivered cost, that there are many ways, beyond the two classical strategies of product and process innovation, to improve customer value. The only prerequisite is that overall there is a net movement to a higher contour. Some practical examples serve to illustrate the point:

Firstdirect Branchless Bank entered the UK retail banking market in the early 90’s with a high service, telephone banking approach which both increased perceived value (open 24 hours per day, 365 days per year) and lowered delivered costs (as a result of low cost, centralized physical facilities in suburban Leeds,

and by turning virtually all the fixed salary costs of the traditional high street bank into variable costs, using part-time employees).

Hewlett Packard, by contrast, increased overall customer value in one specific segment of the market for ultrasound imaging diagnostic equipment, by adjusting product features and price to the needs of the private doctor’s office – complementing with this move, their traditional high end, high price approach to the large teaching and research hospital segment.

SKF in the late 80’s provides a third contrasting example. By paying specific attention to the service requirements of the vehicle and industrial machinery aftermarkets, they were actually able to increase customer perceived value enough to more than offset their substantial increases in delivered costs. Aftermarket customers were more than willing to pay the premium needed to cover the costs of running their new “service factories”, in order to achieve what SKF dubbed “trouble-free operations”.

All three examples demonstrate that technology investments need to be made with clear strategic pathways in mind. Firstdirect used IT to provide a wide range of new convenient customer services; HP refocused its new product development to position itself at the upper end of the “lower end” private doctors’ office segment, and SKF used new logistics system technologies (not ball bearing technology) to radically improve the aftermarket offering.

Which Drivers – and With What Business System Consequences?

Simply to recognize movements within the perceived value-delivered cost map leaves open the question of the specific customer dimensions on which new value is to be achieved and leverage points in the business system for achieving this. To use one of our previous examples; Firstdirect raised customer perceived value by extending opening hours, by providing skilled telephone interlocutors, by re-engineering “back office” functions to make them immediately available to call-in customers, and by using IT technology to provide instant account data. These new value drivers represented a sharp change from the value drivers of the traditional high street bank – where location, counter service and physical security, remained paramount.

Behind value drivers lie the specific customer benefits, segment-by-segment, which are being sought. At the very root of new customer value creation, therefore, is usually new creative customer segmentation. It is this segmentation that determines which drivers have to be smothered with attention, and in turn how the business system has to be configured (or reconfigured) to achieve these results. For Firstdirect, the implicit segmentation was to concentrate on younger, affluent, career-oriented customers who were at ease with electronic communication, and too busy to access traditional banks during traditional opening hours. Further, on the product dimension, Firstdirect concentrated initially on relatively simple transactions (deposit and withdrawal, transfers, payments etc.) which were easy to conduct by telephone. HP and SKF, too, creatively resegmented their markets: HP giving special attention to the upper end of a lower end segment (i.e. the private doctor’s office), while SKF gave new and special attention to the aftermarket business.

Once the segmentation scheme is established, and once choices have been made about target customer segments, all elements of the marketing and business mix, not only product, as well as the marketing and business mix of upstream and downstream supply chain partners, have to be brought into alignment. Technology investments have to be made to support all these requirements, not just to support product or process development at the company’s own level within its business system.

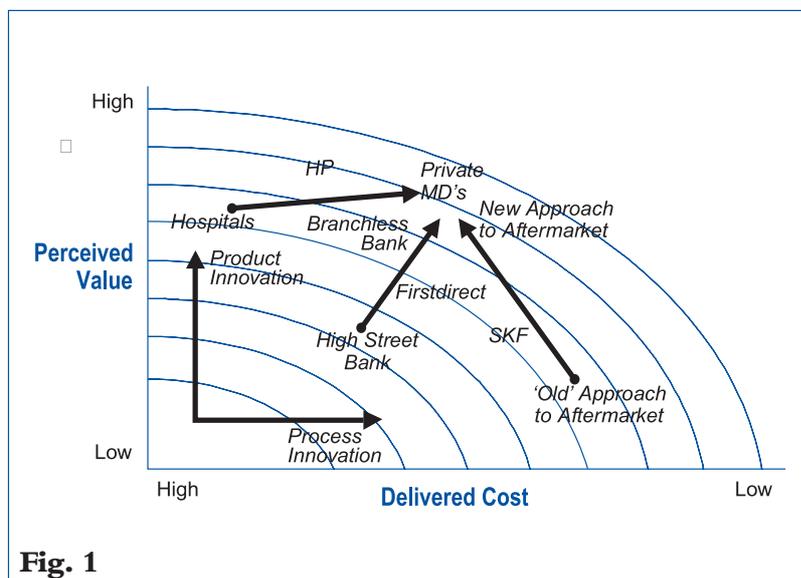


Fig. 1

With What Innovative Intent?

We can identify four clearly different strategic approaches – which stand quite separately from the choice of strategic pathway and drivers described above. The matrix in figure 2 below shows the key differences between these four strategic approaches.

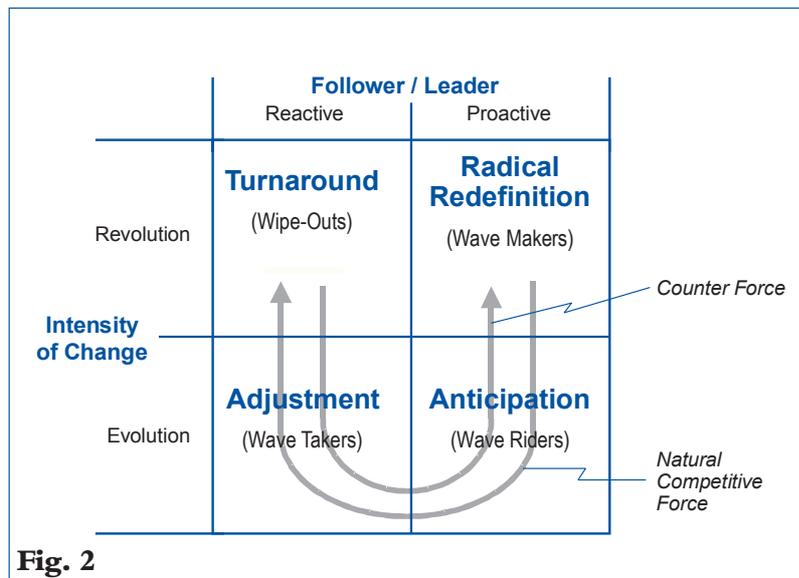


Fig. 2

Wave Makers are those companies who shape the future for others. They are the pioneers who set off in a new direction – often shifting the basis of industry competition from convergence to divergence, or vice versa. Sometimes they also may pioneer by putting emphasis on quite new dimensions of customer value – for example Swatch made new waves by emphasizing the fashion, disposability, and impulse buying dimensions of watches in an industry which had traditionally been oriented to the watch as a piece of jewelry, and a carefully planned purchase. Firstdirect, Amazon.com, IKEA, Federal Express and Virgin are all wave makers – as was Polaroid with the introduction of instant photography forty years earlier. They all create new waves which threaten to leave other competitors high and dry, unless the latter are smart enough to forecast early the size and direction of these new waves, and agile enough to climb on board.

Wave Riders do not always themselves initiate fundamental changes in the value creation topography, as the pioneers do, but they are extremely successful at identifying the new waves that form on their

competitive horizons, and they are extremely agile at getting up on these waves (like good surf-riders), and at riding the waves to the shore for their competitive advantage and profit. They are often less proactive than the pioneers and more evolutionary than revolutionary in their strategic adaptation to change. But they stay ahead of competition by successfully

and in time identifying and exploiting new product opportunities. Nestlé is such a company. Not always way out in front in terms of revolutionary innovation (like they were with soluble coffee and now appear to be with LC1 yogurt), they innovate across a wide front and can seldom be accused of being far behind.

Wave Takers are those companies which meet major and sometimes unexpected and unforeseen changes in their markets, that require major restructuring and reformulation of business strategies to overcome successfully. IBM was in this situation in the late 80's, not reacting rapidly enough to the fundamental shift in the data processing market from large centralized mainframes to decentralized processing and PC's. Caterpillar approached a similar situation, also in the 80's, faced with the shift from large, superbly (and maybe overly) engineered earth moving equipment for very large infrastructure projects, to a new market characterized by the smaller, lower-priced machines needed in smaller scale municipal work projects and local construction.

Wipe-Outs are those companies which fail to adjust until it is almost, or completely, too late. These companies get overtaken by market shifts, and like their surfboard analogs, end up under the waves struggling to survive. In many cases, their only recourse is massive cost cutting and downsizing to staunch the bleeding and red ink. These so-called "turnaround" situations often occur because of earlier strategic failures to recognize the formation of new important strategic waves which eventually engulf them, and/or a lack of agility even when waves are recognized, to get up on them and to ride them into the shore.

We can recapitulate these four fundamentally different strategic approaches, by saying that strategic leadership is about forcing the strategic priorities in an anticlockwise direction around the matrix; companies being forced around the matrix in the reverse direction by their competitors, often evidence lack of strategic leadership. Failure to recognize and to exploit new strategic waves inevitably drives the company back towards the top-left cell, as market and competitive forces take over. Technology investments must be made to support this anti-clockwise intent with a clear idea of which quadrant we are currently operating in, where competitive forces are driving us, and where we would like to end up.

With Which Commitment?

The role of the line of business or business unit in the corporate portfolio is the last of the four key elements which should give strategic direction to technology investment. The familiar four-quadrant chart, which categorizes businesses as "stars", "cash cows", "question marks", or "dogs", provides as good as any basis for thinking about the strategic and financial commitment involved.

Technology investments must be made with this categorization or something similar in mind, in order to assess whether the scale of technological investment corresponds appropriately to the scale of overall strategic investment. I shall not belabor this point here, since the strategic literature on the subject is already very complete, even if the presumption that technology investments should obey this overall strategic drum, have been largely overlooked.

Conclusions for Technology Managers and General Management

As the old saying goes, “if you don’t know where you are going, any road will take you there”. So it is with technology investments and their management. This paper suggests that, to link the two, the following questions must be asked:

1. What strategic pathway do we want to be on? This implies a deep understanding of the topography of perceived value/delivered cost in our industry, how the topography is changing, and why.
2. Which new drivers will be implied by this strategic pathway, and what elements of our business system will also have to be reconfigured
3. Are we trying to make waves, ride waves, or merely trying to avoid getting engulfed by the waves created by others? Where are we now, and how can technology help us move in the right direction?
4. Is our technology commitment, in terms of scale and financial involvement, consistent with the overall strategic commitment that we wish to make to this business?

to recognize these new drivers? In particular, technology managers must be aware that, in many cases, non-technology drivers may come to the fore at a certain moment in the evolution of technology-based industry. Technology must therefore be put behind these new drivers, at appropriate levels in the business system. Segmentation is key.

While R&D heads, innovation owners, supply chain managers, and CTOs do not have to be strategists, they certainly have to have a broad understanding of these strategic issues, and to have specific answers to each before embarking on new technology investments aimed at creating new value for customers. Even if “technology push” leads the competitive charge, to put technological innovation ahead of strategy is usually to put the cart before the horse.

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