A New Enterprise Growth System – Creating a Nexus of Strategy + R&D + Innovation

"The most important invention that will come out of the corporate research lab in the future will be the corporation itself."
– John Seeley Brown, co-chairman Deloitte Center for the Edge

Abstract

Today's large corporate enterprise treats strategy, R&D, and innovation as separate and distinct functions – worthy of specialized teams, segmented funding, reporting structures and operational charters. This is starting to change. These three functions, as well as the many other ancillary activities (e.g. digital transformation, new product development, business development, design, advanced marketing, corporate venture capital, startup collaboration, etc.) together make up an enterprise's creative transformation efforts. These activities have as a common objective the realization of an enterprise's future. Many large enterprises are reimagining their system for creative transformation in a more holistic and integrated way. The early signs of this change are becoming visible as this recently completed study revealed.

A study was undertaken to examine how large enterprises do R&D and innovation. The focus of the study was on internal R&D and innovation mechanisms at the corporate level. What make some successful and others so problematic? When and why should a large enterprise have corporate R&D and innovation functions? How should they be organized and operate? How should they relate to and interact with other corporate functions and businesses? How are these functions evolving? External mechanisms for creative transformation such as M&A, startup collaboration, Corporate Venture Capital etc., are not covered except in the general sense that strategy needs to play a key role in directing both internal and external efforts.

What became clear during the course of the research is that today's large enterprise is rapidly evolving to create a system in which corporate strategy, R&D and innovation all work together and in harmony to drive the creative transformation efforts of a company.

Principles of Creative Transformation

The term 'creative transformation' is being used here to encompass all the activities a company undertakes to create new and valuable artifacts. These include new products, services, business models, etc. The term is used in juxtaposition to the **operational excellence** activities of a company that consume most of a company's resources and attention.

Creative transformation activities typically consume between 5 and 20% of a company's resources and attention depending on the type of company and its strategy. These include activities such as new product development, design, business development, M&A, advanced marketing, corporate venture capital, startup collaboration, etc. All these functions, and others, contribute to what can be called the enterprise's creative transformation capability – continuously generating new sources of differentiating value and growth.

The following principles were synthesized from the interviews conducted. These are principles that multiple interviewees discussed, often using different terms and their own descriptions. The fact that there is not a consistent, widely adopted vocabulary for these processes and activities is indicative of the early and nascent nature of the concepts being articulated. Different people describe fundamentally similar situations and processes using different terms. The eight categories that multiple interviewees discussed in depth are:

- **People** – the need for different types of people to fulfill various roles (not all of which are traditional roles), and the motivations and incentives that drive people to excel
- **Organization & Operation** – How R&D and innovation processes are structured and work at the BU and the corporate level.
- **Transition** – How disruptive and transformational new developments are transferred into businesses, either existing or new. The issues involved and how to overcome them
- **Domains** – How strategy gets translated into practice. The establishment of guardrails that give R&D and innovation both guidance and freedom to explore and invent.
- **Portfolio & Governance** – The right way to manage multiple R&D and innovation initiatives. Who decides what and how decisions are made under uncertainty and budgetary constraints.
- **Digital Transformation** – How digital is permeating every aspect of a company's operations and their creative transformation through R&D and innovation
- **Metrics & Stories** – How to measure R&D and innovation impact and how to tell the right story about the impact. Difficulties in measuring and some suggested solutions.
- **Executive Buy-in** – The importance of having C-suite support and ways to get alignment and support of the businesses for corporate run R&D and innovation initiatives.

People:

Everyone interviewed emphasized the people part of the equation. The skills, mindset and experience must fit the role they play in the company's system of creative transformation. The roles mentioned include researcher, engineer, designer, business developer, advanced marketer, corporate venture capitalist, startup collaborator, strategist, entrepreneur and innovator. The roles are very different and require different skills and mindsets and often they have very different durations. For example, R&D people can stay in their R&D role for many years and work on long-term projects, but business development people typically stay in that position for a couple years at most. This makes it difficult for business development to get in sync with R&D efforts in planning for businesses that take longer to emerge.

Companies often struggle to assign the right people to the right role and they often rotate people into and out of their roles frequently with no clearly defined career path. Certain roles, such as researcher or marketing, are well established within a large company. But even in these roles there was a dichotomy between those who wanted their R&D people to develop more of an entrepreneurial outlook mindset and those who wanted to 'let the researchers do research' and find others to work on the business side of the equation.

In the companies studied, the role of the innovator encompassed a number of responsibilities, competencies and activities. Many companies have advanced marketing positions, others have new business development positions, still others have entrepreneurs in residence. Whatever the positions titles or roles, there is a real need to formalize and legitimize these positions within the organization.

Organization and Operation

The decision of how to distribute R&D and innovation resources throughout the enterprise is critical. The primary dimensions are:

- **The percentage of the enterprise's total R&D and innovation resource[1] allocated to the BUs relative to the corporate level.** The allocation of R&D and innovation resources to the corporate level ranges from 0% to 20%. The companies we interviewed were in the 8 – 10% range.
- **The focus of the BU and corporate teams**. The consensus is that R&D and innovation teams within the BUs should (with very good reason) focus on applied research and sustaining innovations that are relatively close to the core business of the BU. R&D and innovation teams at the central corporate level should focus on research that benefits more than one of the company's business units and longer term strategic innovations that are farther from the core businesses the enterprise is engaged in.

The distribution of R&D responsibilities depends on the nature of the enterprise. Some companies (e.g. DuPont) are loosely coupled federations of business units that, by design, have little corporate infrastructure and little or no corporate R&D and innovation resources (some researchers [6] believe this is a strategic mistake).

Some determinants of the importance of corporate R&D, and the amount of resources spent on corporate R&D and innovation, are:

- Multiple BUs can benefit from common technology platforms
- There is a long-term strategy and goals – projects that take longer than a typical BU timeframe can be undertaken
- Domains and technologies that are more uncertain and experimental can be explored
- R&D can address the entire value chain.

In general, BUs undertake applied R&D and focus on sustaining innovations and the corporate entity does 'higher level' R&D (see next section) and strategic innovation. This arrangement, however, makes the 'transition' of strategic innovations from corporate to businesses extremely important and extremely problematic.

Transition:

The terms transition, transfer, handoff, launch and landing are all terms the people we interviewed used to refer to a very real and significant issue for central corporate R&D and innovation groups. All these terms refer to the process of moving a newly created innovation out of a central corporate group to stand on its own within an existing BU or as a new BU.

There are many aspects of this transition process that present problems for which there is no clear solution. Success seems to rely not just on internal organizational structures, but also on the personalities and mindsets of the people involved. How long to incubate something new or when to transition it to a business (or create a new business) or how to motivate a business to take on something new that is even

[1] Note that different companies spend widely varying amounts, as a % of revenue, on R&D and Innovation.

a little outside their core business? As one of the interviewees stated, “There is no valley of death, just a lack of a transition process.”

The key issue is an alignment of incentives. Operating BUs often do not have the right incentives to take on something that they feel may detract from other investments they could make to grow their existing business. The issues of scaling marketing, sales, support or manufacturing for something new that is now small and not yet proven requires a certain ‘leap of faith’.

Everyone interviewed discussed this problem in one aspect or another. A few had solutions that address at least part of the problem. Some of the most interesting ideas and approaches mentioned are:

1 - Keep transition metrics (what successfully transitioned) and report them to senior leadership.
2 - Track things for a while after they transition, how successful are they and what is being invested in their success.
3 - Transition occurs best when it is done between specific people, not functional groups. Identify the people who should be involved in the handoff and make sure they are fully involved over a period of time, not just at the point of handoff.
4 - Move R&D and Innovation people into the businesses during transition but keep their place open so they can come back when transition is working
5 - Make transition a specific function and responsibility of specific people within the innovation group and the BUs
6 - Pay the businesses for the first year of transition to reimburse them for the extra cost of taking on the new thing.

Domains:

To create value, R&D efforts need direction. That direction comes from above (strategy) and below (the jobs that products and services need to do). While applied R&D is critical to a company’s continuing creation of new offerings, there is another kind of R&D that is also important. It is a kind of R&D that is more than just applied but is not what has traditionally been called basic research. This type of R&D has been called ‘use-inspired basic research’, which is described in the next section. This is the type of research that is the legitimate purview of central corporate R&D efforts.

One question is how this type of corporate R&D is directed and focused and yet still given the freedom for exploration and invention that is necessary to create value. The solution seems to be to have clearly defined domains (also called arenas) that set the guiderails (focus and boundaries) that guide R&D activities and well as portfolio, platform, and project decisions. The principle is to have freedom to explore and invent within domains and restrictions outside the domains.

Domains (and their guardrails) are informed and defined by strategy and strategic intent. Strategy therefore is important to both R&D and Innovation functions as they invent new things and come up with and focus on new ideas. The problem many companies have is in describing and communicating these domains in ways that are actionable for R&D and Innovation individuals and teams.

Portfolio & Governance:

The companies with the most reliance on central corporate R&D and innovation have adopted a portfolio management system. This replaces a more traditional budget allocation process in which projects were hard to initiate and hard to kill. The budget allocation process took place on a yearly cycle and project

evaluation was often siloed within departments and functions. A good portfolio management process, with defined governance charters and responsibilities, overcomes these problems and is necessary to manage corporate R&D and innovation initiatives.

A successful portfolio management process requires a formal, agreed upon rigorous governance mandate with a written charter that is aligned with strategy. It is typically 'owned' by strategy and finance and run by the head of the innovation group. Portfolio reviews are held at least once a quarter and include the heads of the BUs as well as other senior executives. Decisions are made not just with respect to a specific project, but with respect to the portfolio as a whole. In this way, the portfolio management process becomes not just a means to decide on funding. It becomes a means of communicating and aligning all parts of the company around a future that is defined by strategy and represented by the collective whole of the portfolio efforts.

Digital Transformation:

Digital is permeating everything. Its primary effect is on operational excellence activities (e.g. Intelligent Process Automation - IPA). Software (and AI) is becoming ubiquitous in marketing, customer service, manufacturing operations, back-office functions, etc. These are the corporate functions for which the IT departments (and the Chief Information Officer) have often been responsible.

One of the interviewees stated, "Digital transformation is like the internet in the 1990s. At a certain point, it's just a way of doing business." It's clear that digital is on everyone's mind but sorting through the various ways that digital is being used and affecting today's enterprise is often confusing. Based on the interviews conducted, four distinct categories of digital transformation emerged:

1 - In operational excellence activities (e.g., IPA)
2 - In products and services an enterprise is delivering to its customers (e.g., smart products)
3 - In enhancing the customer experience surrounding the product or service
4 - In creative transformation activities (e.g., intelligent search)

All four categories deliver value to an enterprise and its customers, either directly or indirectly. But the categories differ significantly in the tools and services employed and in the current level of sophistication. Internal IT departments focus on #1 and it is the most well developed. Internal R&D and new partners focus on #2 and #3 and these are areas of intense focus. New startups and experiments are being tried for #4 and it is the most undeveloped, but has, perhaps, the most potential for significant impact on the creative transformation of new offerings in the long-term.

Metrics and Stories:

There is a real desire for meaningful metrics for R&D and innovation. Much has been written about R&D and Innovation metrics but what is most striking in the interviews conducted is that, while metrics are important, it is the stories that are told that seem to have the most effect. Several of the interviewees stressed the need to be able to tell stories to get others to understand and buy in to a specific vision of the future.

The one metric that seemed to have the most salience is tracking output – what was successfully transitioned, what happened post transition and how successful it is (e.g. customer reaction and

testimonials). Ironically, the most powerful motivators of perceived success seemed to be the stories that were told rather than the analytics. Process metrics (e.g. how many ideas generated, how long in the pipeline, etc.) are not very compelling to senior leadership. Also, there was common agreement that certain financial measures that are commonly asked for (e.g. NPV, ROI, IRR, ROIC, etc.) were not very useful and often misleading.

Telling fact-based stories about compelling new offerings, not just when they are launched, but also along their journey to launch and long after they are launched, gets leaders interested and supportive of the efforts.

Executive Buy-In

Support by the most senior executives, from the CEO on down, is critical for the on-going success of a company's creative transformation efforts. But this group of people is also often the source of the most skepticism about the value created by R&D and strategic innovation. The problem is exacerbated by regular changes in executive leadership, not just at the CEO level, but with the heads of an enterprises operating business units. These people tend to be the source of much of the skepticism about (and often antagonism towards) corporate R&D and innovation groups. Many of the people interviewed told of the need to get the presidents of the existing business units and their senior executives them on-board.

The problem is made more difficult by some controversial research suggesting that investments in R&D often do not have a positive ROI (there is other research that suggests these analyses are flawed). No matter what side of the analytics one believes, the success of the corporate groups depends not just on a a spreadsheet analysis but also on the personal and emotional connections formed between the parties involved. The four elements behind the successful support of the corporate R&D and innovation efforts are:

1. Valid analysis of historical contributions of R&D and Innovation outcomes to business creation and growth. As mentioned, this analysis needs to be done carefully to get the proper ROI numbers and it is often hampered by the lack of data on the origins of existing businesses technologies and offerings
2. Compelling visions of futures of what could be given current and potential R&D and innovation efforts. These visions are better if the executives in question can experience (using a protocept etc.) at least an indication of an alternative future.
3. Personal connections through regular and frequent communication at all levels of the organization. This includes assigning people (on a temporary basis) from corporate groups into the businesses to assist with transitions or with specific problems (see next).
4. Assistance with immediate technical and business issues, especially ones that are affecting current large customers. It is important that corporate R&D and innovation avoid a 'not my job' attitude while, at the same time, not getting sucked into day-to-day operational issues. Supporting the businesses when they have an immediate problem that requires specialized expertise generates support for future projects when they are proposed.

The support of leadership across business cycles and leadership changes is critical for the survival and relevance of the corporate R&D and innovation groups. Time and attention must be paid to do this and it is well worth the investment.

"Research is the transformation of money into knowledge.
Innovation is the transformation of knowledge into money."
– Geoff Nicholson, 'Father of Post-it Notes' at 3M

The classic view of research first promoted by Vannevar Bush in the 1940's is that there are two types: basic and applied. When given this binary choice, today's enterprise will say that their company only does applied research. The reality is somewhat more nuanced.

The best description of the corporate R&D reality was put forth by Donald Stokes in his 1997 book "Pasteur's Quadrant'[1]. In this R&D model, there are two considerations that motivate R&D efforts as illustrated in the following diagram.

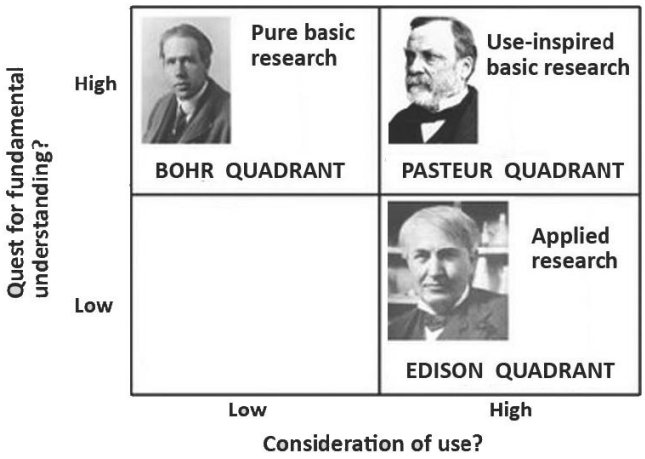

Figure 1 – Pasteur's Quadrant

While companies do allocate the vast majority of their R&D efforts in the Applied Research, Edison Quadrant, there is also, especially in corporate labs, a significant amount of Pasteur Quadrant R&D (almost no company does Bohr Quadrant R&D anymore).

This Pasteur Quadrant R&D is typically described as being cross-business, or platform focused and is the R&D that is directed and constrained by the company's strategic domains. In this model, a company will clearly define its strategic domains of interest and these domains will establish guardrails and provide focus for researchers. Within these guardrails, the domain *does not constrain research* and provides a great deal of freedom to explore, experiment and invent.

The characteristics of use-inspired basic research that is done by centralized corporate labs are:

- The results can be used by multiple businesses.
- It is platform-focused and has the potential to support many different offerings.
- It is long-term; it may take many years to achieve results.
- It is uncertain; achieving a desired outcome is high risk.
- It can be applied to the full value-chain, not just to the company's current place in the chain.

The structure of the company matters. Is it B2B, B2C or B2B2C? Is it a federation (conglomerate) of disparate businesses with no common purpose or is it a set of related businesses with synergistic platforms?

Technology Readiness Levels

A number of companies use Technology Readiness Level (TRL) to track and manage R&D initiatives (an alternative to the TRL that applies to innovation is the Opportunity Readiness Level -ORL). The TRL defines 9 levels which can be divided into three 'buckets' (the dividing lines between these buckets are arbitrary). Levels 1 to 3 are very early levels where a new technology is just being invented and its feasibility is being characterized. Levels 4 to 6 or 7 are the 'incubation' levels where the technology is being tested and proven in increasingly rigorous customer-facing offerings. Levels 7 to 9 are launch and scaling levels where the technology is being made suitable for widescale manufacturing and reliable and safe use.

To quote one of the interviewees:

> *There's all these ways that companies invest in "innovation" And they do it in a very disjointed way without really knowing what it means for them strategically as a company, because they've always invested that way.*
>
> *If you're investing in traditional R&D activities (only) at a TRL of about seven or eight, then the best you can be as either a fast follower, or a fast loser, and you will only ever do incremental, You can never really ever do "disruptive" if you're only investing at a TRL of seven or eight.*
>
> *If you invest in what's called the innovation valley of death, from TRL three or four to seven, or eight, and you have internal and external incubators, you can be in the startup or corporate VC mode. There's opportunities and benefits and risks associated with this.*
>
> *if you're way down in the one to three range of the TRL, you're in academic mode.*
>
> *For full spectrum innovation to be as impactful as it possibly can, you need to invest in all three TRL ranges (1-3, 4-6, 7-9) both internally and externally. I have this 90-9-1% rule. If you take your overall R&D budget, 90% of it should go to your traditional R&D (mostly D at TRL level 7-9), about 9% should go to what people call applied R&D or incubation activities (TRL level 4-7), and about 1% should go to fundamental research (TRL level 1-3).*

Surprisingly, many companies do not use the TRL or something equivalent (note that stages in a stage-gate process are not the same as the TRL levels). The TRL (or alternatively the ORL) when used as one of the R&D and Innovation management tools, is, as the quote above illustrates, one way to help strategically manage a portfolio of R&D and innovation initiatives.

Value Chain/Network

Corporate R&D and innovation needs to be involved across the entire value chain. As two of the interviewees stated:

- *"R&D sits above or below the business value chain and is connected to every part of it."*

- *"Innovation is very much a full value chain sport."*

In other words, an objective of R&D and innovation efforts is to invent and innovate anywhere within the enterprise's entire value creation ecosystem. Sometimes this means vertical and horizontal value chain integration. Sometimes it means inventing and innovating in collaboration with suppliers and channel partners.

Focusing R&D and innovation on the entire business ecosystem perspective requires business model innovation capabilities.

Funding

The funding of corporate R&D and innovation takes various forms but almost always involves a combination of protected corporate funding and funding by the business units. Since money is such a powerful incentive, funding mechanisms tend to be highly contentious. The best incentive structures are ones that balance the tension between the BUs and the central corporate entities (see Dance of the Corporate Innovators for a more in-depth discussion)

- Corporate R&D and innovation must support initiatives the BUs want but that are outside of their risk and/or time horizons
- Corporate R&D and innovation must initiate projects that the BU's may want in the future but that they are unsure of (or openly antagonistic to) today

Managing this tension requires more than just the right funding structure, it also requires C-level attention and personal relationships between the corporate entities and the heads of the BUs. In addition, a strong and clear definition of the appropriate R&D and Innovation guardrails defined by strategic domains helps internal communication and decision making regarding these funding issues.

A New Strategy + R&D Nexus + Innovation

A universal theme echoed by all interviewed individuals is that tightly aligned and integrated strategy, innovation and R&D efforts are critical if a company is to be successful creating innovations that stretch the boundaries of their current businesses (i.e. strategic innovations). The most successful enterprises have these three functions work as mutually reinforcing pillars. If they are disconnected or, even worse, in conflict, bad things happen.

Call this new integration of Strategy, R&D and Innovation the 'Growth Transformation' (GT) system. It is what drives an enterprise's creative engine that is the source of future growth. If the Growth Transformation system is functionally and structurally segmented and isolated, as it is today in many organizations, the alignment, interfaces and handoffs that are required between it and the businesses create friction that is hard to overcome.

In contrast, an integrated and mutually reinforcing GT system – with its subsidiary functions of digital transformation, new product development, business development, engineering, M&A, advanced marketing, corporate venture capital and startup collaboration – creates motivational alignment that enhances an enterprise's ability to create truly transformational new offerings and business models. The following diagram depicts such a GT system.

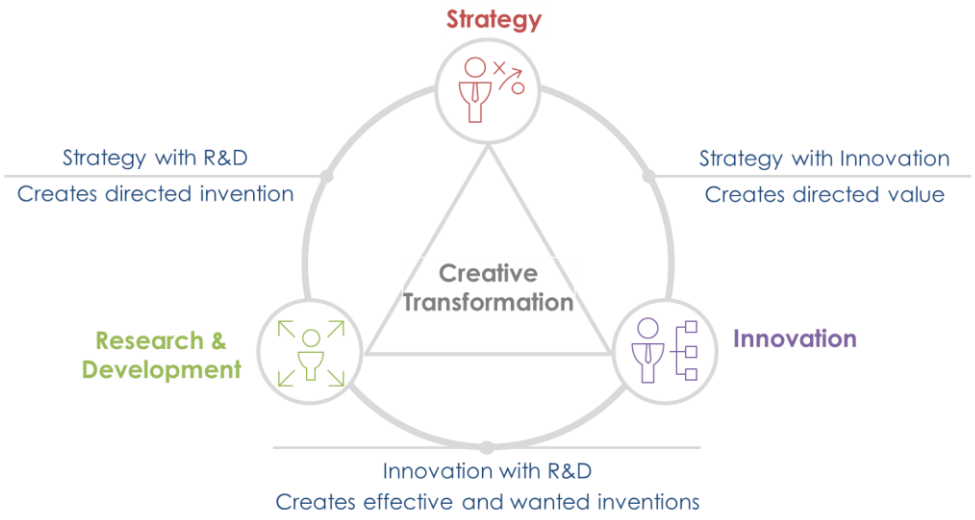

Figure 1 – Creative Transformation is Driven by the Growth Transformation System

This GT system nexus is comprised of the integration of the three pillars of Strategy, R&D and Innovation. Each interacts with the others in specific and mutually reinforcing ways.

At the top of the nexus stands Strategy. There is a near-term and a long-term aspect to strategy that is best addressed by a 'Dual-path' strategic process (see Dual-path Strategy for details). One of the paths of the dual-path strategy is the Today-for-Today path that directs near-term strategy. The other path is the Today-for Tomorrow path that is needed for loner-term, more uncertain and unpredictable futures.

While the GT system is designed to serve the needs of both paths of the dual path strategy, it is critical to the success of the today-for-tomorrow path that deals with longer-term futures that cannot be predicted.

Strategy + R&D

Strategy creates directed invention, the use-inspired kind of R&D mentioned above. Strategy accomplishes this by defining the future domains within which researchers have the freedom to experiment and invent. These domains set R&D guardrails while allowing freedom of exploration, experimentation, and invention. 'Domaining' is the process of connecting strategy to R&D by defining the focus areas and guardrails that researchers use as guides for their research into what is possible with new and emerging technologies.

Strategy + Innovation

Strategy creates directed value, the demand-inspired designs that people want. The same domains that R&D uses for technological exploration and new design possibilities, also focus and set guardrails for new demand exploration. Like R&D, there are two paths, both of which need to be followed. The near-term, sustaining innovation path is the province of existing businesses. Corporate innovation groups can help in certain situations, but they shouldn't be sucked into initiatives that the businesses should be doing themselves.

The longer-term, strategic innovation path is the province of corporate innovation (and R&D) teams. It is the job of the strategic innovation to connect R&D inspired design possibilities to the future ecosystem of demand.

Another job of the long-term, foresight-driven corporate innovation efforts is to provide strategy with in-depth insights and feedback that will influence strategy development. Insight needs to go both ways, from strategy to innovation and back.

R&D + Innovation

R&D creates effective inventions to satisfy future wants. R&D and Innovation depend on each other for effectiveness. Use-inspired research creates new possibilities to use in novel and potentially useful new artifacts. Innovation identifies future wants that inspire design creativity to create the desired forms of these artifacts.

R&D, internal or external, can be seen both as a precursor to innovation activities and as being directed by those same innovation activities (the use-inspired for of R&D). At the corporate level, R&D and Innovation support each other to create new artifacts that are both strategically relevant and that stretch the boundaries of the enterprise and cause disruption to others in the ecosystem,.

The Nexus

This new corporate Growth System requires a different set of processes, methods and tools than the company's operational excellence system. These processes, methods and tools are not nearly as well developed as they are for the operational excellence functions of a company. Companies are experimenting and testing how to build growth transformation systems that can achieve the ambitious results required by their stakeholders. Creating an effective nexus of strategy, R&D and innovation is one piece of the puzzle.

Conclusion

This focused study revealed several fundamental principles about the nature of how large enterprises should take on the job of creative transformation – the task of going beyond existing core businesses to create new value in the world and stave off disruption. The principles of people, organization & operation, transition, domains, portfolio & governance, digital, and metrics & stories, and executive buy-in are all important aspects of the endeavor.

Future oriented enterprises are realizing that these principles are best realized by creating a Growth Transformation System built around a nexus of Strategy + R&D + innovation. An effective Growth Transformation System can either be bought or built (or a combination of the two). A built GT system must be built at the corporate level and not within the businesses. Large companies need corporate level strategy, R&D and innovation resources to address futures that lie beyond the prediction horizon. These are the futures that operating businesses do not have the time, resources or mindset to deal with. But these are exactly the futures from within which disruption will happen. The disruption will either happen to the enterprise or be caused by the enterprise. Those enterprises with purpose-built GT system will be the disruptors.

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Appendix A – Research on R&D, Innovation and Strategy

A series of in-depth interviews, as well as a small amount of secondary research, was undertaken to understand how successful companies approach R&D today. Specifically, the study's objective was to understand the relationship of R&D to strategy and innovation activities within a company and how R&D efforts are organized and operate within large, successful enterprises.

The individuals interviewed (see Appendix) led strategy, R&D and innovation efforts within large, multi-national businesses. Their knowledge and experiences, both good and bad, reveal a set of organization design principles. These principles can be used to guide the integration of strategy, R&D and Innovation for the successful creative transformation efforts of an enterprise. The interviews also reveal many of the barriers and struggles that R&D, innovation and strategy leaders face within large enterprises that have an imperative to protect and grow their established businesses and also the desire to create transformational new growth.

The following questions and themes were used to guide the research conversations. The interview methodology used allows those being interviewed freedom to discuss things they felt were important. Often, when the interviewee went 'off-script', the most interesting insights were revealed.

Interview Topics and Guidelines

1. Background - education, employers, R&D experience; innovation experience
2. Current innovation system overview - structure and resources
3. Degree of R in R&D; split between basic R and applied R
4. Current balance between Corporate R&D and Business Unit R&D
5. Mechanisms for coordination between Corporate and BU R&D
    - How to avoid redundancy between the two?
6. How R&D interacts with corporate strategy, innovation and marketing
7. How and who sets the agenda and expectations for R&D
    - How ensure alignment to corporate strategy
    - How ensure accountability to future-based outcomes
8. R&D performance metrics
    - How to ensure transparency of outcomes
    - How to ensure recognition of outcomes that are difficult to measure
9. R&D evolution in the digital age: digital R&D tools, SW/HW development; new services development
10. How corporate R&D maintains the support of the business units
    - Methods for crossing the chasm from invention to marketable offerings
11. Other issues and challenges for R&D
12. R&D strategy and expectations for evolution over next 5-10 years
13. What has surprised you, positively or negatively, about things you have seen?
14. What other companies do you think do this well? Who are the benchmarks?