Open Services Innovation: Rethinking Your Business to Compete and Grow in a New Era

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Henry Chesbrough
Haas School of Business, UC Berkeley
Open Innovation: Then and Now

Then

• In April of 2003, the term “open innovation” yielded ~200 Google pages, before I published the book

Now

• In April of 2010, a search on the same term yielded 21.9 million pages!
  – 5 orders of magnitude in 7 years
A Closed Innovation System

Science & Technology Base

Research Investigations

Development

New Products /Services

The Market

R → D
Great Successes from the Closed Innovation Model

- The Chemicals Industry – Germany and later US
- Edison, GE, and the rise of electrification
- Rockefeller and Standard Oil
- World War II scientific achievements
- Chandler: internal R&D key to the rise of the modern US corporation in 20th century
The Invention Perspective

“The key [to success] is to find a man of genius, give him money, and leave him alone.”
James Conant, former President, Harvard Univ.

“The best way to predict the future is to invent it.”
Alan Kay, computer scientist
Hidden Assumptions in the Internally-focused Innovation System

• If I discover it, I will find a market for it
• If I discover it first, I will own it
• The important technologies I will need can be anticipated in advance
• The best people in this field work for us
Open Innovation

Internal technology base

External technology base

Other firm’s market

License, spin out, divest

Internal/external venture handling

External technology insourcing

Our current market

Our new market

Stolen with pride from Prof Henry Chesbrough UC Berkeley, Open Innovation: Renewing Growth from Industrial R&D, 10th Annual Innovation Convergence, Minneapolis Sept 27, 2004
2003: We broke up the fortress ...
Bringing in the right partners – Open innovation

> 75 companies and
> 7000 people at
High Tech Campus Eindhoven
The expansion of the corporate funnel

- Front – end
  - Insourced Ideas /Technology
  - Incubators

- Development
  - ODM
  - Spin in Start ups
    - IP insourcing
  - Alliances

- Commercialize
  - OEM
  - Acquisitions
  - IP Licensing
  - Spin out
Motorola’s Razr
Initial Success

- More than 50 million units sold
- Motorola became world #1 handset manufacturer

- Then…. 
... The Trap Closes

- Motorola Krazr not a hit
- Nokia phones overtake Motorola
  - Becomes the new #1
  - Plus new entrants from Asia:
    - Samsung
    - HTC
- Motorola falls to #7 handset manufacturer today
Nokia’s Own Trap

• Nokia becomes world leader in handsets
• Global distribution, cost leader
• Strong position in emerging economies
• But…
.... The Trap Closes

- Basis of competition shifts from handset to applications and services in the ecosystem
- Phones become gateway to multiple media and uses
- Apple, RIM and Google building significant platforms for third parties to build upon
  - Microsoft also trying to get back in
- Nokia remains #1 in units, but not in profit
An Escape Route: Services

• Wrap services around your products
• Turn “products” into “solutions”
• Co-create innovations with your customers
• Use openness to get more from specialization
• Build platforms to attract others to add to your solutions in your ecosystem
Paul Horn’s Problem

• More than half of IBM’s revenue is coming from its Global Services business
• Circa 2004, few if any IBM Research Staff were working on services innovation opportunities

• How to sustain Industrial Research, if that research is not relevant to more than half of the company’s business?
Innovation in Products and Technologies

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Innovation in Services
Porter’s Value Chain

Source: Michael Porter, *Competitive Advantage*, 1985

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This is Not New Thinking

• “What the customer buys and considers value is never a product. It is always utility – that is, what a product does for him.”
  – Peter Drucker, Management: Tasks, Responsibilities, Practices

• “People don't want to buy a quarter-inch drill. They want a quarter-inch hole!”
  – Ted Levitt, Marketing Myopia
# A Different Perspective

## Product-Based
- Transactional
- Value from exchange
- Customer is consumer
- Quality is zero defects
- Core competences built on assets

## Service-Based
- Relational
- Value in use
- Customer is co-creator
- Quality is customer satisfaction
- Core competences built on processes

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The Utilization Differential

- Assume your car is driven 12,000 miles/year
- Assume your average speed is 30 mph
- You are driving the vehicle for roughly 400 hours
  - There are 8,760 hours in a year
  - Therefore, your utilization is about 4.6%
- If your transportation were a service, that untapped 95.4% becomes a source of value
  - Share vehicle acquisition, operation, maintenance costs
  - A potential Economy of Scale
Diamler’s Car2Go Service

• Carsharing program: www.car2go.com
• Launched in Ulm, Germany in 2008; Austin, TX in 2010
• Ultra-convenient: no fixed station to pick up or drop off; no required return time
• No upfront commitment: no security deposit, monthly fee, reservation cost
UPS – Open Services Changes Customers’ Processes

Customer Operations → Customer Shipping

UPS takes over customers’ shipping dept!

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Amazon – Open Services Creates Economies of Scope

• Amazon allows third party merchants its own tools to create Amazon web pages
  • Fulfillment by the third party
  • Billing and collection by Amazon
• Creates consistent shopping experience for users
• Increases “share of wallet” for Amazon, with no merchandising risk!
• Makes Amazon.com a more attractive Internet destination for shopping for many items
Amazon Web Services – Open Services Creates Economies of Scale

- Amazon hosts other companies’ web sites
  - Converts fixed server farms to variable costs for customers
  - Increases Amazon’s utilization of its servers
  - Lowers Amazon’s own costs as a result

- Rapidly growing and profitable business for Amazon
- Raises the bar for its competitors
The Evolution of Diabetes Care

Pre-1980
• Predominantly Type I
• Genetic
• Life or Death
• Physician is the Decision-maker
• Patient follows instructions
• Blood Glucose levels require lab tests to measure

Today
• Predominantly Type II
• Lifestyle Matters Greatly
• Debilitating
• Physician is coach
• Patient must actively manage her disease
• Patient measures own glucose levels multiple times daily
Changing Reimbursement

• J&J’s Velcade in Europe
• Unable to get added to formulary as front line drug for myeloma
• In desperation, a new value proposition:
  – NHS only pays if it works
• How does this change J&J’s focus in treating myeloma?
## Other Open Innovation Initiatives

<table>
<thead>
<tr>
<th>Company</th>
<th>Open Innovation Drug Discovery Platform</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lilly</td>
<td>Open Innovation Drug Discovery Platform</td>
<td>Finding “untapped sources of ideas and molecules outside of Lilly that would otherwise go unnoticed without initiatives like this one that advance science.”</td>
</tr>
<tr>
<td>McKesson</td>
<td>NEWDIGS</td>
<td>An open and cross-collaborative platform seeking to improve the drug discovery/delivery process</td>
</tr>
<tr>
<td>GSK (with Wellcome Trust, and various local government agencies)</td>
<td>Stevenage Bioscience Catalyst</td>
<td>UK’s first open innovation bioscience campus, pioneering a unique culture to drive early stage drug discovery and development (scheduled to open 1Q 2012)</td>
</tr>
<tr>
<td>Pfizer</td>
<td>Centers for Therapeutic Innovation</td>
<td>R&amp;D centers being established in partnership with academic medical centers already well known for being productive bioscience clusters</td>
</tr>
<tr>
<td>BristolMyersSquibb</td>
<td>String of Pearls strategy</td>
<td>To accelerate the discovery and development of new therapies, we are complementing and enhancing our internal capabilities with a suite of innovative alliances, partnerships and acquisitions with small and large companies.</td>
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## More Non-traditional Initiatives

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<tr>
<th>Academic-Industry Consortium (UC-Davis)</th>
<th>Clinical &amp; Translational Science Awards (CTSA) Pharmaceutical Assets Portal</th>
<th>The ultimate goal of the Portal is to improve collaboration between industry and academia in the area of drug repositioning</th>
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<tr>
<td>Gates Foundation</td>
<td>Global Health Program</td>
<td>Nonprofit focused on neglected diseases in the developing world</td>
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<tr>
<td>Cubist</td>
<td>Cubicin</td>
<td>Successful product once abandoned by big pharma and licensed by smaller company</td>
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<tr>
<td>Valeant</td>
<td>Ortho Dermatologics</td>
<td>Division acquired from big pharma by a smaller company</td>
</tr>
<tr>
<td>Puma Biotechnology</td>
<td>Start-up</td>
<td>New biotech start up based on compound in-licensed from big pharma</td>
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<tr>
<td>Astellas</td>
<td>Patent sale</td>
<td>Pharma sold off patents it did not plan to use</td>
</tr>
<tr>
<td>Merck</td>
<td>Outlicensing</td>
<td>Unprecedented outlicensing efforts being made following acquisition and strategic portfolio pruning</td>
</tr>
<tr>
<td>GSK</td>
<td>CNS therapeutic area</td>
<td>Entire therapeutic area abandoned by a big pharma company, which creates a licensing opportunity</td>
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Figure 1 - Evolution of Semiconductor Business Networks
TSMC’s Open Innovation Platform

• TSMC has >50% share of foundry capacity WW

• External suppliers of design and process IP design for TSMC first
  – TSMC has vast internal library of IP
  – TSMC tests and validates third-party IP on its processes

• Open Innovation Platform: TSMC now certifies that designs compliant with its Platform will yield first time through the process

• Tremendous competitive barrier to overcome