The Right Idea-to-Launch (I2L) System

The Triple A System Part 1: Adaptive & Flexible

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The Right Idea-to-Launch (I2L) System
– The Triple A System

Discovery:
Idea Generation
Stage 1:
Idea Scoping
Stage 2:
Build Business Case
Stage 3:
Development
Stage 4:
Testing & Validation
Stage 5:
Launch

Adaptive & Flexible
Agile
Accelerated
The “Triple A” I2L System

**A1: Adaptive (& Flexible)**

- Spiral (iterative) development:
  - a series of **Build-Test-Feedback-Revise** iterations
  - Build something – get it in front of customers
- Context-based – one size does not fit all
  - BTOM at OMICRON
  - Stage-Gate-TD, Lite and Xpress
  - HP’s embryonic versus mature markets processes
- Risk-based contingency model – key uncertainties & assumptions define deliverables & stage activities
- Innovation project canvass
- Different criteria for Go (scorecards, profiling) & gates integrated with Portfolio Management (tomorrow)

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**1. Adaptive “Spiral Development” – To Get the Product Right**

**Spiral (Iterative) Development**

- Handles the dynamic information process with fluid, changing information
- Gets the product right

**By Contrast: the Rigid, Linear Process**

- Front-end work or homework is done
- The product specs are determined, the product definition is fixed
- Development proceeds – the product is developed
- Then into Testing… but…

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**Diagram:**
- Stage 1-2: Front-End Homework
- Stage 3: Development
- Stage 4: Testing & Validation
- Gate 1: Go to Development
- Gate 2: Go to Testing
- Gate 3: Go to Launch
Smart Teams Practice Spiral Development

- They use a series of iterative steps or ‘loops’
  Build-test-feedback-and-revise
- They define what information is fixed & reliable
- And define what design elements of the product are **fixed** versus **variable (fluid)**
- They develop a first very early version of the product
  - A virtual prototype, a “protocept”
    - They test it with the customer, seeking fast feedback
    - Which they then use to produce the next & more complete version, a crude model or rapid prototype… & so on

- **Use tools:**
  - Virtual prototypes
  - Rapid prototypes
  - Laptop & video projector

Get something in front of people! People don’t know what they’re looking for until they see it.
Adaptive Via Spiral Development – a Series of “Build-Test-Feedback-and-Revise” Iterations

Discovery: Idea Generation

Stage 1: Scoping

Stage 2: Build Business Case

Stage 3: Development

Stage 4: Testing & Validation

Stage 5: Launch

Gate 1

Gate 2

Gate 3

Gate 4

Gate 5

Post Launch Review

PLR

The Customer or User

VoC User Needs-and-Wants Study

- Face to face interviews
- By entire project team
- With users & customers
- Identity needs, problems, issues, requirements

Full Proposition Concept Test

- A simulated 'sell'
- Pre-Development!
- With 'virtual prototypes' or 'protocepts'
- And brochures, collaterals, story boards
- And PPT selling presentation
- Gauge: interest, liking, preference & purchase intent

Rapid-Prototype & Test

- Again a test of proposed product
- Early in Development Stage
- Using a rapid prototype, crude prototype, or model
- 3-dimensional & physical
- Again with selling materials
- Gauge customer reaction & purchase intent

Working Model

- Much the same...
- But versions of product much closer to the 'final product'
- Always gauging customer reaction & purchase intent

Customer Tests

- True prototype tests in actual in-use conditions
- Field trials
- Beta tests
- In-home tests

Next Version

- Again much the same as above
- Closer yet to “final product”
Designing a New Car with MVPs

MPV = minimally viable product

Example: Streetlamp

Werbung auf Gehsteig projizieren
Learn from the Auto Industry – How They Do It So Well
Six Versions or ‘Protocepts’ of a Car – Before Production

Start with some artist’s creative sketches….Version 1, a concept

Version 2: Crude engineering sketches – basic hand-drawn engineering drawings

Version 3: Computer graphics, CAD generated, and simple at first…..

Version 4: The “virtual car”. Virtual reality pictures bring the car and cockpit alive

Version 5: Clay sculpturing done initially by computer and robot tools – small clay models, then full-sized

Version 6: Prototypes which are field-tested

Finally ready for production
Protocepts

- **Protocepts can be…**
  - Simple, easy-to-build models (paper, cardboard, clay, wax)
  - Drawings and sketches (by artists or art students)
  - CAD drawings & 3-D CAD drawings
  - A series of MVPs (something that actually functions)
  - Rapid prototypes
  - Crude working models
  - Early prototypes

- **Anything to test the proposed product before & during development**
  - Technically – can we develop and/or make it?
  - Market-facing – does the customer like it?

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2. Build in Flexibility – Context-Based Tailored to Each Project

- Make the process flexible & adaptive
  - No activity is mandatory
  - Nor is every deliverable required for every project
  - Not a rigid list of actions & deliverables

- Trust the project team – give them latitude
  - They map out their detailed Forward Plan
  - They propose actions & deliverables

- The Team maps out their detailed Forward Plan for the next Stage
  - The Team maps out their detailed Forward Plan
  - They propose actions & deliverables
  - Approved by Gatekeepers for next stage
3. Context-Based – Flexible, Tailored to Different Types of Projects

The Platform & Technology Development System

The 3-Stage Technology Development Process

The Normal 5-Stage, 5 Gate Stage-Gate® New Product Process
### Some Projects Have Many Uncertainties, High Risks

**Risk Dictates the Appropriate I2L System**

<table>
<thead>
<tr>
<th>Market or Customer</th>
<th>Product &amp; Production</th>
<th>Operation/technology processes</th>
<th>Product or production technology are totally new, don’t exist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sells into existing market/customer, one we are familiar with</td>
<td>Uses our existing operations/technology processes</td>
<td>Low Risk Overall</td>
<td>High Risk: High Technical Risk; Low Market Risk</td>
</tr>
<tr>
<td>Sells into a new market/customer, but one we are familiar with</td>
<td>Moderate Risk: Low Technical Risk; Moderate Market Risk</td>
<td>Moderate-High Risk Overall</td>
<td>Very High Risk: High Technical Risk; Moderate Market Risk</td>
</tr>
<tr>
<td>Sells into a new and/or unfamiliar market/customer for us</td>
<td>High Risk: Low Technical Risk; High Market Risk</td>
<td>Very High Risk: Moderate Technical Risk; High Market Risk</td>
<td>Exceptionally High Risk Overall</td>
</tr>
</tbody>
</table>

### Dealing With the Valley of Death

- **High risk, many unknowns**
  - Especially near beginning of the project
- **Results in the “Valley of Death”**
  - May be killed too soon
The BTOM Process at OMICRON

- If somebody has an idea that creates enough excitement in the management team:
  - They can become a BTOM (Breakthrough TO Market) project leader
  - They get resources (must request specific resources from management)

- They have 6 months time to come up with a new product
  - Not necessary to follow any Company standards
    - For example, following software development rules, using standardized components, guaranteeing safety standards, etc.
  - But the teams are responsible for the safety of the product

- After the 6 months, something needs to be shown that has already been seen and/or tested by customer
  - It may even be sold before the end of the 6 months
  - But customer must be told that it is not a regular product

Not For Every Project!

- When the 6 months are over, there are three possibilities:
  - Terminate the project with no new product or business
  - Start an ATOM project to develop the new product / business, meeting all regulations & rules
  - Continue the BTOM project for another 6 months
    - This is possible if one member of the management team wants it.
    - The one who wants it can overrule all the other colleagues (this possibility exists only once)

- Different from the ‘regular process’ (ATOM):
  - Can be very vague or even unknown what the project will lead to
  - E.g., the goal of a BTOM project can be to develop a solution for a problem
    - without knowing up-front what the product / business model will be

Note while still “new” at OMICRON, BTOM looks like a promising adaptation & combination of skunk works (outside the formal organization & system) and sprints (time-boxed – but 6 months)
It Works!

- **Working with Customers – Seeking Fast Market Validation**
  - The customer has to agree and sign that he is not buying a regular product, there is not the usual 10 year warranty.
  - Service is only promised by the team members (as long as they work for the Company).
  - Thus the customer takes some risks when buying that kind of product.

- **Note: for breakthrough innovations, it is very likely to find customers who desperately want the product / solution and are willing to share the risk**

**RESULTS**

- BTOM is experimental at OMICRON – very new.
- First project – a success.
- Would not have been done at all if not for BTOM.
- 2nd project – a success; 3rd project underway.
## HP’s Context-Based Model
### Three Different I2L Systems – Depends on Market & Technology Maturity

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Emergent</th>
<th>Agile</th>
<th>Efficient (Traditional)</th>
</tr>
</thead>
</table>
| **The Situation** | A new market and/or technology
An emerging or embryonic business | Exiting & rapidly growing but changing market | Mature market
Well know market, customers & needs
Well-known technology |
| **The Approach** | Experimental | Agile approach | Traditional but efficient process |
| **Core Objectives** | Probe & learn via multiple prototypes or products to understand the value proposition to different customers
Also to gain insights into the technical solution | Rapidly evolve the product design to meet changing customer needs & technical choices | Improve only those features valued by customers
Reduce product costs |

### Market Risks & Uncertainties (From HP)

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<th>Project Type</th>
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<th>Agile</th>
<th>Efficient (Traditional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customers</strong></td>
<td>Lead users, enthusiasts, innovators</td>
<td>Early majority in ‘adoption curve’</td>
<td>Late majority &amp; laggards</td>
</tr>
<tr>
<td><strong>Customer Needs</strong></td>
<td>Largely unknown</td>
<td>Known, but changing rapidly</td>
<td>Well-known &amp; stable over time</td>
</tr>
<tr>
<td><strong>Market Size</strong></td>
<td>Very small; may not even exist yet</td>
<td>Small but growing rapidly, growth phase of PLC</td>
<td>Large &amp; defined; may be maturing, flat or even declining</td>
</tr>
</tbody>
</table>
| **Questions** | Does a market exist?
In what form?
Does value exist for the customer?
How?
Will anyone pay for what we offer? | Market size & growth?
How quickly can we adapt and launch?
How well does the design fit evolving customer needs? | Market size?
Likely market share & expected sales?
How can we sustain margin & market share? |
### Technical Risks & Uncertainties (From HP)

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<th>Agile</th>
<th>Efficient (Traditional)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technology Maturity</strong></td>
<td>Very immature but improving quickly</td>
<td>Maturing quickly; following a well-defined trajectory</td>
<td>Late majority &amp; laggards</td>
</tr>
<tr>
<td><strong>Technical Risks</strong></td>
<td>Many risks and technical hurdles; cannot envision a solution</td>
<td>Some risks &amp; technical hurdles; can likely be overcome Technical solutions is largely envisioned</td>
<td>Few risks; technical hurdles can be overcomes easily Can already envision a solution</td>
</tr>
<tr>
<td><strong>Technical Solutions</strong></td>
<td>Many unexplored design &amp; technology possibilities May require new science &amp; invention</td>
<td>Known, but changing rapidly</td>
<td>Well-known &amp; stable over time Largely a straightforward engineering or applied science initiative</td>
</tr>
</tbody>
</table>

### How to Mitigate Risk?

- **Reduce the amounts at stake**
- **Break the investment process into increments – bet some money, bet more... like buying options**
- **Reduce uncertainties & unknowns: Identify key uncertainties & assumptions**
- **Get the information to reduce uncertainty, validate assumptions**
4. Risk-Based Contingency Model

Information is one key to reducing risk
The other: a gated, incremental I2L system,

- Identify the key assumptions, unknowns & uncertainties
  - Assumptions that are critical to the success of the project, product design or Business Case

- Then agree on the needed deliverables
  - What information is vital to verify or validate the key assumptions, mitigate risks

- Finally determine the key tasks or activities needed in each stage
  - What we need to do to get that information?
  - What activities (actions)?

Net Result: Each project is custom-tailored, contingent on its unique risks & assumptions

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Corning’s Approach:

**Stage-Gate® Evolution at Corning**

- **1987**: I. Build Knowledge, II. Determine Feasibility, III. Test Practicality, IV. Prove Profitability, V. Commercialize
- **1994**: I. Build Knowledge, II. Determine Feasibility, III. Test Practicality, IV. Prove Profitability, V. Manage Life Cycle
- **2004**: I. Build Knowledge, II. Determine Feasibility, III. Test Practicality, IV. Prove Profitability, V. Manage Life Cycle
- **2011**: I. Build Knowledge, II. Determine Feasibility, III. Test Practicality, IV. Prove Profitability, V. Manage Life Cycle

**Time**

**CORNING**
It Works!

Platform Technology Example - Corning

- First project thru the system
- Required by Apple for I-Pad
- Dedicated team
- Fairly short ‘sprints’ or iterations
- Met with CEO regularly
5. The Innovation Project Canvas

- A tool to evolve good ideas & approaches into successful concepts
- Helps the project team map out their next steps
- Their “customized project plan”
- Highly efficient:
  - Accelerates early phase of the innovation process

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It Is More Than a Form, It Is a Process!

- Phase 1: Target Market and Value Proposition
- Quality Check A
- Phase 2: Solutions and Business Model
- Quality Check B
- Phase 3: Key Activities and Project Plan
References – Good Reading


www.amazon.com

Articles


Also, see selected articles on line (no charge) at www.bobcooper.ca