

Market-Driven Technology Roadmapping

The ROI of Upstream Collaboration: Optimized R&D Investments, Accelerated Time-to-Market, & Differentiated, Market-Leading Solutions

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Abstract

An organization's *technology* and *business* functions don't always see eye-to-eye. When they aren't in sync around the high priority, emerging needs of consumers/customers, R&D becomes hugely expensive. Significant investment dollars are wasted, and new products miss the mark and fail. To avoid this, it is imperative that the technology and business functions become aligned *upstream* in the innovation process – well before the idea generation step of the so-called “fuzzy front-end.” The goal of Market-Driven Technology Roadmapping is to potentially save millions of R&D investment dollars, to accelerate time-to-market, and to increase the success rate of consumer-relevant, differentiated products that drive long-term growth. This paper describes a collaboration-based methodology for aligning business efforts with technology investments. This is done by creating an upfront, shared understanding around marketplace priorities, and by creating explicit agreements among the organization's various stakeholders.

The Technology - Business Disconnect

An organization's *technology* and *business* functions don't always see eye-to-eye. In many organizations, different functions operate in silos and don't talk with each other often enough – and even when they do, it can be hard to hold a civil dialog. When technology and business functions aren't in sync, R&D becomes hugely expensive. Significant investment dollars are wasted, and new products miss the mark and fail.

The stakeholders on the business side may consist of several groups: brand owners, market research, consumer researchers, marketing, sales, corporate strategy, package design, and product development, among others. In a conversation about business priorities, each group may try to justify its existence and feel the need to compete for scarce resources. Often, each group has a different agenda – and incompatible metrics conspire in a way that makes it hard to find common ground. What's more, complex matrix-type relationships may exist across different geographic regions. As such, decision-making processes, responsibilities and resource allocations are often poorly defined and messy.

Oftentimes, the high priority activities of the technology and the business sides are out-of-step; sometimes, especially in technology--driven firms, proud R&D teams share exciting technology advancements and new product ideas with their business colleagues in the hope that there will be a viable market for them. At the same time, business teams sometimes share compelling product concepts with R&D and ask how quickly they can be developed – only to learn that there has been little technology effort put against that area. The silo-based operating model can lead to mismatched activities, poor communications, disconnected agendas, lack of shared vision, and a less-than-collaborative relationship that's sometimes characterized by animosity.

No organization has bottomless R&D funding or marketing budgets. To avoid these expensive disconnects, it's critical that the technology and business functions become aligned far upstream in the so-called “fuzzy front-end” of the innovation process – well before the “idea generation” step.

Many people enjoy the “brainstorming” process, but it's shocking that organizations are often eager to jump into idea generation – before they have really stepped back strategically, to become clear on the high priority needs in the marketplace.

The folks in the white lab coats may be working on the wrong things. Pouring years and years of R&D dollars into the wrong things gets very expensive.

Without this kind of upfront alignment there is no shared understanding of current and emerging opportunities in the marketplace – and their relative priorities. In the absence of this common ground, R&D may be pursuing technology workstreams that are inconsistent with marketplace priorities. The folks in the white lab coats may be working on the wrong things. Pouring years and years of R&D dollars into the wrong things gets very expensive.

Many organizations believe they are doing the necessary upfront work – but in our experience that’s not always so. In many cases, the process of “portfolio planning” is relied upon as a central element in defining growth strategy. Unfortunately, this process typically involves a small, homogenous team of business planners who devote several months to analysing the latest consumer research, reviewing competitive activity, and identifying gaps in the product portfolio. While it’s definitely important to start with the marketplace, these teams often work in a vacuum, focusing on the short-term, disconnected from R&D and other key functions, and then deliver “the answer” to senior leadership.

Without the broad-based collaboration and engagement of the various internal stakeholders (e.g., brand owners, consumer researchers, market research, marketing, sales, corporate strategy, product development, global regions, etc.), this “portfolio planning” process often yields lacklustre thinking that misses the point – and then requires each function to spend precious time justifying its current projects in order to protect resources and budgets.

The Alternative: Collaborative Strategy Development

To avoid this uninspired and limiting outcome, it is imperative that technology and business stakeholders formally and deliberately engage in a collaborative dialog that creates alignment – upstream.

If these stakeholders do connect in this way, they have the opportunity to create an externally-focused, holistic, “Market-Driven Technology Roadmap” that depicts the marketplace needs that the organization will concentrate on, and specifies what enabling technologies they will invest in. The value of this kind of holistic, strategic thinking is significant – an organization can: potentially save millions of R&D investment dollars; accelerate time-to-market; and increase the success rate of consumer-relevant, differentiated products that drive long-term growth.

In most organizations, upfront collaborative strategy development is often avoided because it’s so hard to do successfully. After all, these groups don’t speak the same language, and frequently have a tough time getting along, so why even bother trying to bring them into a room to thrash things out and to try to reach agreements?

Sometimes the notions of “collaboration” and “fostering buy-in” are dismissed as “soft and fuzzy”. We disagree. In our view “the soft stuff is actually the hard stuff”.

Fundamental Upstream Questions

Well before getting into “brainstorming”, there are several topics that must be addressed upfront. These include:

1. What should be our scope – should we include all of our business units, or just a subset of them?
2. What are highest priority needs of our consumers or customers – both today and emerging?
3. How can we convert what we already know about our consumers and customers (our data) into actual, actionable insights around needs?
4. In addition to the usual market-focused perspective, how can we also take a “big picture” approach? For example, what are the emerging mega-trends (economic, demographic, competitive, sociological, regulatory, technology, etc.), that will shape the future of our industry and our organization, and potentially provide us with entirely new opportunities?

5. How can we make our R&D investments more cost-effective? How can we be sure our “folks in the white lab coats” are working on the right things?
6. What “highly leverageable technologies” do we possess that will allow us to derive the greatest value from our R&D investments – in a way that directly and efficiently supports these marketplace priorities?
7. What new technology programs must we now begin – and what existing technology programs must we stop working on in order to free up resources?
8. What are our major knowledge or competency gaps (both technology and market/insights/business) – and what is our plan for addressing them?

Complexity, Conflicting Agendas & Tough Discussions

The deliverable from this kind of “Market-Driven Technology Roadmapping” process appears at first to be straightforward: it depicts a portfolio of the most promising marketplace opportunities, and maps out the technologies required to enable them.

It takes several deep-dive discussions in order to create this “deliverable”, and the list of activities and artefacts created along the way is both impressive and daunting: create agreement around common goals among stakeholder groups; synthesize our existing marketplace insights; identify emerging opportunities; prioritize the highest priority marketplace needs; uncover distinctive areas of competitive differentiation; develop integrated sets of marching orders; and make tough trade-off decisions – both on the business and the technology side.

While the actual Technology Roadmap itself is the key “deliverable”, the alignment-building approach used to create it can be extremely challenging. These process challenges include: helping stakeholders gain shared understanding around complex content from other domains; managing the dynamics of multiple different stakeholder agendas, making sure that voices are heard, appeasing egos and working with strong personalities, and making tough trade-offs around priorities and resource allocation.

Below are some of the typical tough discussions and trade-offs that need to be addressed through the process:

Regional BU’s: “In our region we have some unique, highly specific consumer needs. If these are not funded, our business will collapse.”

Brand owners: “We have to take a portfolio approach: we need to support our core brands for the short term and we need to invest in these new brands for the longer term – if we don’t do both it’s suicide.”

Sales: “We don’t care too much about the longer-term – we have to hit our numbers.”

R&D: “We’re already heavily invested in exploring a particular technology. Are we now supposed to pull the plug on that?”

With so much complexity in terms of content and process management, it’s not surprising that organizations are reluctant to tackle it. And yet, to avoid it is completely myopic, considering how much is at stake.

Creating a “Market-Driven Technology Roadmap” is a multi-step process. At a high level it is described below:

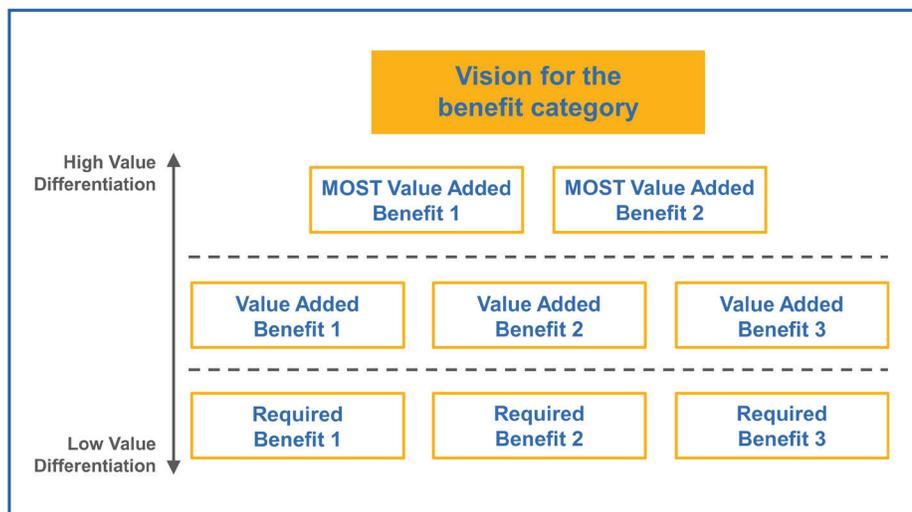
Step One: Gain Sponsorship and Bring Key Stakeholders To The Table

It is critical to secure executive-level sponsorship for this endeavor – both on the business and technology side.

Additionally, representatives from all the key functions should be part of the process. These functions typically include: R&D, brand owners, consumer researchers, market research, marketing, sales, corporate strategy, packaging, product development, geographic regions, etc. Without full participation, there are likely to be endless “water cooler conversations” – outside the formal process – which may undermine all the hard work. It’s far more effective to tackle the tough discussions in the room, in a safe, carefully managed environment.

Step Two: Understand Marketplace Needs

The starting point in building a “Market-Driven Technology Roadmap” is to look closely at the marketplace. This is done by identifying and prioritizing consumer (and/or customer) needs/benefits – both those today and those that may emerge in the future. By distinguishing between lower-level needs/benefits that are “expected” (i.e. hygiene factors), in the consumer’s mind and higher-priority ones that truly “differentiate”, it becomes possible to determine which product, service or business model attributes have the highest probability of creating competitive advantage.



Many organizations are uncomfortable making decisions based on imperfect information. There will always be gaps in knowledge about the consumer – which often leads to a fear of moving forward. Frequently there are nervous calls to “gather more data,” or “do more research” which can postpone (or kill) the process of strategic decision-making – or worse, allow more proactive competitors to get to market first

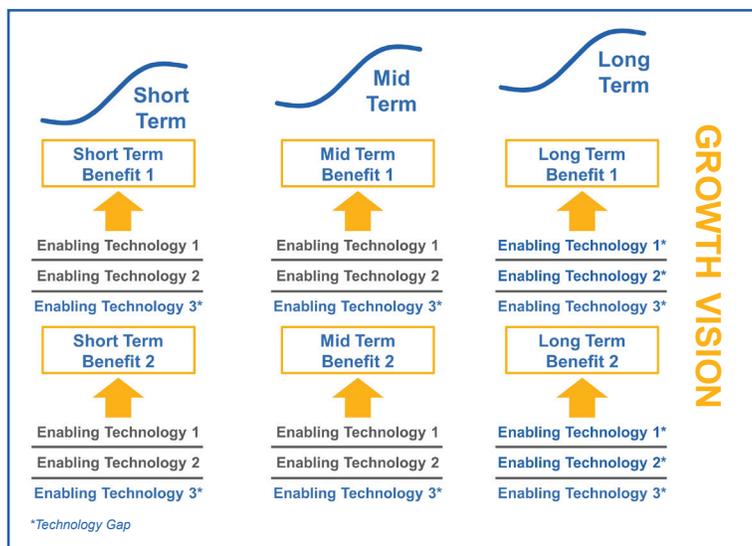
The good news is that many firms actually underestimate what they know about the market. This process takes a fast track approach – leveraging what is known (both formal and tacit knowledge), accepting that gaps exist, noting those gaps, and capturing the actions to fill them as necessary.

The key is to move forward quickly with whatever information is available, and to work through a process of categorizing and prioritizing the marketplace needs (benefits) that are most important. This gets difficult to manage when everyone in the room has an opinion and when functional and/or regional interests are not in sync. But going through the tough discussions together, and agreeing on the relative priorities of marketplace needs – across all the stakeholders groups – is the foundation of this process, from which everything else follows.

Step Three: Identify the Enabling Technologies

Once the prioritized marketplace needs (benefits) have been identified, the R&D participants can really get to work – beginning to map the technologies required to deliver against those needs (using the currently available technologies, and noting those that the organization does not possess).

In this step, the organization’s technology capabilities and gaps become explicit.



This process step usually reveals that there are several alternative technology options to enable a given benefit. This can become complex, but “the magical act of writing it down” within a customized framework is a clear approach to depicting the options. This framework facilitates a healthy dialog on how to best use various technologies for delivering on the benefits – over the short-, mid- and longer terms.

Deliverables

The tangible deliverables/artifacts created in a Market-Driven Technology Roadmapping process typically include:

- A series of integrated ‘benefit maps’ showing the relative importance of the various marketplace needs
- A ‘competitive landscape map’ that show which competitors are currently delivering against various needs – and where the potential opportunities lie
- A series of ‘opportunity risk-reward maps’ that depict the leading opportunities for the organization, taking into consideration: the high priority marketplace needs, emerging trends, the competitive landscape, and the organization’s technology readiness
- A prioritized list of key business and technology gaps (e.g., specific gaps in insights into the needs of consumers and/or customers; gaps in specific technology competencies)
- A ‘Start-Continue-Stop’ Action Plan both on the “business” and “technology” side
- A short-, mid-, and long-term Roadmap that provides a holistic view of the highest-priority marketplace needs (benefits) that will be pursued over time, and the enabling technologies that will be used to deliver against these benefits
- Optionally, high level resource requirements and technology partnership action plans can also be developed

What's Next?

Once this 'upstream' technology mapping has been completed, the organization can begin the process of generating specific product/service ideas around need/benefit platforms that have been agreed to.

Impact on Organizational Culture

In addition to these actual hard deliverables/ artifacts, there is huge value in the "soft benefits" of dramatically increased collaboration across silos.

In fact, organizations that embrace strategic, cross-functional, alignment-building practices such as this Market-Driven Technology Roadmapping process can begin to reinvent their overall innovation culture. These collaborative methodologies are game-changing for some organizations, since they force cross-functional interactions across functional silos, and require the kind of strategic, integrated thinking that characterizes truly innovative work environments.

Success Factors

The key success factors for the Market-Driven Technology Roadmapping process include:

Participation:

- Insist on senior-level sponsorship from all the key functional groups
- Appoint a cross-functional team composed of the right individuals with complementary content knowledge – to ensure that all key stakeholder groups have a voice

The role of content:

- Begin with the market – looking at current and emerging "consumer/customer needs"
- Ground everything in whatever data is available, and explicitly capture knowledge gaps along the way
- As much as possible, quantify qualitative data to ensure the robust evaluation of emerging opportunities
- Gain insight into opportunities for differentiation by understanding the competitive landscape
- View technology as the enabler
- Map specific technologies to high-priority benefits while seeking opportunities to gain efficiencies by leveraging technology platforms

Process norms:

- Ensure participants' committed participation throughout the process
- Establish a norm of rapid decision making and iterative thinking
- Maintain a running list of actions to keep the process moving forward
- Deliver across multiple time frames – from strategic game-changing opportunities to tactical actions that drive short-term results

About InnovationPoint

InnovationPoint is a boutique innovation consulting firm focused on the practice of Strategic Innovation. We blend non-traditional and conventional consulting methodologies to deliver business breakthroughs that grow the topline – through opportunity identification, new business creation, strategy development and new product, service and category innovation. Our clients include Visa, Disney, Cisco, NBCUniversal, Colgate-Palmolive, Ascension Health, Hershey's, Red Bull, Frito-Lay, PepsiCo, Philips, Medtronic and other market leaders.