IT strategy and innovation

Prof. R. O’Callaghan
Innovation as a Management Process

- Scanning the environment for relevant signals to trigger the process of change;
- Strategic analysis: choice and planning around responding to those triggers;
- Resourcing: ensuring the availability of relevant resources (primary technological knowledge) to exploit the strategic opportunity;
- Implementation: management of the transition from concept to fully developed innovation;
- Learning: reviewing the experience and capturing technical and managerial knowledge to improve performance in subsequent cycles of the innovation process.
Innovation Framework for IT Management

External Analysis (Intelligence)
- POTENTIAL
  - Technology developments
  - Trends
  - Impacts
  - Opportunities

IT Strategy
- WHAT & WHY
  - IT/IS adoption
  - New applications
  - Systems portfolio

Sys. Design/Build/Acquire
- HOW
  - Architecture
  - Systems Develop.
  - Make/Buy
  - Outsourcing

Implementation and operations
- EXECUTION
  - Change mgmt.
  - Operations
  - Risk
  - Security
  - Auditing

Tools:
- Technology scanning
- Technology assessment
- Investment evaluation
- Systems planning
- Process Modeling
- Sys. Dev. tools
- Project management
- Quality assurance
Competitive Advantage: Areas where IT can help

- **Bargaining power**
  - with customers
    - Unique features
    - Switching costs
  - with suppliers
    - Search costs

- **Relative Efficiency**
  - Internal
    - Production costs
  - Inter-organizational
    - Transaction costs

- **Differentiation strategy** (e.g. quality, service)
- **Customer Loyalty**
- **Freedom in procurement**
- **Cost leadership strategy**
- **Lower Cost of Ownership**
Different Innovation Targets

**Can we use IT/IS to ......?**

**Suppliers**
- Improve our bargaining power or reduce theirs?
- Reduce buying costs?
- Be a better customer and obtain a better service?
- Identify alternative sources of supply?
- Improve the quality of products/services purchased?

**Competitors**
- Raise the entry cost of potential competitors?
- Differentiate (or create new) products/services?
- Alter the channels of distribution?
- Identify / establish a new market niche?

**Customers**
- Reduce customers’ costs and/or increase their revenue?
- Increase our customers’ switching costs (to alternative suppliers)?
- Increase our customers’ knowledge of our products/services?
- Improve support/service to customers and/or reduce the cost of existing services?
- Identify new potential customers?
Increased IT impact on operations
(cost, co-ordination, integration, etc.)

IT impact on Marketing
(customer focus, relationship)

- Loyalty
- Intimacy

- Speed
- Customization
- Cost

Competitor Analysis
Benchmarking: Position vis a vis key players
Wait and see? Or, wait and lose?

Dynamics of IT-based innovation

- First major move
- Customer acceptance
- Catch-up moves
- First-mover expansion
- Commoditization

Risky IT investments | Competitive Advantage | Competitive Necessity

# of users vs. time
Innovation: uncertainty, knowledge, and resource commitment
sustainable advantage

Project life cycle
Competitor analysis
Supply system analysis

Generic lead time
Competitive asymmetry
Pre-emption potential
IT Strategy and Innovation: the case of Wingspan.com
WingspanBank.com

- Internet-only
- Standalone operation
  (parent: Banc One)
- Broad range of products
- Best of bread products
- From one website:
  - Single application
  - Single log-on

90 days, 100 people,
30 organizations,
$120 M marketing
Customer acquisition process model

attraction

Visitors to website

conversion

0.4%-12%

(First time) customers

retention

10%-50%

Repeat customers

Mass advertising
Targeted websites
E-mail
Direct mail

Simple purchase process
Few questions asked
Real time assistance (chat)
Call me button
Able to save shopping carts
Safe, reliable payment
Personalized offering

Operational execution
Quick response
Download times
Personalization
Loyalty programs
Key performance indicators

- Adv. revenue / visitor
- Revenue / customer
- Revenue / repeat customer

- # Visitors to website
- # Customers
- # Repeat customers

- Visitor acquisition cost
- Customer acquisition cost
- Repeat customer acquisition cost

- Conversion rate: 0.4%-12%
- Retention rate: 10%-50%
WINGSPAN BANK

Adv. revenue / visitor

Conversion rate
0.4%-12%

# Visitors to website

Customer acquisition cost

$400 / year ?
Revenue / customer

Customers
Yr1: 100,000
Yr2: 225,000

= $ 1,200

Customer acquisition cost

Retention rate
20%

Repeat customers
Yr1: 20,000
Yr2: 50,000

Repeet customer acquisition cost

= $ 6,000 !!!

Visitor acquisition cost

Marketing expenditure (Year 1) = $ 120 M.
Payback of e-Commerce projects

Data from an IT magazine, year 1999
Defenders

- Complacent mind-set
- Conventional skill sets
- Cannibalization fears
- Channel conflict
- Curse of the deep pocket
- Current income focus

Attackers

- Speed culture
- Focused skill sets
- Customer cherry picking
- Business system slicing
- Economic webs
- Greenfield business design
## e-Business Strategies

<table>
<thead>
<tr>
<th></th>
<th>Defensive</th>
<th>Aggressive</th>
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</thead>
<tbody>
<tr>
<td><strong>Focus</strong></td>
<td>Converting existing clients</td>
<td>Gaining new clients</td>
</tr>
<tr>
<td><strong>Prices</strong></td>
<td>Same</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Governance</strong></td>
<td>Integrated (Multi-Channel)</td>
<td>Standalone</td>
</tr>
<tr>
<td><strong>Brand</strong></td>
<td>Same</td>
<td>Different</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td>Low conversion cost</td>
<td>High acquisition costs</td>
</tr>
<tr>
<td><strong>Loyalty</strong></td>
<td>High customer loyalty</td>
<td>Low customer loyalty</td>
</tr>
<tr>
<td><strong>Risks</strong></td>
<td>Pricing</td>
<td>Cannibalization</td>
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</table>
Online Banking Demand Segmentation

Wingspan did not focus on specific targets
# Eight Distinct Demand Opportunities

<table>
<thead>
<tr>
<th>Segments</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Confident Asset Managers</td>
<td>• Financially and technologically astute, extremely self-directed</td>
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<tr>
<td></td>
<td>• Focused heavily on equity investments</td>
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<tr>
<td>Satisfied Plan Followers</td>
<td>• Stick to financial plan; financially secure</td>
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<tr>
<td></td>
<td>• Values professional financial advice</td>
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<tr>
<td>Established Traditionalists</td>
<td>• Prefers dealing with people – little / no interest in technology</td>
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<tr>
<td></td>
<td>• Few financial worries; pretty set for retirement</td>
</tr>
<tr>
<td>Family Asset Builders</td>
<td>• Building nest egg for family – long term horizon</td>
</tr>
<tr>
<td></td>
<td>• Strong technology affinity</td>
</tr>
<tr>
<td>Bewildered Boomers</td>
<td>• Looking for help; not confident in own ability</td>
</tr>
<tr>
<td></td>
<td>• Worried about financial situation, particularly retirement</td>
</tr>
<tr>
<td>Time Driven Transactors</td>
<td>• Seeking to minimize time and effort in managing finances</td>
</tr>
<tr>
<td></td>
<td>• Prefers to lever technology</td>
</tr>
<tr>
<td>Striving Borrowing Families</td>
<td>• Feels significant financial stress</td>
</tr>
<tr>
<td></td>
<td>• Aspires to meeting family focused goals, e.g., house, education</td>
</tr>
<tr>
<td>Overwhelmed Survivors</td>
<td>• Overwhelmed by finances and technology</td>
</tr>
<tr>
<td></td>
<td>• Relatively limited financial resources</td>
</tr>
</tbody>
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Source: BAI and the Cambridge Group
First Mover Challenges

Sustainability assessment

• generic lead time
  – how long before a competitor can respond?
  – development time for a similar system

• competitive asymmetry
  – who can respond?
  – handicaps faced by a competitor trying to respond
  – will they be able to copy the system?

• preemption potential
  – will their eventual response be effective?
  – ability to preempt retaliation by the follower
  – “first mover” advantage
Generic Lead Time

Wingspan was built in 90 days

First mover

- Vision / idea
- Win approval
- Build
  - Technology
  - Applications
  - Database
  - Knowledge
- Project launch
  - Gain share
  - Lock-in users

Competitor’s delivery time

Followers

- Awakening:
  - Awareness
  - Perceive significance
  - Accept / assign responsibility
- Win approval
- Build
  - Technology
  - Applications
  - Database
  - Knowledge
- Project launch
Competitive asymmetry? Citibank was able to copy the concept.
Preemption Potential

- Switching costs
  - Dependence on IT-enabled products / services
  - Make it difficult to switch to a competitor
    - by design: proprietary IT systems
    - by contract: frequent flyer, etc.
    - Tightly intertwined with customer’s daily routine

- Wingspan “sticky products”:
  - Bill payments?

- Wingspan brand equity:
  - The “Amazon” of online financial services?
When does speed make sense?

- A large market potential
- Lasting barriers to entry
- Manageable risks
Factors influencing the capacity to benefit from technological innovation

- Secrecy
- Accumulated tacit knowledge
- Lead times
- The learning curve
- Product complexity
- Standards
- Complementary assets (competencies in commercialization)
- Pioneering radical new products
- Patent protection
Uniqueness and Complementary Assets over the life cycle
In 1972 EMI, a British music and electronics company, developed a revolutionary medical imaging technology. A few years after the successful introduction of its CT scanner, EMI faced competition on all sides, including Siemens and General Electric.
Principles of Strategic Positioning

- **Value proposition**: set of benefits different from those that competitors offer. Unique value for a particular set of customers or in particular set of uses.

- **Tradeoffs**: forgo some product features, services or activities in order to be unique at others (can’t be all things to all customers).

- **Distinctive value chain**: different activities than rivals or perform similar activities in different ways.

- **Fit**: all activities must be mutually reinforcing. Rivals can copy one activity, but will have difficulty duplicating a whole system.

  Michael Porter
IT innovation and Strategic Positioning

ANALYSIS (Learn from others)
Trends and Impacts

- Business Models
  - Organization
    - structure
    - processes
    - people
  - IT / IS
    - resources
    - architecture

DESIGN (What is in it for us?)
Organizational Decisions

- Strategy Formulation
  - Products
  - Services
  - Customers
  - Pricing

- Organization Design
  - Org. form
  - Bus. processes
  - Tasks, activities

- IT / IS Infrastructure
  - Functionality
  - Flexibility
  - Integration

Unique Value Proposition
Distinctive Value Chain
Platform for Information Sharing

New Technologies

Internet
E-Commerce
Mobile comm.
Client/Server
Data-Mining, etc.