Full Lifecycle Innovation

Moving from the Ambitious Idea into the Marketplace

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Introduction Letter

In the world of the enterprise, innovation must extend from the initial ambitious ideas gathered from R&D labs around the world, all the way through applied R&D with industry partners, and into the development and commercialization of technology products and platforms.

Innovation starts with the spark of the right culture and talent meeting that ambitious and once hidden idea. But it doesn’t stop there.

In the world of the enterprise, I see the practice of innovation as encompassing a full lifecycle. It starts with those crazy and ambitious ideas that are then iterated and shepherded through a rigorous process of applied R&D. For the ideas that finally prove their worth, new technology products and platforms that address significant business problems are created and taken into the marketplace.

I call this multi-phase process: Full Lifecycle Innovation. It is a practical approach to one of the most creative and essential practices in business today:

Transforming Ideas from the Lab Into Marketplace Realities

The practice of Full lifecycle innovation requires a layer of processes, resources and decision criteria – each one a little different for the four phases of the journey:

1. Open Innovation
2. Applied R&D
3. Product and Platform Development
4. Commercialization

At each step, truly powerful events are triggered, explored and nurtured as different players, technologies and ideas enter the mix. All of them are serving the goal of creating something that is substantially bigger and more impactful than the simple sum of its parts. Something that is truly remarkable.

At NTT i³, we believe that Full Lifecycle Innovation is about:

Curating a culture of ambitious ideas
With rebellious talent from around the world
Dedicated to turning hidden opportunities into real products
That make a difference for the enterprise

Nina Simosko
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4 STAGES OF FULL LIFECYCLE INNOVATION

OPEN INNOVATION  APPLIED R&D  PRODUCT AND PLATFORM DEVELOPMENT  COMMERCIALIZATION
Open Innovation

The concept and practice of Open Innovation came into prominence over a decade ago out of UC Berkley and the offices of Professor Henry Chesbrough. Open Innovation embraces practices of widely distributed knowledge, extensive outside collaboration and partnerships, and the sharing of risk and reward beyond the corporate boundaries.

I would add that this initial phase of enterprise innovation needs to be driven by a focus on looking and engaging outward, seeking surprise, and embracing divergence and expansion of opportunities. One of the most self-destructive things an individual or company can do at this point of the journey is to enter with a pre-defined expectation of what you will find. You need to find a balance between casting a wide net for ideas - along with some minimal narrowing in relationship to your core competencies and the internal assets that you can leverage. This enables you to develop the necessary radar to find that one magnificent gem of an opportunity without being distracted by all the shiny objects you encounter.

No one has a monopoly on knowledge ... When useful knowledge exists in companies of all sizes and also universities, non-profits and individual minds, it makes sense to orient your innovation efforts to accessing, building upon and integrating that external knowledge into useful products and services.

- Henry Chesbrough
Open innovation considerations and challenges

**KEY ACTIVITIES**
- Idea discovery
- Resource identification
- Initial prototypes

**CHALLENGES**
- Spider sense in search of ambitious ideas
- Factors for narrowing

**DECISION MAKING CRITERIA**
- Core competencies
- Leverageable assets

**KEY PARTNERS**
- R&D labs, universities, entrepreneurs

**MINDSET**
- Divergence and expansion

**CRITICAL SUCCESS FACTORS**
- Early customer involvement and engagement

**KEY CORPORATE ROLE**
- Investment and infrastructure

**CRITERIA FOR MOVING TO THE NEXT PHASE**
- Prototype, early pilot traction, growing list of enterprise customer interest
Applied R&D

Real business partners are the key to Applied R&D. This phase of Full Lifecycle Innovation takes the initial ideas and early prototype feedback and digs more deeply into collaboration, experimentation and development with actual customers in real world business situations.

By its definition, this phase requires an enterprise business partner with guts, ambition, patience, and a willingness to champion a project designed to upend their status quo. Not only do they need to bring these attitudes and commitment, they also need to have the technical and business skills required to integrate experimental innovative changes into their existing technology systems and operating processes.

The flow of information is of paramount importance in the Applied R&D phase. This is when we are just beginning to shape products and platforms and extend the membership of the team to partners. The success of this early technology development is shaped more by the effective sharing of information, than by checking off boxes as tasks are completed. Iteration and complex learning loops are important ongoing activities, and the optimized flow of information provides the structure for them.

“
We very much use a prototyping model, play with ideas, and then get stuff started that way, which is how the greatest projects get started.

- Megan Smith, CTO of the United States
Applied R&D considerations and challenges

**KEY ACTIVITIES**
- Definition of enterprise applicability

**CHALLENGES**
- Free flow of information
- Enterprise partners

**DECISION MAKING CRITERIA**
- Willingness of enterprise partners to pilot and teams to share information

**KEY PARTNERS**
- Enterprise pilot customer

**MINSET**
- Divergence with partners. Beginning of convergence with technology

**CRITICAL SUCCESS FACTORS**
- Collaborative pilots and accessible resources

**KEY CORPORATE ROLE**
- Identification and provision of enterprise customer partners

**CRITERIA FOR MOVING TO THE NEXT PHASE**
- IP and patents
- Real world pilot success
- Growing list of enterprise customer interest
- Preliminary product/platform and GTM spec
Phase 3

Product and Platform Development

If the iterative pilots of the Applied R&D phase indicate success and the opportunity for scale, and the “invite list” for enterprise participation is growing – the time is right to move into the third phase of Full Lifecycle Innovation - Product and Platform Development. This is where technology innovation evolves from customized skunk works and pilots to being codified for mass market deployment. This is where ideas are converging into products.

The cultivated ecosystem of technology partners becomes most critical at this point. In the world of the enterprise, one company can rarely provide everything that is needed. Trusted partners bring substantial value to the product and platform offering by enabling new configurations and customization in addition to the ‘out of the box’ offering.

This is also when the initial considerations and baseline for go to market need to be established. Sales resources and customer relationships from outside partners and the network of corporate operating companies now come into the innovation circle.

“Deploy or die … You have to get the stuff into the real world for it to really count.”

Joi Ito, Director of MIT Media Lab
Product and platform development considerations and challenges

**KEY ACTIVITIES**
Translation of pilot success into packaged technology offering

**CHALLENGES**
Tradeoff between customized development and mass market readiness

**DECISION MAKING CRITERIA**
Ability to go from customized pilot to packaged technology offering

**KEY PARTNERS**
Other technology vendors

**MINDSET**
Convergence of technology, resources and features

**CRITICAL SUCCESS FACTORS**
Engineering, product management and business skills

**KEY CORPORATE ROLE**
Insights and input (upon request) in preparation for commercialization

**CRITERIA FOR MOVING TO THE NEXT PHASE**
Packaged offering, plug-ins and APIs for integration and customization
Commercialization

Commercialization is where the ambitious idea that was once hidden in a lab becomes widely public in the marketplace. This part of the innovation journey is actually comprised of 3 key steps.

- Viability
- Selling
- Support and Growth

The first of these steps is driven by the innovation team that has shepherded the idea through cycles of prototypes and applied R&D, while the remaining two require new partners to step in with strong operating experience.

For a product or platform to be viable beyond a pilot phase, it requires both business alignment with customer needs, as well as having go-to-market elements firmly in place. These range from a fully QA'ed and documented product to baseline product marketing materials. This is the phase at which the initial innovation team hands off the lead role to partners with operational and direct customer connections.

In the case of my company NTT i3, the leads for the selling and support phases of commercialization come from the various operating companies of NTT Group. For other companies’ innovation efforts, the ability to cultivate these kinds of partners from inside and outside the organization is just as important to success as the initial discovery of ideas to take into the innovation process.

Successful teams at this final stage of Full Lifecycle Innovation must be able to keep one foot fully grounded in that initial world of surprise and wonder, while reaching across the chasm and fully planting the other in the practical world of P&L. I caution anyone who thinks that their ‘innovation work’ is done prior to having acceptance and delight with real customers.
Commercialization considerations and challenges

**KEY ACTIVITIES**
Go to market and sales outreach

**CHALLENGES**
Speed, scale and focus of customer outreach

**DECISION MAKING CRITERIA**
Identification of enterprise customers with market need

**KEY PARTNERS**
NTT Operating Companies

**MINDSET**
Divergence and openness for customers

**CRITICAL SUCCESS FACTORS**
Customer relationships and trust
Proof specifics from pilots
Clarity of product offering

**KEY CORPORATE ROLE**
Targeted customers with dedicated sales and support teams

**CRITERIA FOR MOVING TO THE NEXT PHASE**
This is the final phase!
Measuring the Success of Full Lifecycle Innovation

In my experience in the world of enterprise innovation, success comes from creating environments where people and ideas can connect and evolve with a little bit of structure and process thrown in to guide them at the right moment. It’s important to know when to keep things on the fringe, and when to slowly pull them into the mainstream – without killing the creativity and opportunity during the transition.

With Full Lifecycle Innovation there is no simple ROI metric of success. What I look for is the successful connection of teams, customers, markets, partners, technologies, ambitious ideas, and market opportunity. If we get all of those elements right, I should see three things at the end of the process:

1. The successful movement from an ambiguous and ambitious idea in an R&D lab into the marketplace where it creates dramatic and sustainable change.
2. The creation of something that is both expansive and practical.
3. A result that seems obvious – but one that no one ever saw coming.

And then what?

We look for ways to start again with ideas and challenges that are always waiting in the wings.
### Key Activities

- The mining and selection of ideas inside and outside the broader organization — through Operating Companies, universities, startups.
- Resource identification
- Prototype development and iteration

### Challenges

- Spider sense development.
- Adventurous exploration for ambitious ideas.
- Factors for narrowing

### Decision Making Criteria

- Core business and tech competencies.
- Assets that can be leveraged
- Willingness of enterprise partner to uproot existing infrastructure to pilot and experience with a real market need.
- Willingness to share information and key learning

### Key Partners

- R&D Labs of Operating Companies, university researchers, entrepreneurs
- Enterprise pilot partner(s)
- Other technology vendors for configuration and customization
- NTT Operating Companies

### OPEN INNOVATION

- Definition and proof of enterprise applicability – with a real enterprise, real customers, real value gained through technology

### Applied R&D

- Translation of successful elements of the pilot(s) into a packaged technology offering

### Product & Platform Development

- Integrated and well-orchestrated GTM and sales initiatives

### Commercialization

- Speed and scale of Go To Market (GTM) and sales outreach
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<td>Divergence and expansion</td>
<td>• Divergence with partners. • Beginning of convergence with technology</td>
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| CRITICAL SUCCESS FACTOR | Early customer involvement and engagement | • Curated list of accessible resources • Collaborative pilots | Engineering, product management and business skills | • Strong customer relationships and trust • Proof points and use cases from pilot • Clarity of product offering |

| KEY CORPORATE ROLE | • Investment in the undefined. • Provision of infrastructure assets | Identification and provision of enterprise customers for collaboration | Insights and input in preparation for commercialization | Targeted customer database, dedicated sales teams, and customer support resources |

| KEY PARTNERS | • Working prototype • Traction with at least one pilot enterprise customer • Growing requests for engagement from additional enterprise partners | • IP and Patents written and filed. • Real world market success with at least one customer that is scalable. • Growing number of enterprise customers waiting in the wings. • Preliminary spec of GTM resources, product, and platform | • Packaged offering of the technology. • Plug-ins and APIs for customization and integration with other technologies | N/A |
About NTT Innovation Institute, Inc.

NTT Innovation Institute, Inc. (NTT i³) is the Silicon Valley-based innovation center for NTT Group, one of the world’s largest ICT companies. NTT i³ works with established enterprise companies interested in investigating new approaches to evolving into technology-first, digitally-driven businesses. Likewise, NTT i³ partners with early stage digitally-native businesses looking to expand their presence and challenger advantage.

NTT i³ embraces a unique full lifecycle approach to innovation combining best practices of open innovation research, applied R&D expertise, and agile product development. Collaborative open innovation elevates and expands enterprise companies’ internal conversations and explorations around digital innovation opportunities. Applied R&D expertise then brings focus and practical application by translating those ambitious ideas into the development of new technology platforms, products, and practices.

To accelerate the movement of innovation from initial idea to marketplace implementation, NTT i³ combines its access to the significant global infrastructure resources, investment fund, research knowledge, and trusted long-standing customer relationships of NTT Global with its own software startup expertise and deep enterprise relationships.