

Developing Radical Innovation Capabilities in Established Firms

Front End of Innovation Europe
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What is the Strategic Dilemma for Established Firms?

Exploitation ↔ **Exploration**

Exploit core competences

Develop new knowledge

Defend existing market positions

Enter new markets

Maintain current processes

Find new ways of doing things

Incremental Innovation

Radical Innovation

Why Look for Balance?

“Adaptive systems that engage in exploration to the exclusion of exploitation are likely to find that they suffer the costs of experimentation without gaining many of its benefits. They exhibit too many undeveloped new ideas and too little distinctive competence.

Conversely, systems that engage in exploitation to the exclusion of exploration are likely to find themselves trapped in suboptimal stable equilibria.”

James G. March, 1991

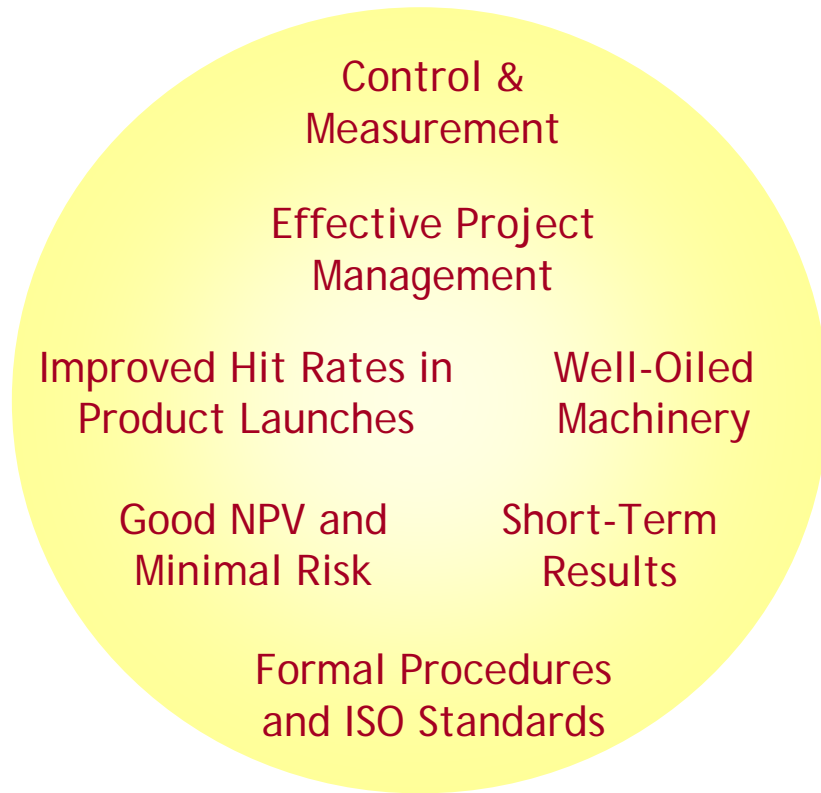
What Is the Key to Nokia's Success?

“Why have we been a successful company? If you want a very simple answer, it is **getting the balance right between innovation and execution.**”

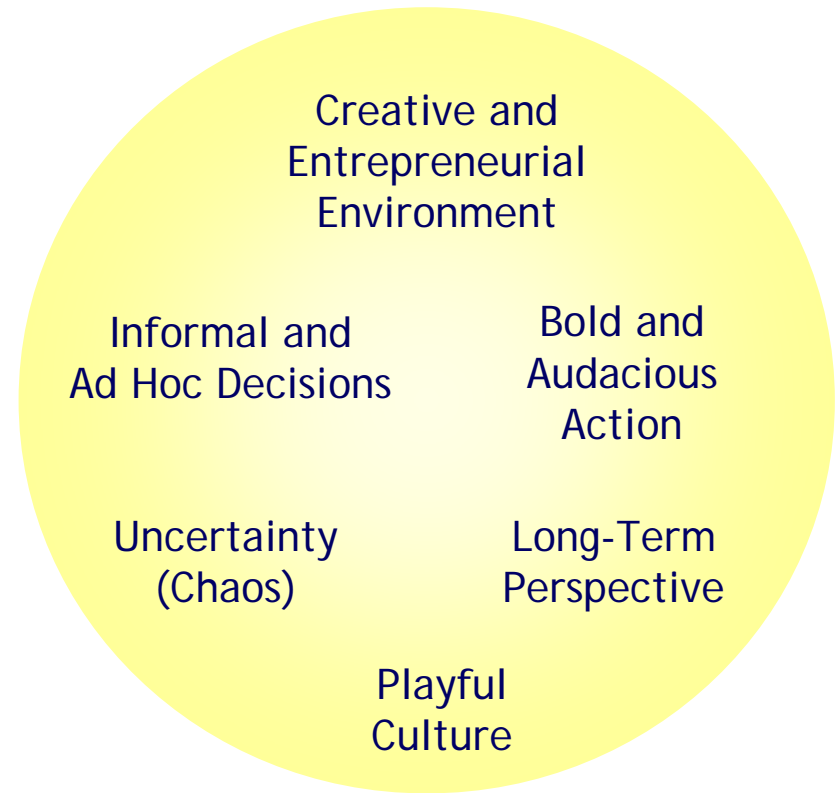
In a technology business, you need a tremendous amount of innovation, but with these volumes and growth, you need to execute or it will kill you. So it is balance. **I think we have done that better than anybody else.”**

Jorma Ollila, CEO of Nokia

What is the Organizational Tension for Established Firms?



Control & 'Engineering'



Creativity & Entrepreneurship



What Works Against Radical Innovation in Established Firms?

Strategy

Conservative Strategy

*Focus on Competing in Current Markets
Lower Gross Margins and Longer Time Horizons Not Accepted
"We are Doing Fine, Why Rock the Boat?"*

Closed Firm Boundaries

*Limited Scanning of the Periphery
Intellectual Property is Jealously Guarded
"We Do Everything Ourselves!"*

Organization

Core Business Organization

*Budgets Reside within Business Units
Sales Targets & Upgrades Rule
"Who Is Going to Fund It?"*

Risk Averse Culture

*Risk Aversity & Intolerance to Failure
'Analysis Paralysis' & Slow Decisions
"It Looks Risky! We Need More Analysis"*

Networks & Markets

Rigid Stage Gate Process

*Gantt Charts, 'Slip Rates' and NPV
Presume Predictability
People are Accountable to Plans
"What's the Plan? Show Me the Numbers!"*

Projects

Out of Tune with the Market

*Limited Market Intelligence
Overconfidence with Internal Ideas and No Proactive Scouting
"We Know Our Customers!"*

How to Develop Radical Innovation Capabilities?



How to Develop Radical Innovation Capabilities?

Strategy

Dual Strategic Focus

- Dedicate Resources to Long-Term Projects
- Develop and Communicate Market Vision
- Learn to Spot Disruptive Innovation Opportunities

Open Innovation

- Import Ideas From the Outside
- Export Ideas To the Outside
- Collaborate with Partners

Organization

Parallel Organization

- Give Ventures a Life of Their Own
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Customer Oriented Innovation

- Drive Strategic Innovation Around Customers' Value Activities
- Segment Markets in Insightful Ways
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Projects

Learning-Based Innovation

- Stimulate the Front End of Innovation
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How to Establish a Dual Strategic Focus?

- ✿ Dedicate Resources to Long-Term Projects
 - Set aside a bucket of resources for radical projects and for developing platforms of growth
- ✿ Develop and Communicate Market Vision
 - Identify opportunities for long-term growth, rooted in scenarios of the future as well as a vision of how to leverage and expand core competences
 - Communicate the vision to the organization and use it as a guide for idea generation and selection
- ✿ Learn to Spot Disruptive Innovation Opportunities
 - Acknowledge the threat of disruption in mature markets
 - Search for ways to introduce disruption in markets that are ripe to change

What are the Relevant Definitions of Radical Innovation?

When a firm embarks on radical innovation, there is a need to define it from two perspectives:

- 1) a definition to guide and communicate the strategic thrust for new business development
- 2) a definition to understand the organizational challenges of new ventures and adapt the managerial approach

1) Communicating the growth agenda in a way that is anchored in company strategy:

A radical innovation is one that has a high market impact by introducing a leap in customer value - in a way that is difficult to imitate

When making a call for more radical innovation, top management must also explain...

... the long-term vision of future markets and technologies

... the role and position of the firm in the envisioned market space

2) Adapting the managerial approach to the innovativeness of a new venture:

Newness of the industry, market or product category

(i.e. customer desires, technology, and competitor behavior evolve quickly and in unpredictable ways)

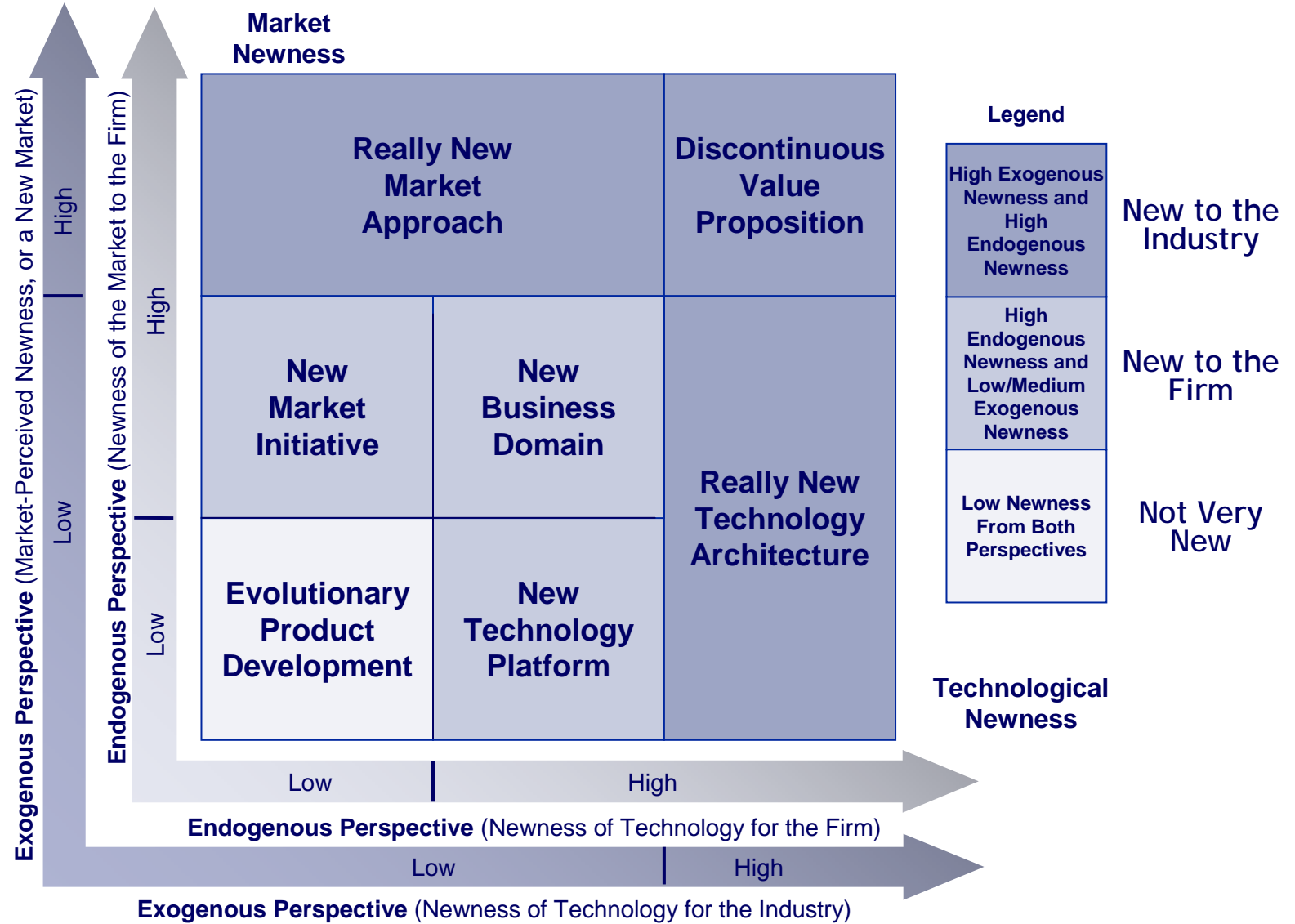
New kind of value proposition or business model

(e.g. in terms of quality, reliability, ease of use, convenience, customization, service, or cost)

New competences and processes required

(i.e. a need to develop new technology and marketing competences or processes)

What is the Four-Dimensional Innovativeness Typology?



Rosenø, Axel (2008) *Market Learning for Radical Innovation*, Springer (forthcoming).

How to Develop Market Vision to Guide Radical Innovation?

Newspaper Scenarios Were Created in 1997:

Market Vision is Anchored in Scenarios of the Future

The Internet was perceived as a threat to the current business model and the revenue from (classified) advertising. Scenarios of the world in 2007 were built to address these uncertainties by *looking out* at the future of entertainment, media, information gathering, and transaction facilitation.

Define Purpose, Scope and Time Frame

Identify Participants and Design Process

74 forces of social, political, economic, and technological change were identified that would shape the future over the next 10 years. Managers rated the importance and predictability of each force: 13 unpredictable forces were labeled *key uncertainties* and 9 more predictable ones were labeled *trends*.

Identify High Certainty Trends and Change Drivers

Identify Key Uncertainties

Two key uncertainties formed the core of the scenarios – in a two-by-two matrix: 1) the future media business model and 2) the way people would access information in 2007. All 4 scenarios were explained in terms of their most important change drivers. A catchy title was coined, and internal consistency was checked.

Construct Scenarios

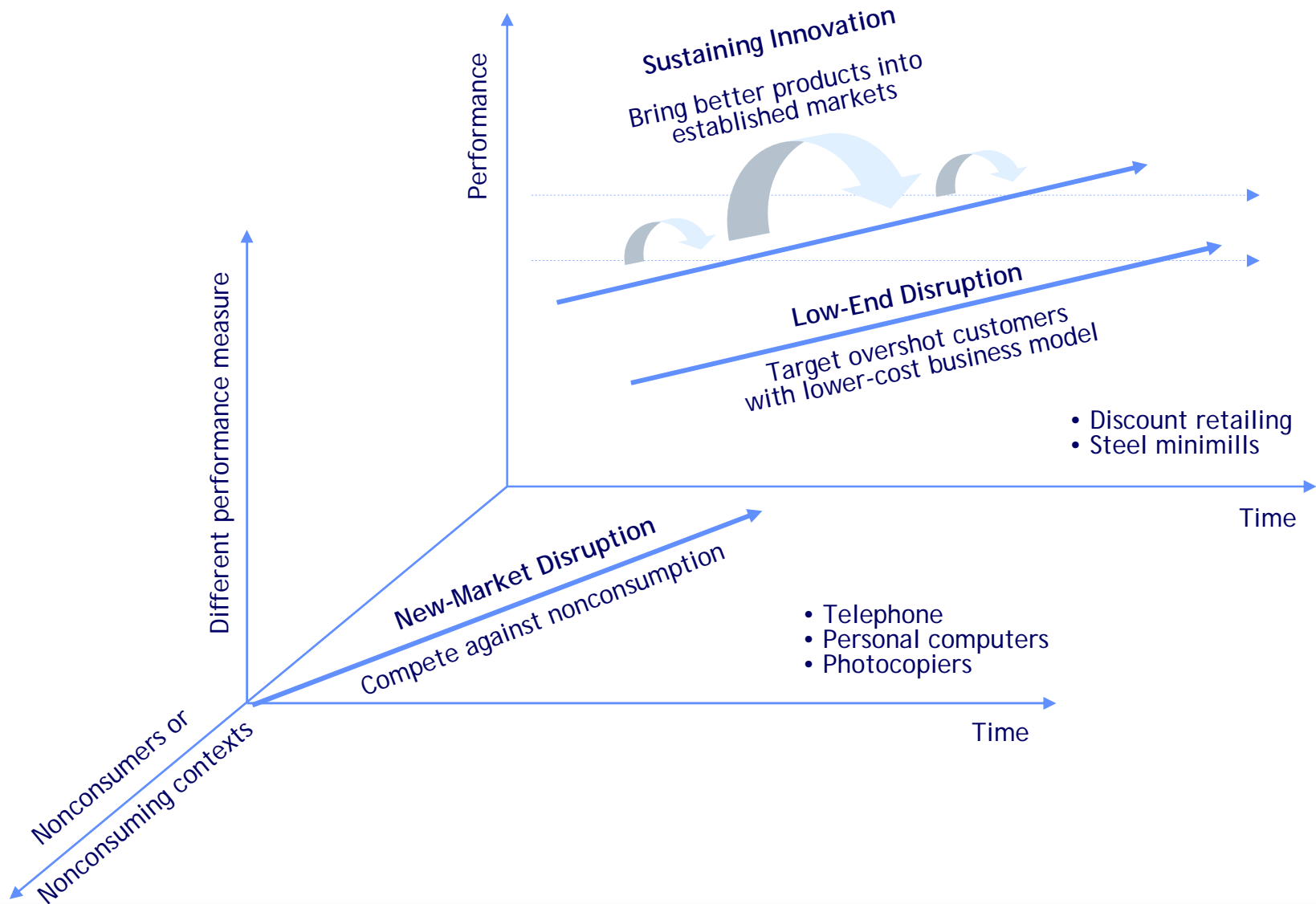
Ensure a Compelling Message and Internal Consistency

Stories were written up for each scenario:
A) "Business as usual... with a twist";
B) "Unbundling of information and advertising";
C) "Consumers in control";
D) "Cybermedia". Scenarios were used in strategy making and in communicating a shared view of possible futures within the firm.

Write Scenario Stories

Use Scenarios for Strategy Making

What is the Disruptive Innovation Theory?



Christensen et al. (2004) *Seeing What's Next*

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How to Create Parallel Organizational Capabilities?

✿ Set Up a New Venture Unit

- Set up a separate organization with the mandate to create new business opportunities beyond the core
- Give the unit a measure of freedom and carefully manage the integration-separation trade-off

✿ Give Individual New Ventures a Life of Their Own

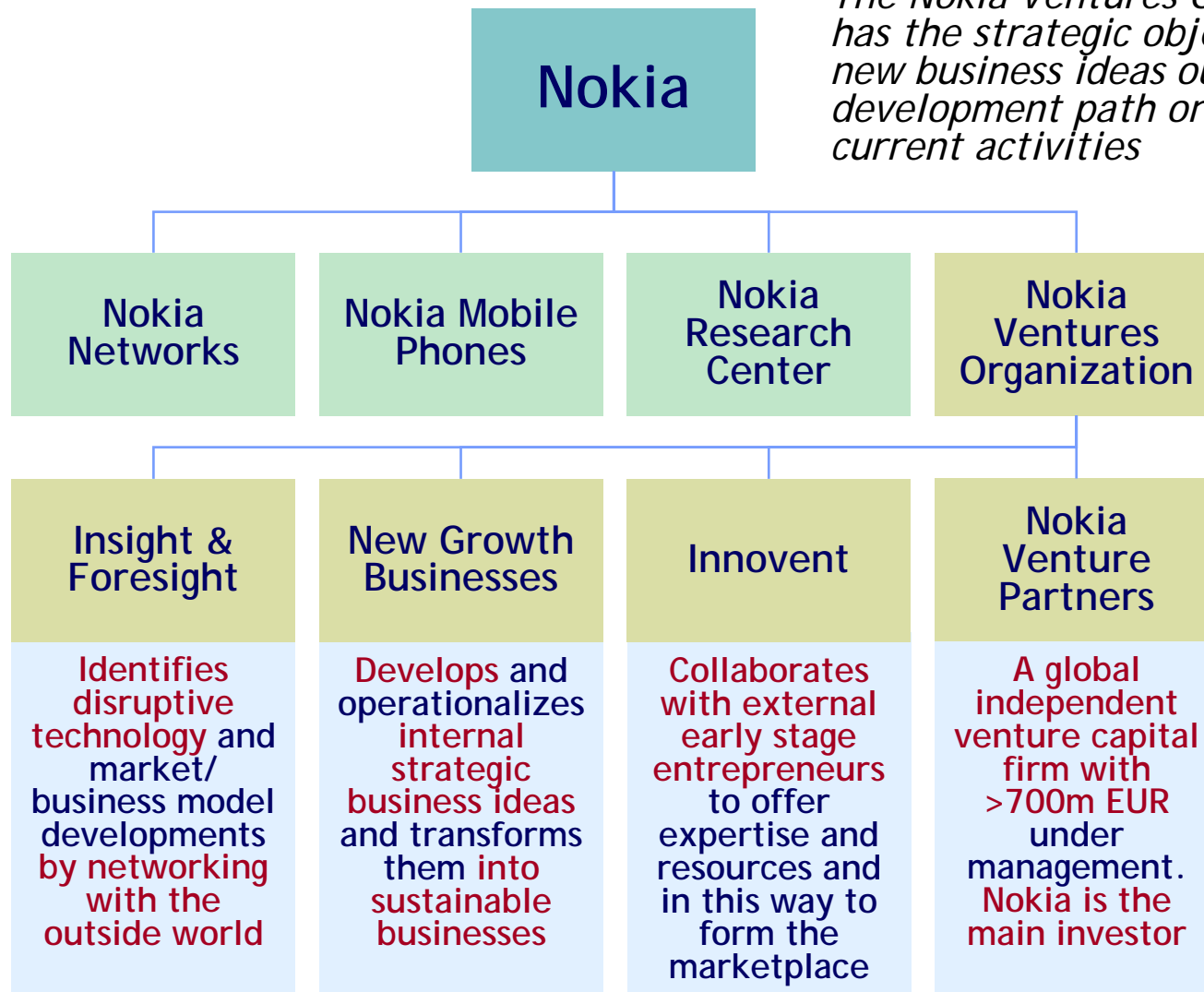
- Manage highly innovative ventures differently in terms of...
 - ... *staffing* (bring on board new competences and perspectives)
 - ... *structure* (report to a level above or distinct from business units)
 - ... *process* (use a learning-based approach to project management)
 - ... *culture* (focus on discovery and experimentation) – see Govindarajan & Trimble (2005)
- The innovativeness of new ventures (and, hence, their need for a separate managerial approach) is defined along three dimensions:
 - Newness of the industry, market or product category
 - New kind of value proposition or business model
 - New competences and processes required

✿ Create a Radical Innovation Hub

- Dedicate full-time people to stimulating radical innovation and helping intrapreneurs with idea enrichment and communication – see Leifer et al. (2000)
- The hub helps to...
 - ... link technical people and ideas to business opportunities and market know-how
 - ... link great ideas to seed funding
 - ... link intrapreneurs to each others in order to enable collaborative 'skunk work'

What is a New Venture Unit?

The Nokia Ventures Organization (NVO) has the strategic objective of creating new business ideas outside the natural development path or focus of Nokia's current activities



Turnover for NVO is approximately 2% of Nokia's total turnover. There are 1,800 employees (including the ventures)

Arthur D. Little "Venturing for Innovation," Based on a global ADL study December 2002

What are the Managerial Changes Required of Radical New Ventures?

☀ Staffing

- Hire outsiders at both the operational and the management level so that there is a mix of insiders and outsiders
 - Consider hiring an outsider to lead the new venture

☀ Structure

- The head of the new venture should report to a level above that of business unit managers
- Over time, the new venture finds its own approach to managing its business functions and interfacing with the functional groups of the mainstream organization. At some stage, the venture may be transitioned into an established division or even become a new business division

☀ Processes

- Standard processes used to manage incremental innovation tend to presume a level of predictability that cannot be expected from new ventures that, instead, require a high level of flexibility and an ability to make discoveries and learn from experiences
- Accountability for new venture executives should be shifted from measuring performance against plan to a more subjective evaluation of the ability to learn and adapt
 - Performance metrics from the mainstream organization cannot be indiscriminately applied to new ventures (particular care should be taken with the profitability metric)

☀ Culture

- The new venture must be given room to develop a unique culture that places a premium on experimentation and learning (within the broad ethical and value principles from the core organization)

Adapted from: Govindarajan & Trimble: *Ten Rules for Strategic Innovators*

How to Assess the Innovativeness of a New Venture?

The need for a separate approach to managing the new venture depends on its innovativeness along three dimensions:

❁ Business Model

- How does the new venture's business model differ from that of the core business?
 - Who are our customers?
 - What value do we provide them?
 - How do we deliver that value?

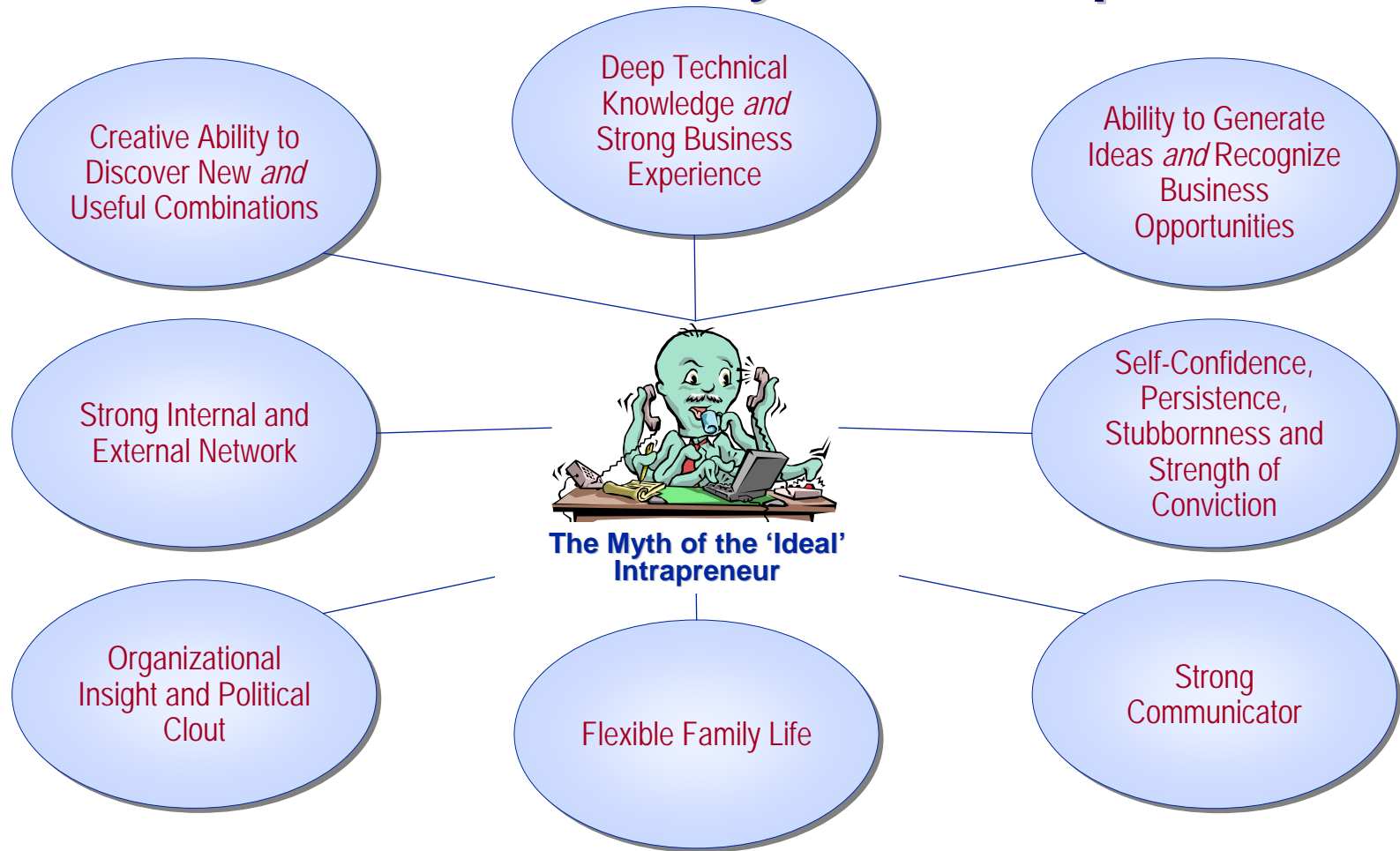
❁ Competences

- How does the new venture's desired competency set differ from the core business?
 - What areas of expertise does the new venture need?
 - What is the relative importance of each?
 - Typically power is vested in the people who have the core skill that creates a competitive advantage
 - How does this differ from the core business?

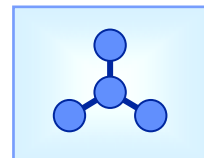
❁ Uncertainty

- How uncertain is the new venture's business model relative to the core business?
 - How should predictions and forecasts be used?
 - On what basis can managers be held accountable?
 - There is a need for the venture to abandon a deeply embedded assumption of *reliable predictability*
 - The typical situation is this: CEOs report aggregate predictions to investors and hold managers accountable for planned contributions by making results vs. plan the primary basis for judging managerial performance. Belief in this approach to accountability is strong – but strategic experiments are just that – experiments. They are *reliably unpredictable*.

What is the Profile of the Mythical Intrapreneur?



From the Lone Genius
to the Networked Radical Innovation Hub...



What is a Radical Innovation Hub?

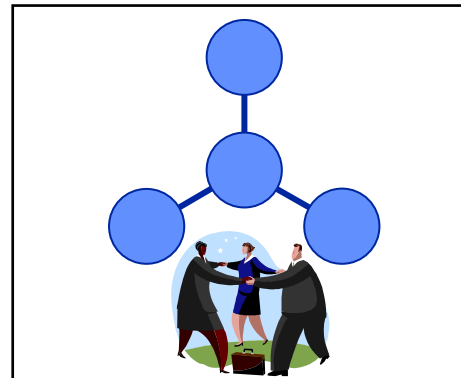


A Hub Links
Technical Ideas
with Business
Opportunities

A Hub is a Home
Base for Those
Who Play a Role in
Making Radical
Innovation Happen

A Hub Recruits &
Trains Those Who
Thrive on Radical
Innovation

A Hub is a Place for
People to Go with
Radical Ideas



The Radical Innovation Hub

A Hub Joins
Together
Competences and
Creates a Network
of Entrepreneurs

A Hub Stimulates
and Captures
Breakthrough Ideas

A Hub is a
Knowledge Center
for Cumulating
Learnings on
Radical Innovation
Management

A Hub Evaluates
and Incubates
Radical Ideas

A Hub Assists in
Managing Radical
Projects and in
Transitioning them
to (New) Business
Units

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How to Engender a Culture Conducive to Radical Innovation?

☀ Embrace Risk and Celebrate 'Failure'

- Create a culture that encourages (calculated) risk taking
 - Risk taking is not only about making bold decisions but also about avoiding red tape, excessive analysis, and management by committee
- Celebrate 'failure' as an inevitable part of the learning journey of discovery driven innovation

☀ Develop Leadership Practices for Creativity

- Employ leadership practices that engender a climate for creativity and innovation
 - *Challenge*. Give people (new) tasks that stretch their capabilities
 - *Freedom*. Give people autonomy concerning how to reach goals
 - *Resources*. Give people sufficient resources (but not too many) to accomplish their mission
 - *Work Group Dynamics*. Match people who work well together and ensure some group diversity
 - *Supervisory Encouragement*. Recognize and encourage the creative endeavors of employees
 - *Organizational Support*. Ensure collaboration and information sharing (as opposed to infighting and politics)
– see Amabile (1998)

● Instill Creativity-Stimulating Practices

- Ensure an attractive career path for intrapreneurs
 - Promotion, prestige, rewards, recognition, and membership of academy/fellowship
- Bring in people with fresh perspectives (from outside the industry)
- Build an organization with passion and conviction in the face of adversity
- Develop a discovery driven and experimental (prototyping) approach to innovation
- Look for value gaps in the market and challenge established industry assumptions
- Build on each other's ideas (instead of shooting them down)
- Give (selected) people slack time for 'skunk work'

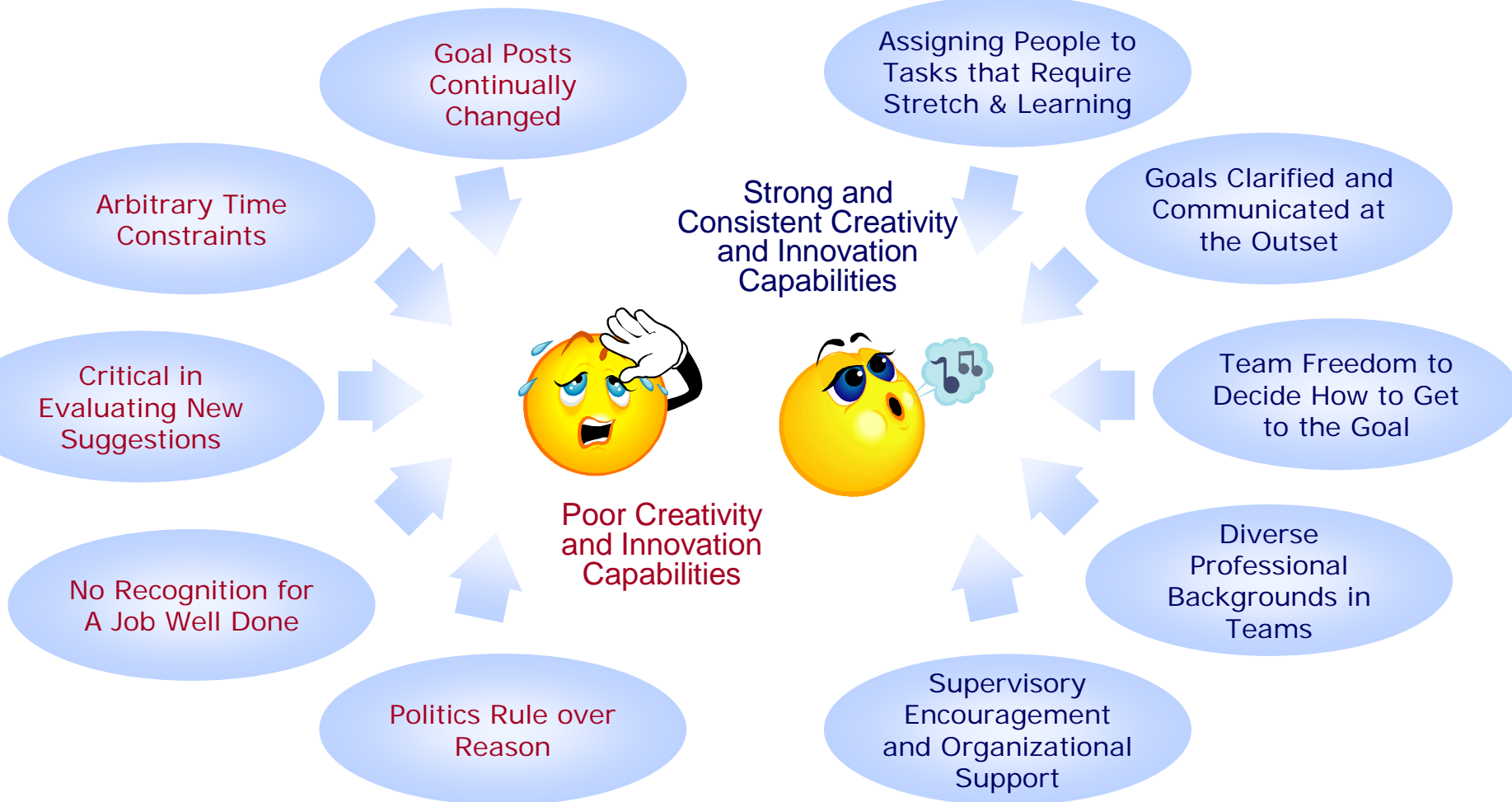
☀ Build a network of intrapreneurs

- Set up a network of people with an interest in invention and business building
 - A positive environment for idea enrichment and collaboration on new ideas
 - A community with seminars and idea exchange events as well as on-line blogs and wikis
 - An off-the-radar setting for collaborative skunk-work and idea gestation
 - A network owner, who creates the agenda, organizes events and infrastructure, and facilitates collaboration

What is the Difference Between a Good and a Lousy Climate for Creativity?

'National'

'Chemical Central'



Note: National and Chemical Central are real companies, but the names are not

Amabile, Teresa M. (1998) "How to Kill Creativity," *Harvard Business Review*, September-October.a

What are the Six Mechanisms for Stimulating Creativity?

Challenge

Match people to the right tasks that stretch their capabilities (but not too much).

This match-making capability requires deep insights about employees and available tasks

Freedom

Give people autonomy concerning how to reach the goal. This enhances motivation and sense of ownership.

People need not be involved in goal-setting. In fact, clear goals can enhance creativity. Goals must be reasonably stable.

Resources

Strike a balance to avoid too much or too little funding and staffing. Real and realistic time pressure motivates people.

Fake and impossible deadlines lead to distrust and burnout, damaging creativity. And creativity may take time. With tight resources, creativity is dedicated to resource appropriation.

Work-Group Dynamics

Put together people with diverse backgrounds to combust creativity.

Team members should also share excitement over the goal, be helpful to teammates, and recognize the insights of others.

This requires that managers assess both knowledge and attitudes.

Supervisory Encouragement

Praise creative efforts (also unsuccessful ones). Recognition is much more important than money.

Managers can also serve as role models in their perseverance.

Creativity is killed by criticism and intolerance of failure and time-consuming or negative evaluation. E.g. managers look for ways to shoot down ideas and failed projects harm reputation.

Organizational Support

Adapt systems, procedures and values to support creativity.

Mandate information sharing and collaboration. People must be recognized for their efforts (but not so much in terms of monetary reward).

Infigthing and politics take attention away from work and lessen the sense of mutual purpose.

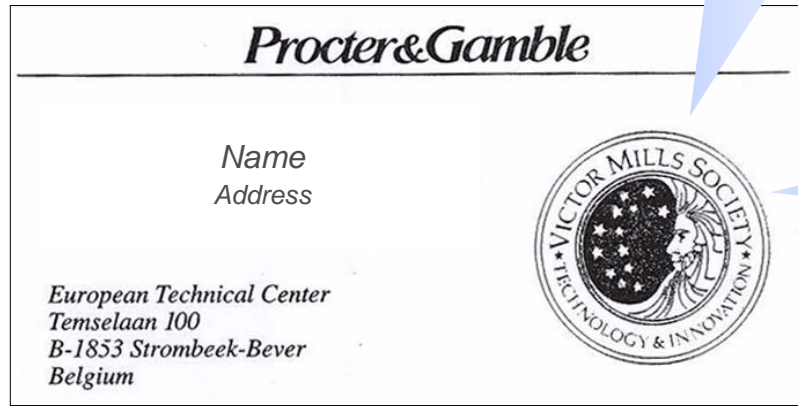
What are the 10 Dimensions of a Climate for Innovation?

1. Risk Taking
2. Dynamism/Liveliness
3. Freedom
4. Debates
5. Challenge
6. Idea Support
7. Trust/Openness
8. Playfulness/Humor
9. Conflicts (inverted scale)
10. Idea Time

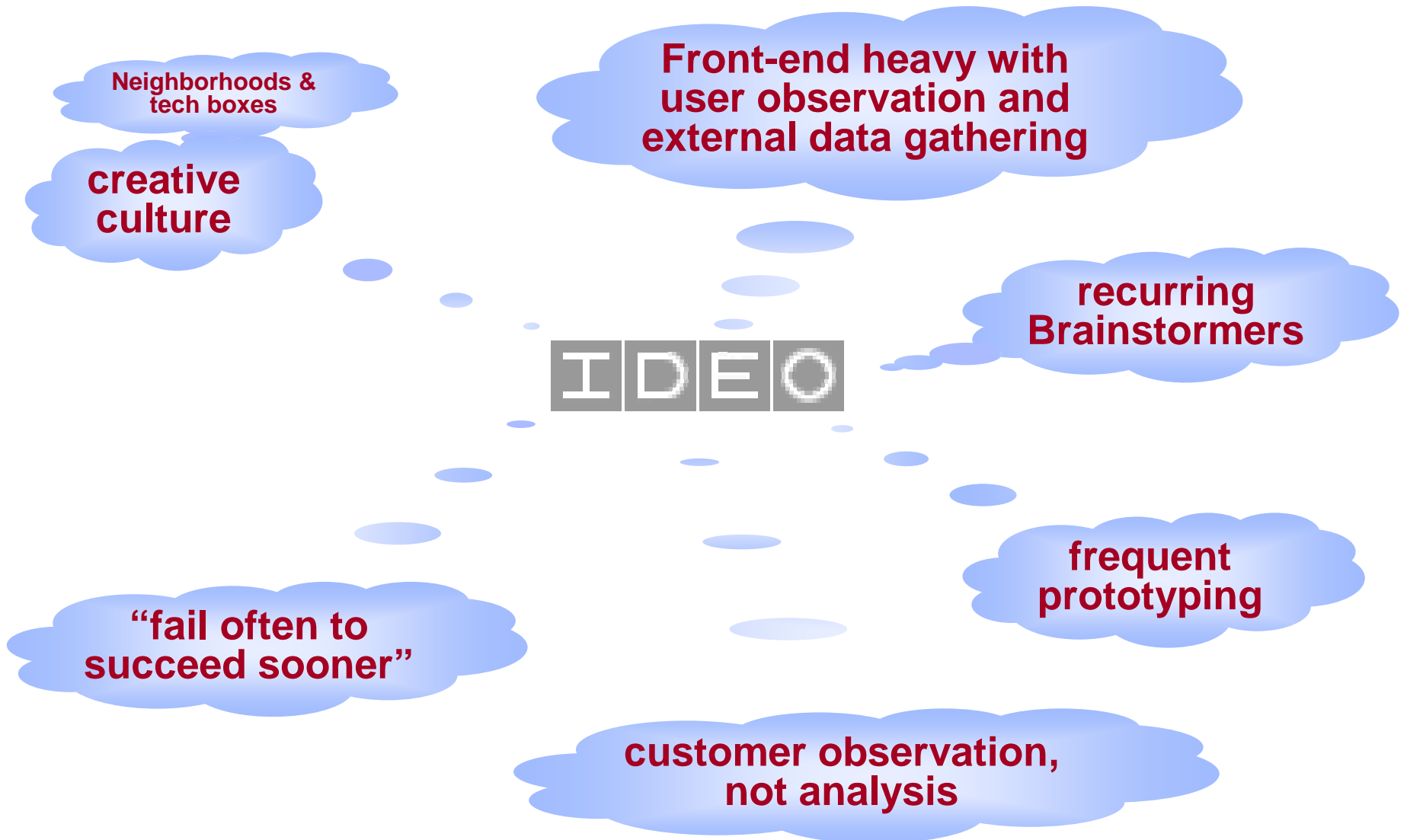
How Can Large Firms Motivate Intrapreneurs?

Freedom and
Time to Pursue
Own Ideas

Recognition and
Career Track for
Intrapreneurs



What is the Innovation Culture of IDEO?



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How to Boost the Front End and Do Learning-Based Project Management?

☀ Stimulate the Front End of Innovation

- Challenge the collective creativity of the organization with campaigns that encourage people to find new solutions to strategic objectives and value gaps in the market
- Create business plan competitions where people can apply to participate in a 2-3 months competition to create winning new ventures
- Give sufficient attention to the front end by investing in idea generation, experimentation, and the nurturing of these ideas (rather than directly give new ideas project status in the stage gate process)
- Engage in open innovation and in scanning the periphery, guided by a clear notion of customer needs (desired outcomes) and future scenarios
- Focus on prototyping and experimenting with new ideas in order to move them into incubation
- Create technology projects (as distinct from product innovation) to experiment with nascent technologies
- Set up dedicated teams of talented and motivated people to explore selected new markets and technologies

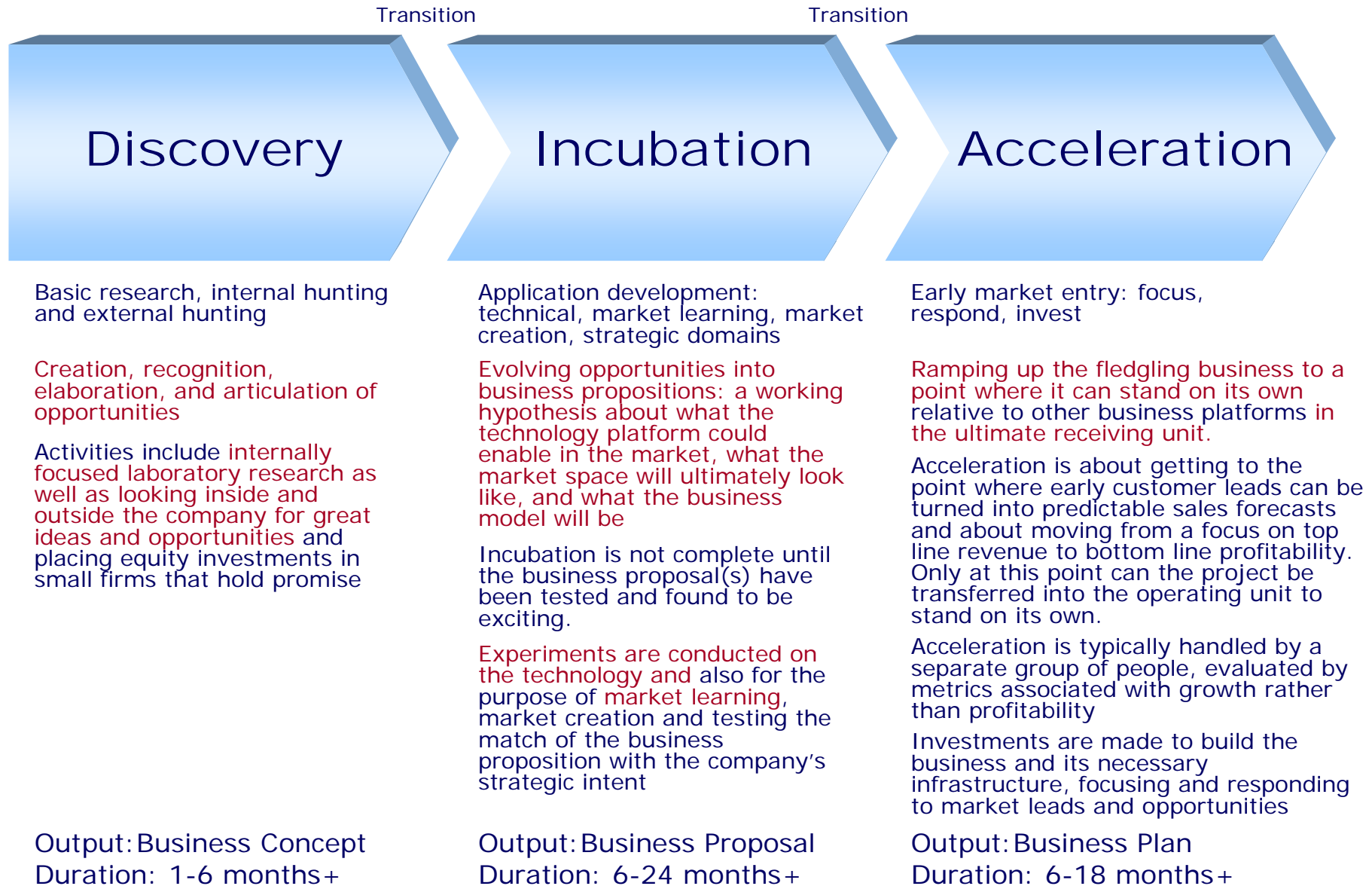
☀ Engage in Learning-Based Planning

- Move from a stage gate mind-set to a learning-based approach to managing projects
 - Ask the team:
 - What is unknown? What is known?
 - What are the core assumptions?
 - What must be learned to move the project further?
 - Evaluate performance in terms of the ability to discover, learn and adapt. Ask:
 - What have we learned (per Euro spent) since the last 'planning' session (and what remains to be addressed)?

☀ Evaluate Projects With Real Options and Gut Feel

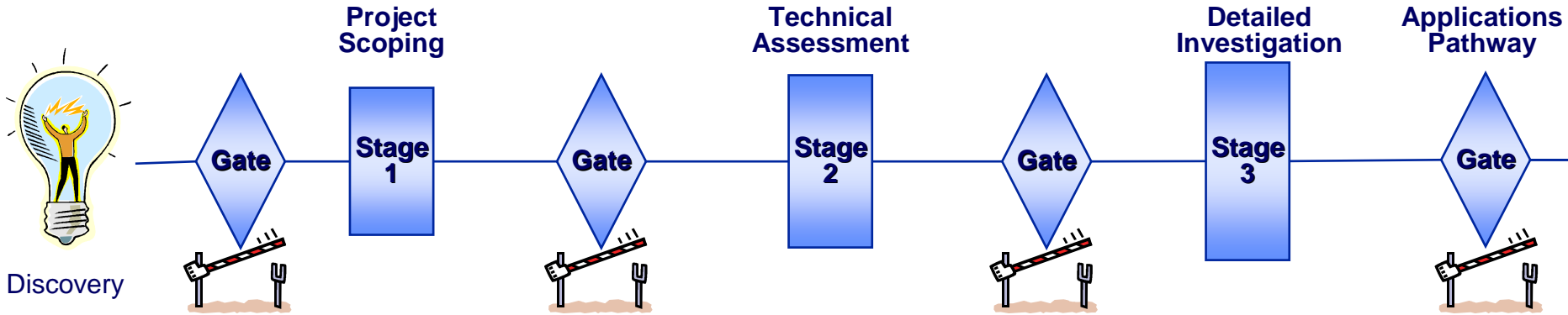
- Move from a profitability and net present value (NPV) mind-set in project evaluation to a focus on...
 - ... options and opportunities from new initiatives, including the potential to spawn multiple projects through forays into new markets and the development of new technological skills and platforms
 - ... gut feel and intuition as the gauge for evaluating the potential of new ideas and initiatives

What is the DIA Model of Radical Innovation?

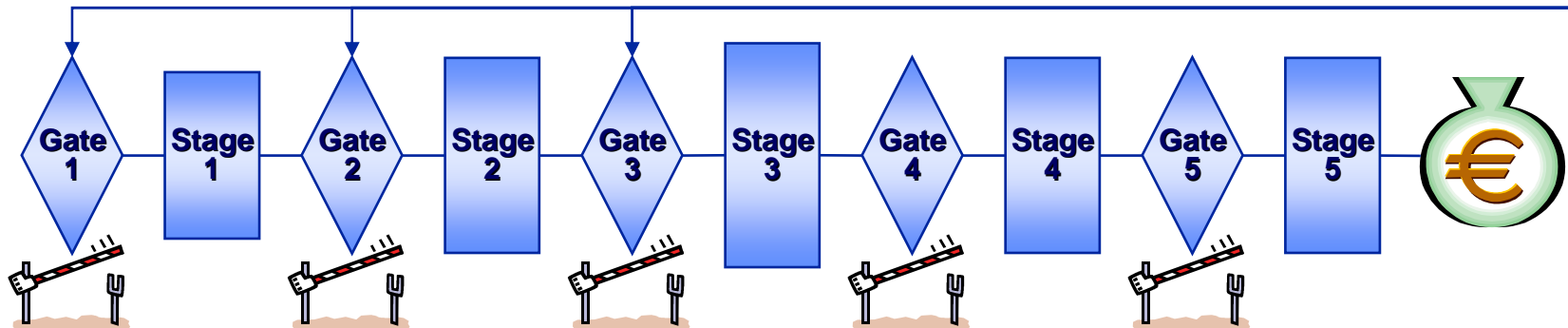


O'Connor, Gina Colarelli and Alan D. Ayers (2005) "Building a Radical Innovation Competency," *Research-Technology Management*, Jan-Feb, pp. 23-27.

What is the “Technology Development Stage-Gate” Process?



Can spawn multiple new product projects – these enter the new product process at Gate 2 (or possibly Gates 1 or 3)



The Standard 5-Stage Stage-Gate® New Product Idea-to-Launch Framework

Adapted from Robert G. Cooper, (2005) *Product Leadership. Pathways to Profitable Innovation*, Basic Books, New York

How to Make Idea Generation a Part of Daily Life?

Find Out What Customers are Trying to Get Done

Actively Look for Value Gaps in Customer Use Situations

Think of Solutions to Enable Customers to Do Things in a Better Way

Feedback Customer Insights to R&D in Order to Inspire Product Innovation

Customer Facing People

(Marketing, Sales & Technical Services)



Think of New Ways to Apply Technical Competences to Customer Care Abouts

Track Technical Developments to Look for Innovation Opportunities

Develop an External Orientation to be Exposed to New Trends and Market Opportunities

R&D Staff



What is the Event Approach to Idea Management?



The “War on Diabetes” Event at Bristol Myers Squibb

A campaign to boost awareness of diabetes and boost sales of a new range of diabetes drugs from BMS was publicized with boards and Town Hall meetings

Tip lines were set up on BMS’ intranet site so employees could submit ideas

The campaign generated 400 suggestions

After months of deliberation by the brand team, twenty concepts were selected and the ideas were adopted into a marketing campaign

For example, a couponing approach was quickly initiated to establish the new products among loyal customers and speed conversion from old to new prescriptions

One employee suggested a customized van touring the US to promote BMS treatments. The ‘Glucovan’ diagnostics unit traveled across the country screening over 140,000 people. The tour created goodwill for BMS and increased recognition of its Glucophage oral medicines.

As a result, the company experienced one of its fastest conversion rates in the history of the pharmaceutical industry.

In 2002 alone, Glucophage XR extended-release tablets grew 29% to \$297 million

Background information:

Glucophage is one of BMS’ most successful products and the most-prescribed drug for lowering blood sugar levels in Type II diabetes

The patent was due to expire in early 2002 and generic competition was likely to have a major impact on sales

Imaginatik’s event approach, using the Idea Central web-system, was used to enlist help from the global work force to find ways of extending the glucophage relationship with prescribing doctors and patients

How Does the Initial Vision for a Venture Compare to the End Result?

Peter Drucker, 1985:

"When a new venture does succeed, more often than not it is in a market other than the one it was originally intended to serve, with products and services not quite those with which it had set out, bought in large part by customers it did not even think of when it started, and used for a host of purposes besides the ones for which the products were first designed."

What are the Failings of PRM Under High Uncertainty?

Project Risk Management

Project Risk Management is a planning mind-set that presumes a reasonably clear idea of the desired end state

The idea is to plan for events and if something unidentified happens then rapidly get back on track

Deviations are dealt with through preventive, mitigating or contingent action



High Uncertainty Ventures

But what if the goal and the plan itself are wrong in the first place?

What if we do not know what it is we do not know?

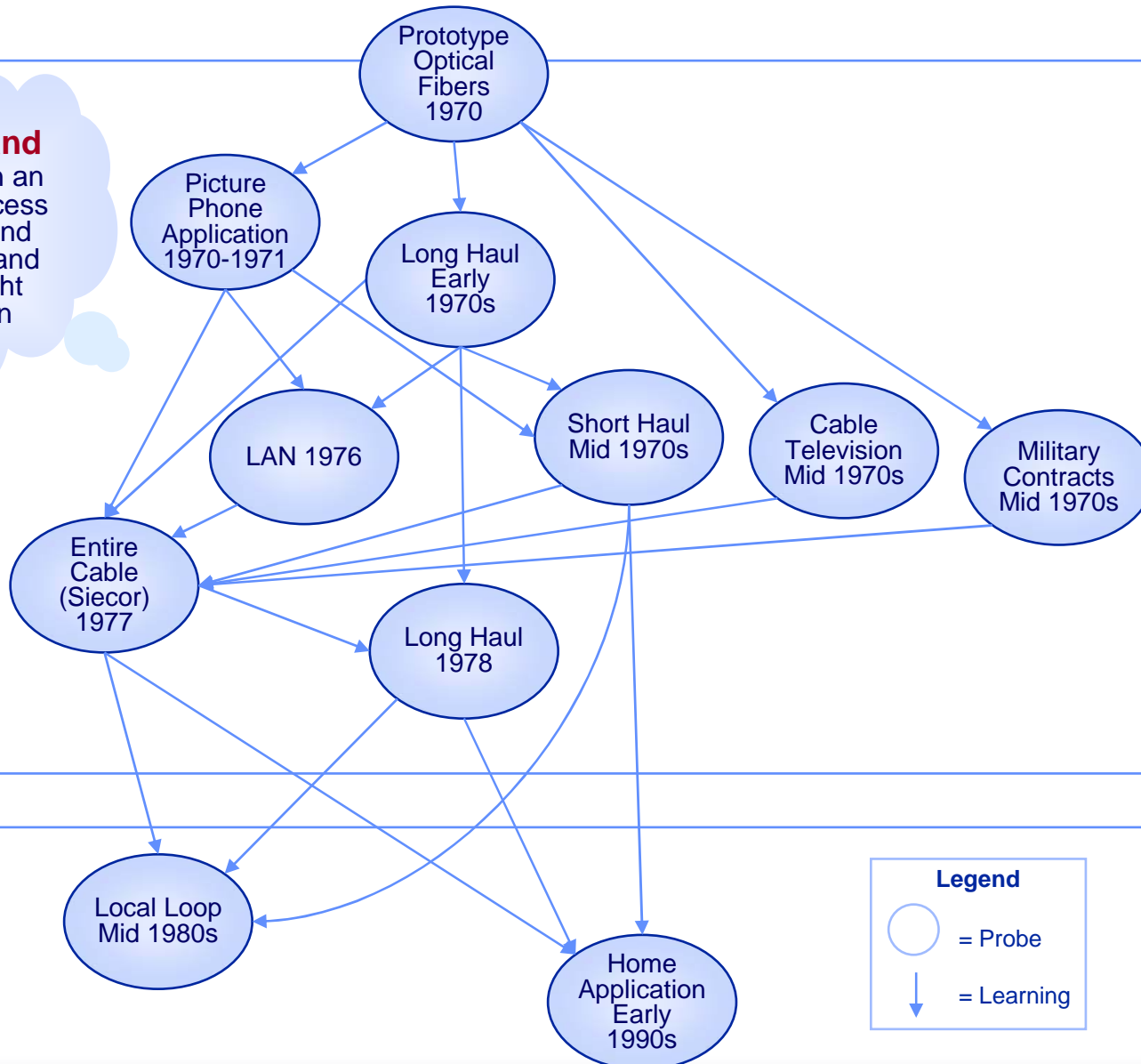
In other words, what if we face unknown unknowns - or "unk unks"?

Unk unks may be so fundamental that the project goal and path are, themselves, fundamentally unknown

In fact, initial plans for strategic ventures are almost always wrong!

What Was the Probe and Learn Process for Corning's Fiber Optics?

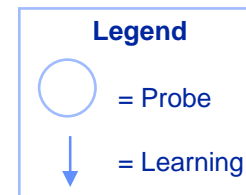
Probing and learning in an iterative process to understand the market and find the right application



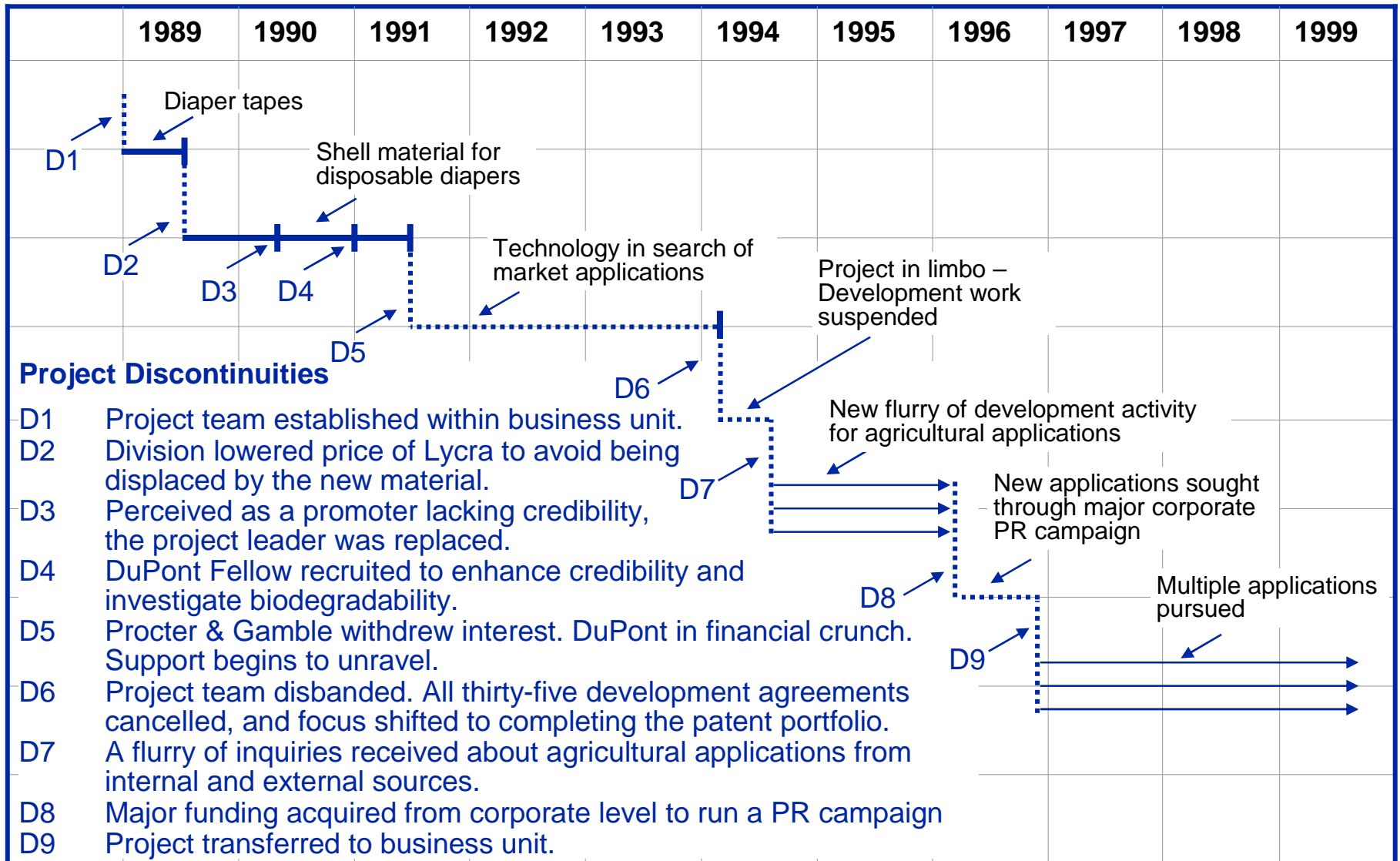
1970
Corning developed optical fiber with 16db/km

Critical Events

1982
De-regulation of telephones
1982
MCI Order for the long distance telephone market



What was the Radical Innovation Process for DuPont's BioMax?



Note: The variability of resource support is represented by the changes in the thickness of the lines. Thin lines indicate thin funding, and fat lines indicate sufficient funding. Each line represents the pursuit of a new application. The breaks (labeled "D" for "discontinuity") identify major changes or transitions in the life of the project.

What is the Learning-Based Mind-Set for New Business Ventures?

Proven and mature business

Accountable for results
Details
Predictions
Numbers
Forward-looking
Annual cycle
Financial measures



New and unproven business

Accountable for learning
Critical unknowns
Underlying logic
Trends
Forward-looking and historical
Monthly or quarterly
Leading indicators

What is the Learning Plan?

Technology

What is Known?

What is Unknown?

What are the Critical Assumptions?

What to Learn and How?

Market

What is Known?

What is Unknown?

What are the Critical Assumptions?

What to Learn and How?

Organization

What is Known?

What is Unknown?

What are the Critical Assumptions?

What to Learn and How?

Resources

What is Known?

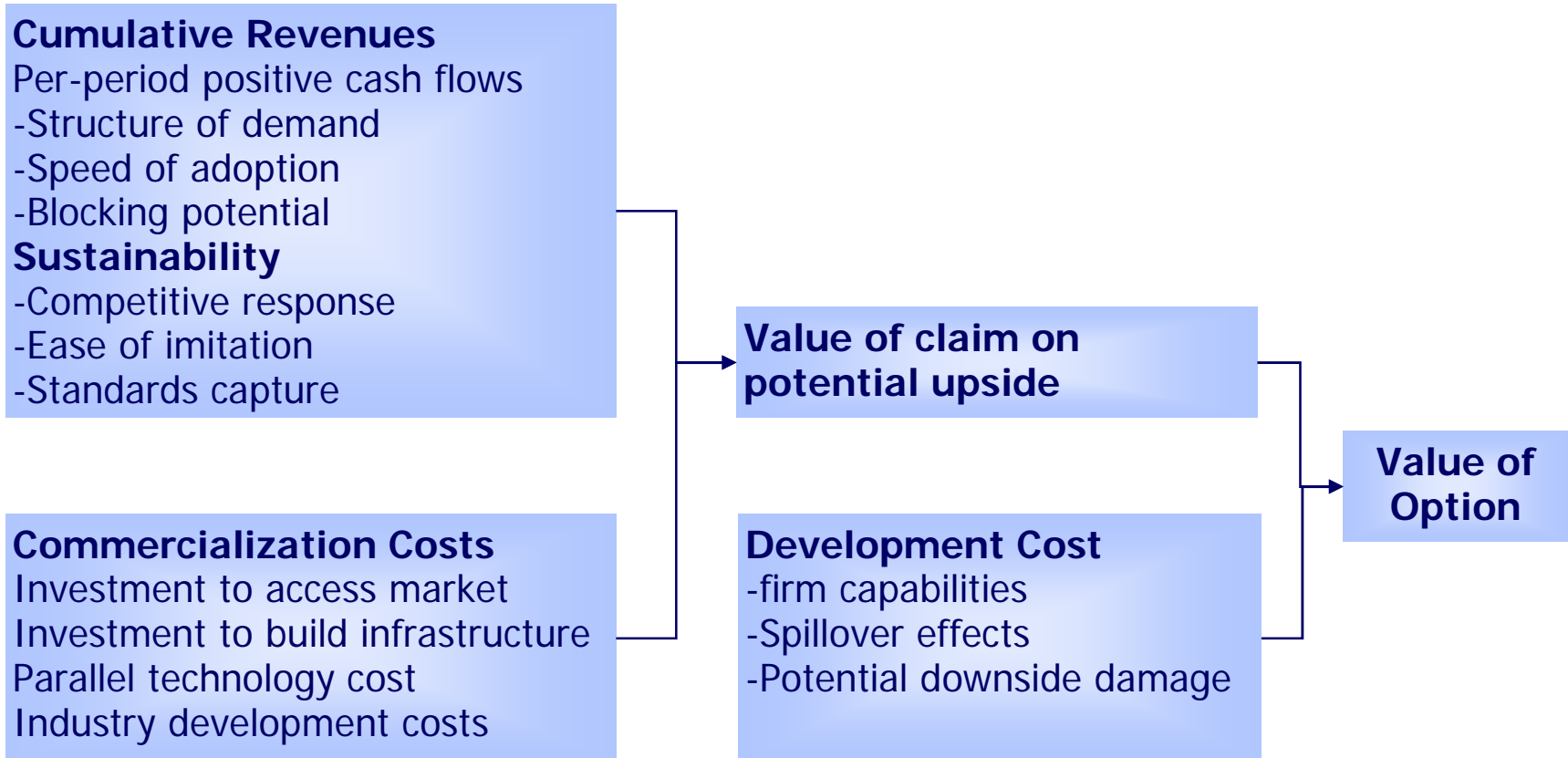
What is Unknown?

What are the Critical Assumptions?

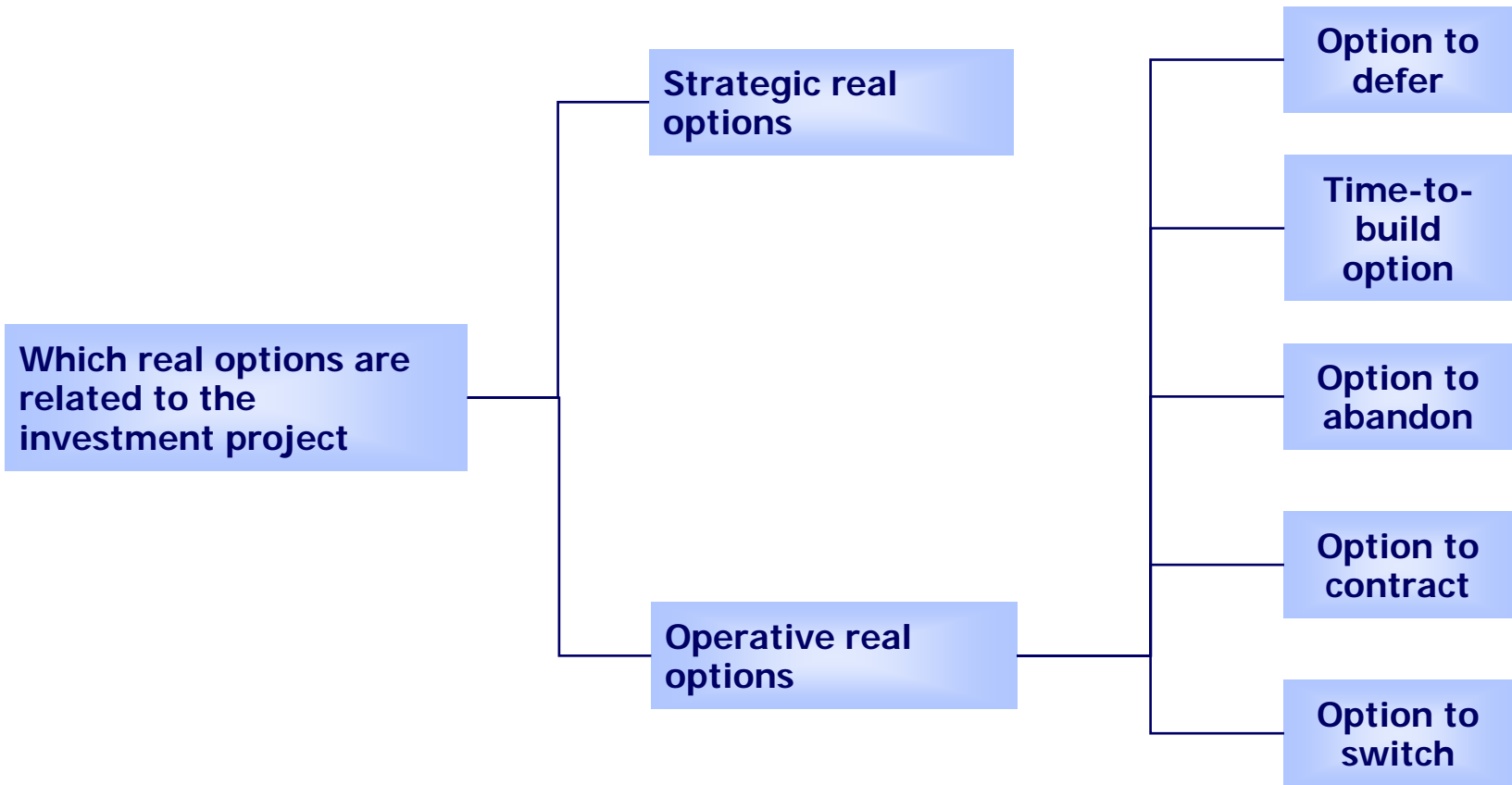
What to Learn and How?

What is the Strategic Technology Assessment Review (STAR)?

- ✿ For each of the elements and bullets in the figure a range of questions are included in the questionnaire



What is the Real Options Approach to R&D Project Evaluation?



How to Develop Radical Innovation Capabilities?



How to Engage in Open Innovation?

✿ Import Ideas From the Outside

- Look for ideas outside the firm instead of trying to develop everything from within
 - Guide the search with market vision and customer insights
- Look for ideas from technology upstarts, adjacent industries, and suppliers and use intermediaries to find ideas and external partners

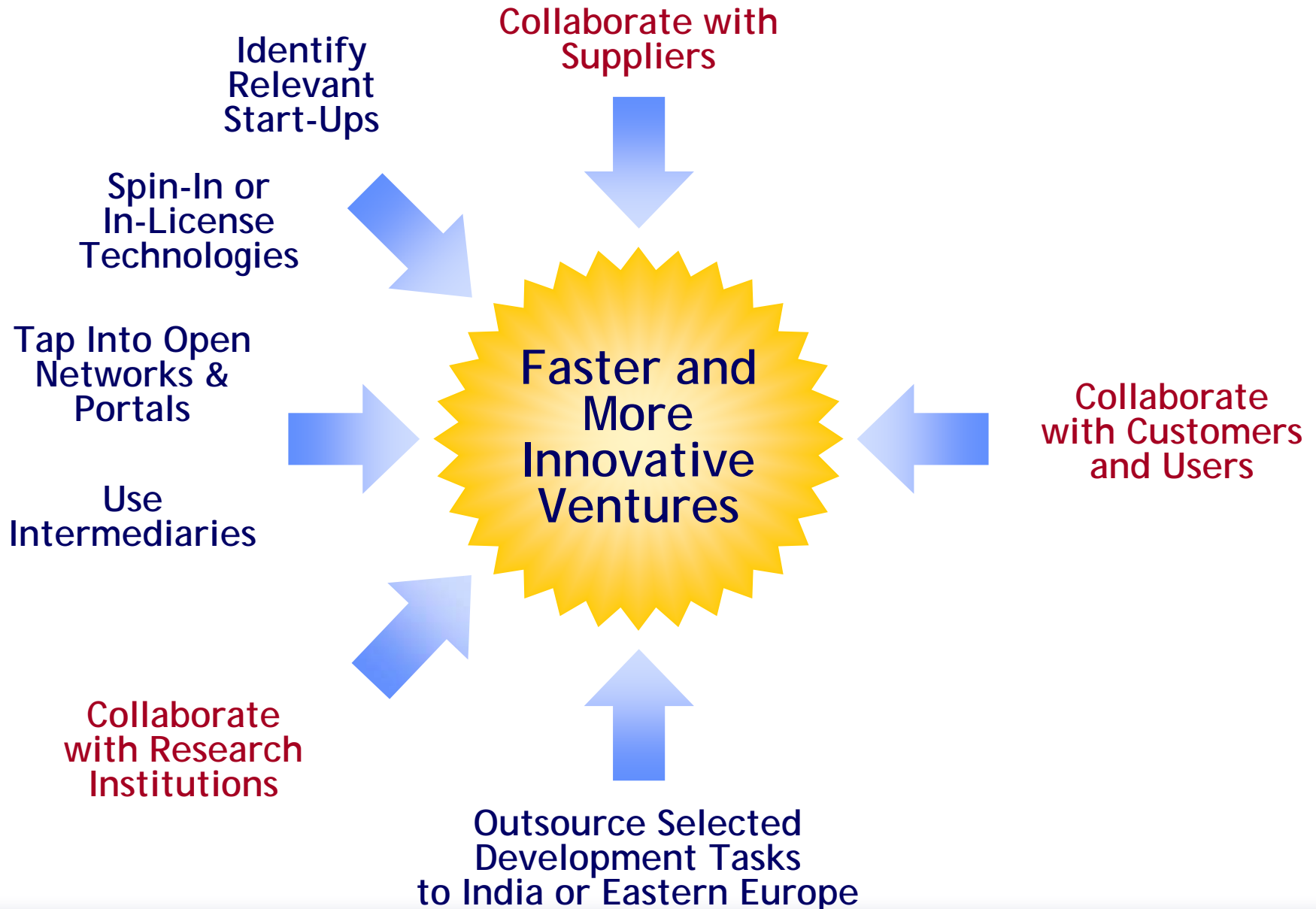
✿ Export Ideas To the Outside

- Look for new ways to put capabilities and patents into play

✿ Collaborate with Partners

- Develop new solutions together with partners, including:
 - Customers
 - Suppliers
 - Upstarts
 - Research institutions
 - Crowdsourcing
 - Find partners through open networks, portals, and patent brokers

How to Engage in Open Innovation?



What Have Leading Firms Done to **Export** Intellectual Capital?

✿ Schlumberger

- Schlumberger sells innovative ideas pertaining to oil field services to both customers and competitors. These ideas include ways to reduce drilling costs and increase data on reservoir characteristics collected during drilling
 - Schlumberger once sold oil field technology innovations only to customers that used its services; selling to competitors now allows the company to profit from its ideas in any oil well anywhere in the world

✿ IBM

- IBM uses excess capacity in its semiconductor fabrication facilities, or 'fabs', to manufacture chips for other companies. Recently, IBM also started offering design services and now designs and manufactures some competitors' chips
 - Renting out excess fab space lowers IBM's fixed costs for its own chips. IBM's intellectual property (IP) portfolio also offers IP insurance for its fab customers: IBM's extensive cross-licensing agreements reduce its customers' risks of being sued for IP infringement by another semiconductor company

✿ Dreyer's Grand Ice Cream

- Dreyer's sells the use of its logistics and distribution system to competitor Ben & Jerry's. This system tracks retailers' inventory at the checkout scanner, automatically places restocking orders, and bills the retailer
 - Sharing its system with another supplier spreads overhead costs across more volume. This increased volume also helps defray retailers' investments in scanners that use the Dreyer's system, encouraging additional retailers to adopt it

What is the Value of Exporting Ideas?

Dave Thompson, vice president of corporate strategy at Eli Lilly:

“We believe more and more that the free market tells you what a product or technology is really worth.

We’ve gone through great angst over whether to [license out] a project that we thought was really good. Then we take it to the free market and find out nobody wants it. That’s actually positive.”

What Have Leading Firms Done to **Import** Ideas?

☀ Intel

- Intel has opened four small-scale **research laboratories, or 'lablets', adjacent to universities in the US and UK to promote cross-pollination.** A university professor runs a lablet for two years, then returns to teaching so another faculty member can rotate
 - In this way Intel gains informal access to a wide variety of faculty networks in a systematic way; faculty running the labs gain insight into Intel's R&D process. Products have yet to be developed by the newly opened lablets

☀ Eli Lilly

- Lilly recently launched **InnoCentive (www.innocentive.com)** as an on-line knowledge broker. **Lilly and other firms post R&D problems on the site and solicit solutions from individuals and companies worldwide**
 - In this way Lilly has received over 200 proposed solutions from visitors around the world, including scientists in China and Russia. The company has paid more than a dozen 'solvers' for their proposals

☀ Toy makers and retailers

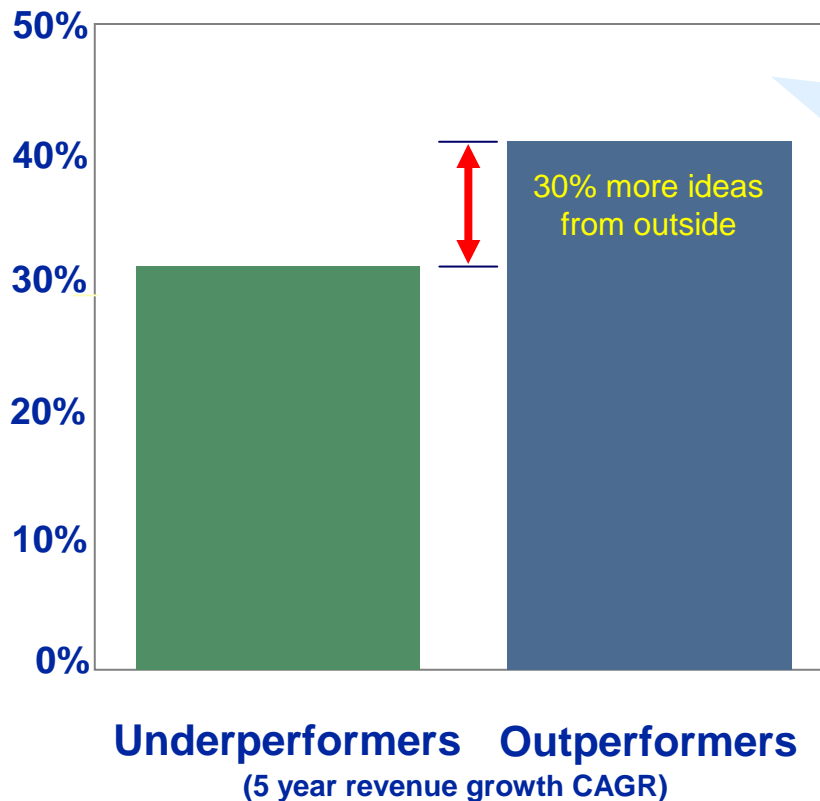
- **Mattel, Wal-Mart, and other toy manufacturers and retailers use idea brokers like Big Idea Group (www.bigideagroup.net) to scout on their behalf for new toy ideas.** Big Idea Group invites inventors to submit ideas and then refines and pitches the promising ones.
 - Big Idea Group has placed a number of toys with companies like Basic Fun – which bought Tiny Totes, a line of miniature fashion handbags – and Gamewright – which bought the games Snap and Fowl Play

Chesbrough, Henry W. (2003) "A Better Way to Innovate," *Harvard Business Review*, July.

Out-Performers Source 30% More Ideas from the Outside

765 CEOs and leaders from across the world participated in the survey -
80% of respondents were interviewed in person

Quantity of New Ideas from External Sources



- 9 industries source more than 40%
- 3 industries — Media & Entertainment, Telecommunications, and Chemicals/Petroleum — source >50% from outside

A CEO:

“If you think you have all of the answers internally, you are wrong.”

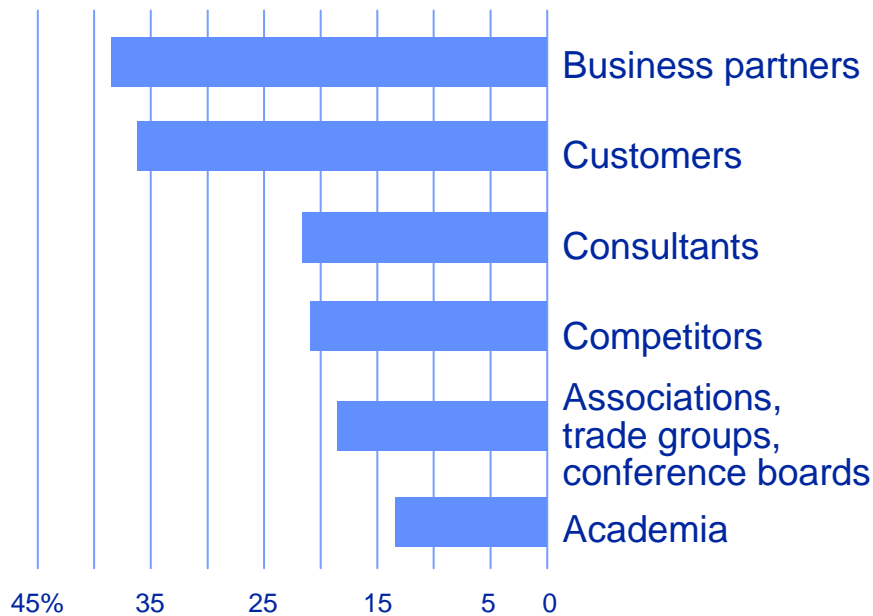
Companies with higher revenue growth reported using external sources significantly more than slower growers

Source: IBM's Global CEO Study 2006

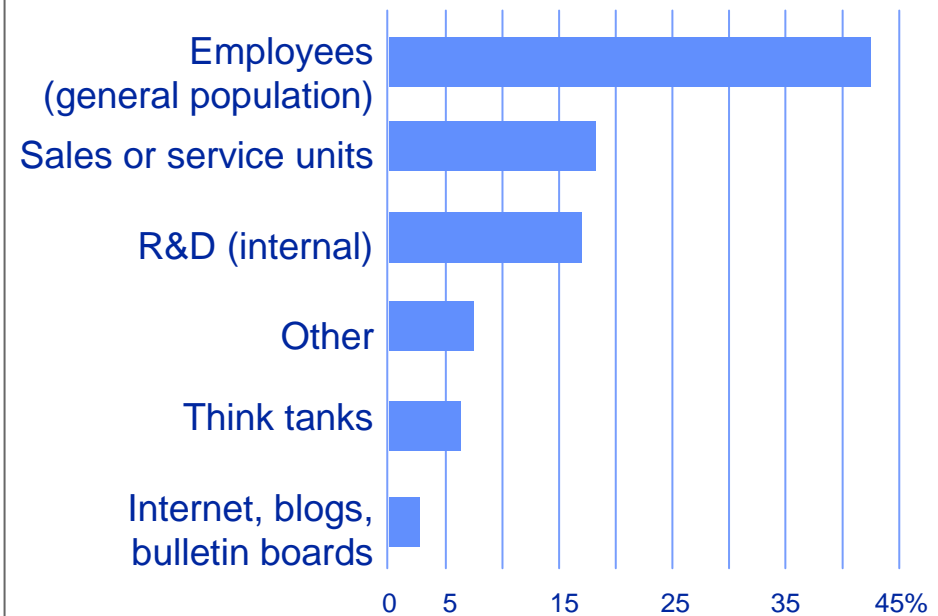
Partners and Customers Edge out Employees for Ideas

Sources of New Ideas and Innovation

External



Internal



A CEO:

“Today...more capability and innovation in the marketplace than we could try to create...”

Source: IBM's Global CEO Study 2006

What Has P&G Found Out about Connect and Develop?

“For connect and develop to work, we realized, it was crucial to know exactly what we were looking for.”

Huston & Sakkab (2006)

At P&G, the search starts with the top ten consumer needs: Once a year, businesses are asked what consumer needs, when addressed, will drive the growth of their brands, leading to a list of top-ten-needs for each business and one for the company overall.

Examples of consumer needs in different businesses:

- Reduce wrinkles, improve skin texture and tone
- Improve soil repellency and restoration of hard surfaces
- Create softer paper products with lower lint and higher wet strength
- Prevent or minimize the severity and duration of cold symptoms

Needs lists are developed into science problems to be solved, which are often spelled out in technology briefs

What is the Role of Technology Game Boards at P&G?

“Finally, in some areas, we use what we call technology game boards to evaluate how technology acquisition moves in one area might affect products in other categories. Conceptually, working with these planning tools is like playing a multilevel game of chess. They help us explore questions such as “Which of our key technologies do we want to strengthen?” “Which technologies do we want to acquire to help us better compete with rivals?” and “Of those that we already own, which do we want to license, sell, or codevelop further?” the answers provide an array of broad targets for our innovation searches and, as important, tell us where we shouldn’t be looking.”

How to Develop Radical Innovation Capabilities?



How to Do Customer Oriented Strategic Innovation?

☀ Drive Strategic Innovation Around Customers' Value Activities

- Rethink the business by moving away from an internal logic to optimizing towards a customer perspective to value creation
 - Identify customers' value activities and find ways to address them
 - Move from a product-centric internal orientation to a solution-centric customer orientation
 - Consider expanding the portfolio of services to deliver more complete solutions to customers

☀ Segment Markets in Insightful Ways

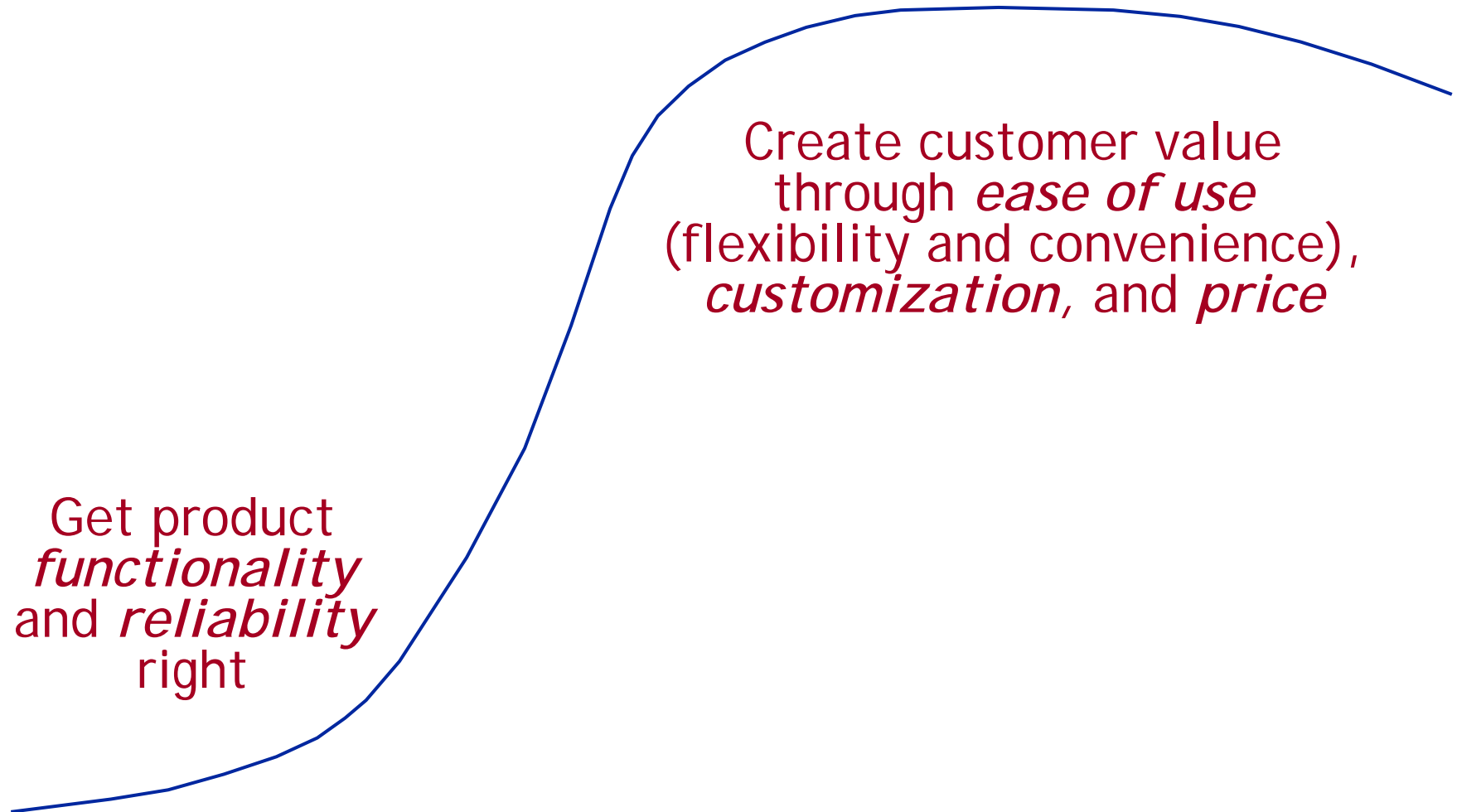
- Find segments of customer desired outcomes
 - Look for those outcomes that are underserved and, therefore, ripe for innovation. In other words, the outcomes that are considered important by users and for which few users in the segment are currently satisfied

☀ Identify and Address Unmet and Unspoken Customer Needs

- Use methods that go beyond existing products and attributes and delve deeper into unmet and unspoken customer needs:
 - Assessing the Future of Customer Value
 - Ethnographic Observation (Anthropology)
 - Mapping Desired Outcomes
 - Personas and Customer Scenarios
 - Co-Creation with Users or Business Customers
 - Rapid Prototyping to Test and Revise Ideas

How to Move Closer to Customers as Products Mature?

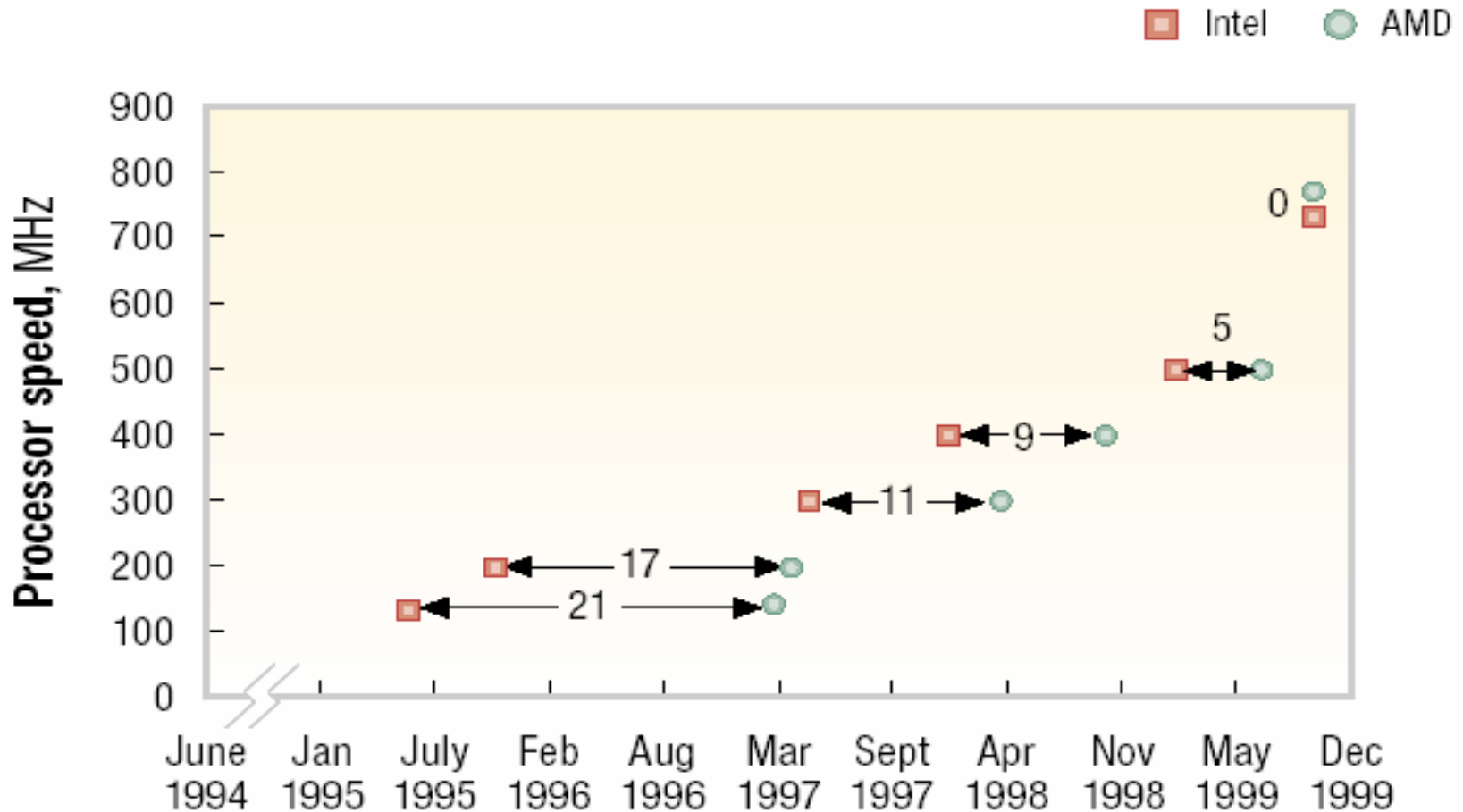
The Name of the Game Changes as the Product Category Matures



Inspired by Christensen et al. (2004) *Seeing What's Next*

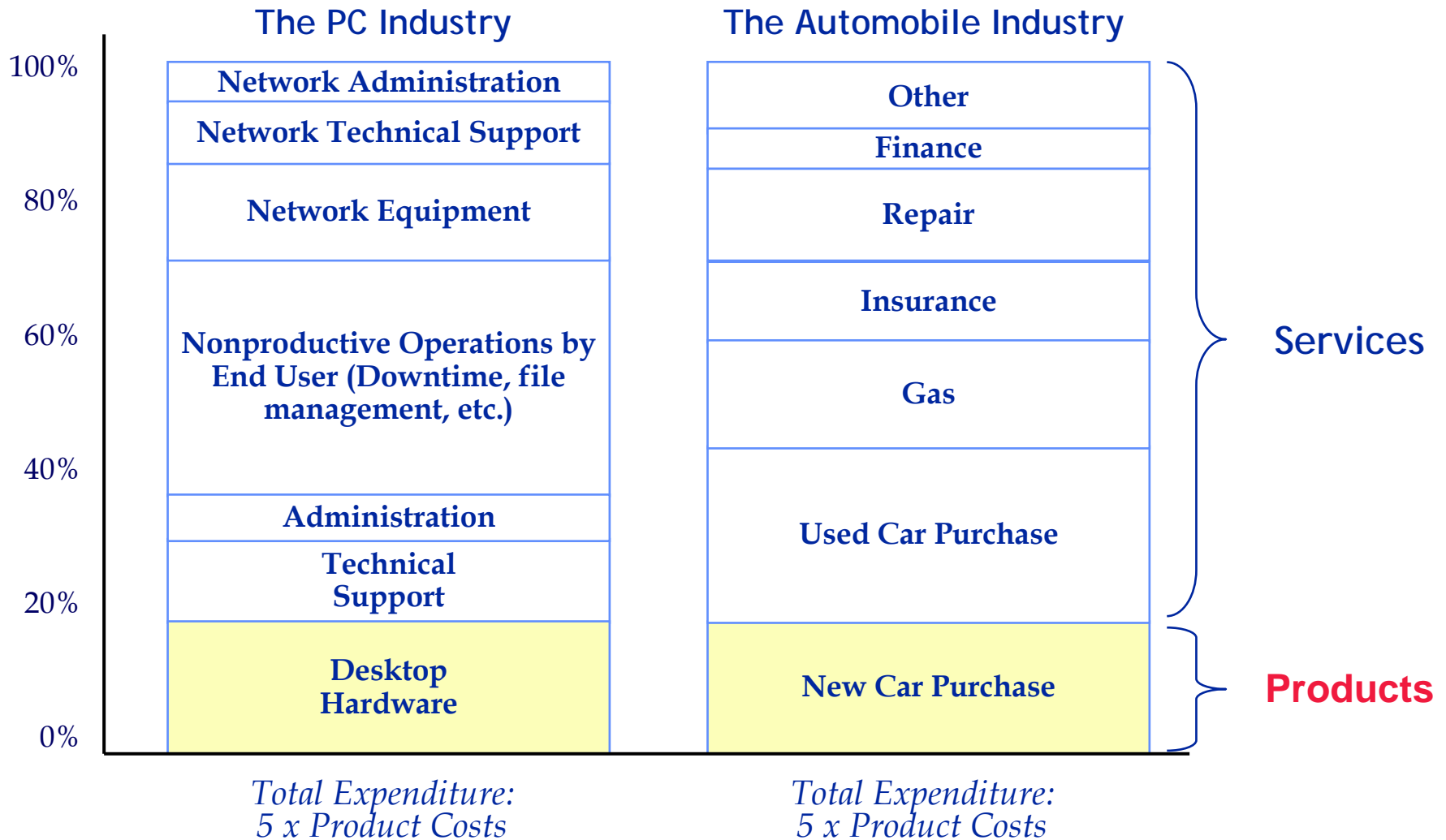
What is the Commoditization Crunch?

Interval between introduction of Intel and comparable Advanced Micro Devices (AMD) chips,¹ months



Source: McKinsey Quarterly

Where is the Money in the PC and Automobile Industries?



Wise, Richard and Peter Baumgartner (1999)

"Go Downstream: The New Profit Imperative in Manufacturing," *Harvard Business Review*, September-October

How to Move from an Internal to a Customer Orientation?

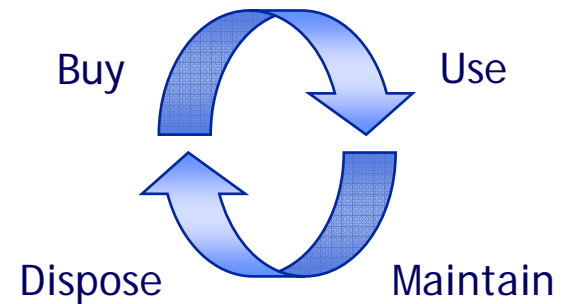
Product-Centric
Internal Orientation

Optimize the firm's own value chain to make and deliver the best product and increase market share



Solutions-Centric
Customer Orientation

Understand the customer's value chain to deliver complete solutions and complementary services



Why Move from Being Product Centric to Customer Oriented?

Theodore Levitt:

“Customers don’t want a quarter inch drill.
They want a quarter inch hole.”

What Were the Customer Requirements Identified by Motorola?

What do users of mobile radios want to get done in use situations?

1. Minimize the number of messages that are misunderstood
2. Minimize the number of interruptions during a communication
3. Minimize the amount of interference encountered when communicating
4. Minimize the effort required to communicate discreetly
5. Minimize the number of annoying incoming communications
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9. Minimize the likelihood of making inadvertent changes to established settings
10. Minimize the effort to operate the device with gloves on
11. Minimize the effort required to program the device

What Requirement-Based Segments Were Identified By Motorola?

<p>Segment 1 - Privacy</p> <p>The segment includes police, security personnel and others who use mobile radios to communicate in a secure, private and covert way</p>	<p>Segment 2 – Emergency</p> <p>The segment includes firefighters and others who use radios in life-threatening situations</p>	<p>Segment 3 – Administrative</p> <p>The segment includes truck drivers, locomotive engineers and others who use the radio to coordinate and carry out their jobs</p>
<p>Desired outcomes</p> <p>4. Minimize the effort required to communicate discreetly</p> <p>7. Minimize the effort required to establish a record of the communication</p> <p>8. Minimize the number of communications that can be intercepted</p>	<p>Desired outcomes</p> <p>1. Minimize the number of messages that are misunderstood</p> <p>2. Minimize the number of interruptions during a communication</p> <p>3. Minimize the amount of interference encountered when communicating</p> <p>9. Minimize the likelihood of making inadvertent changes to established settings</p> <p>11. Minimize the effort to operate the device with gloves on</p>	<p>Desired outcomes</p> <p>5. Minimize the number of annoying incoming communications</p> <p>6. Minimize the time it takes to confirm receipt of a communication</p> <p>10. Minimize the effort required to program the device</p>
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What is the Role of Market Learning in Incremental versus Radical Projects?

Incremental Projects

Formal, disciplined and even quantitative effort to solicit direct customer input (Value Perspective 1) in order to establish the winning product concept in the customer's eyes.

Customers are familiar with the product concept and are asked to propose changes and respond to structured questionnaires. The classical STP approach is pertinent: segmenting, targeting, positioning.

Stage 1: quick assessment (e.g. focus group)
2: concept research to determine winning concept and decide on heavy spending
3: further tests and marketing planning
4: validation of product with field trials

Favored market learning techniques are: focus groups, concept tests, conjoint analysis and other such techniques that solicit expressed customer input on product features in a structured and often quantitative way

Projects are assessed on potential profitability, market share, and the ability to enhance competitive position (Value Perspectives 3 & 4). Assessments are reasonably accurate, since the market already exists.

Market learning approach

The role of market learning in the front-end

The role of market learning at each stage of the innovation process

Market learning techniques

Screening criteria for the new product project

Radical Projects

Exploratory, ad hoc, and qualitative. The project may start with technology, but there is a need to rapidly start exploring potential market applications through probing and learning, typically with prototypes (Value Perspective 2).

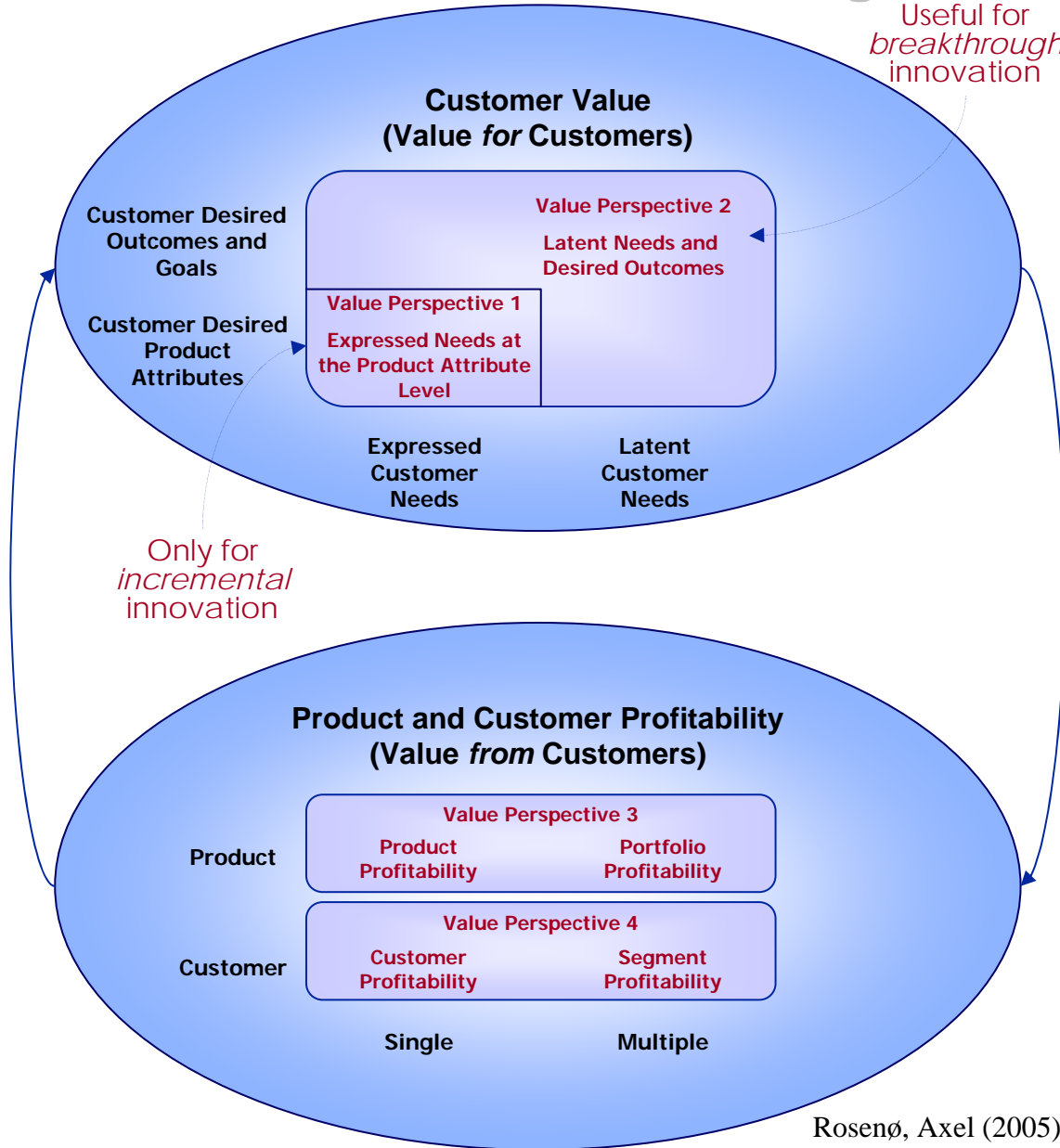
The idea may emerge from the market or from the laboratory. Initial market learning is typically oriented towards exploratory observation studies. Technology breakthroughs may be needed to get to the prototyping phase.

The focus is on getting past early stage technology learning to get to the prototyping stage, which is the main theme of the radical innovation process (but process may end up merging with the final stages of stage-gate process).

Market learning techniques include: observation studies, the lead user method, prototyping, collaboration, scenarios exercises and other such methods that help identify latent customer needs and desired outcomes

Since the market is ill-defined, it is difficult to assess potential profitability in the market. Hence, focus is on whether customers will value the product (VP 1 & 2) and of what sort of magnitude the opportunity is (rather than calculations).

What are the Market Learning Methods for Innovation?



Market Learning Techniques for Value Perspective 1

- Focus Groups
- Concept Tests
- Attribute Mapping

Market Learning Techniques for Value Perspective 2

- Assessing the Future of Customer Value
- Personas and Customer Scenarios
- Mapping Desired Outcomes
- Ethnographic Observation (Anthropology)
- Co-Creation with Users or Business Customers
- Rapid Prototyping to Test and Revise Ideas

Market Learning Techniques for Value Perspective 3

- Product Profitability Calculation
- Subjective Project Evaluation and Comparison
- Technology Roadmapping for R&D Resource Allocation
- Strategic Project Portfolio Prioritization and Alignment

Market Learning Techniques for Value Perspective 4

- Customer Lifetime Value
- Customer Relationship Value in Industrial Markets
- Profitability Segmentation
- Attractiveness Segmentation

Rosenø, Axel (2005)

What are the Relevant Market Learning Tools?

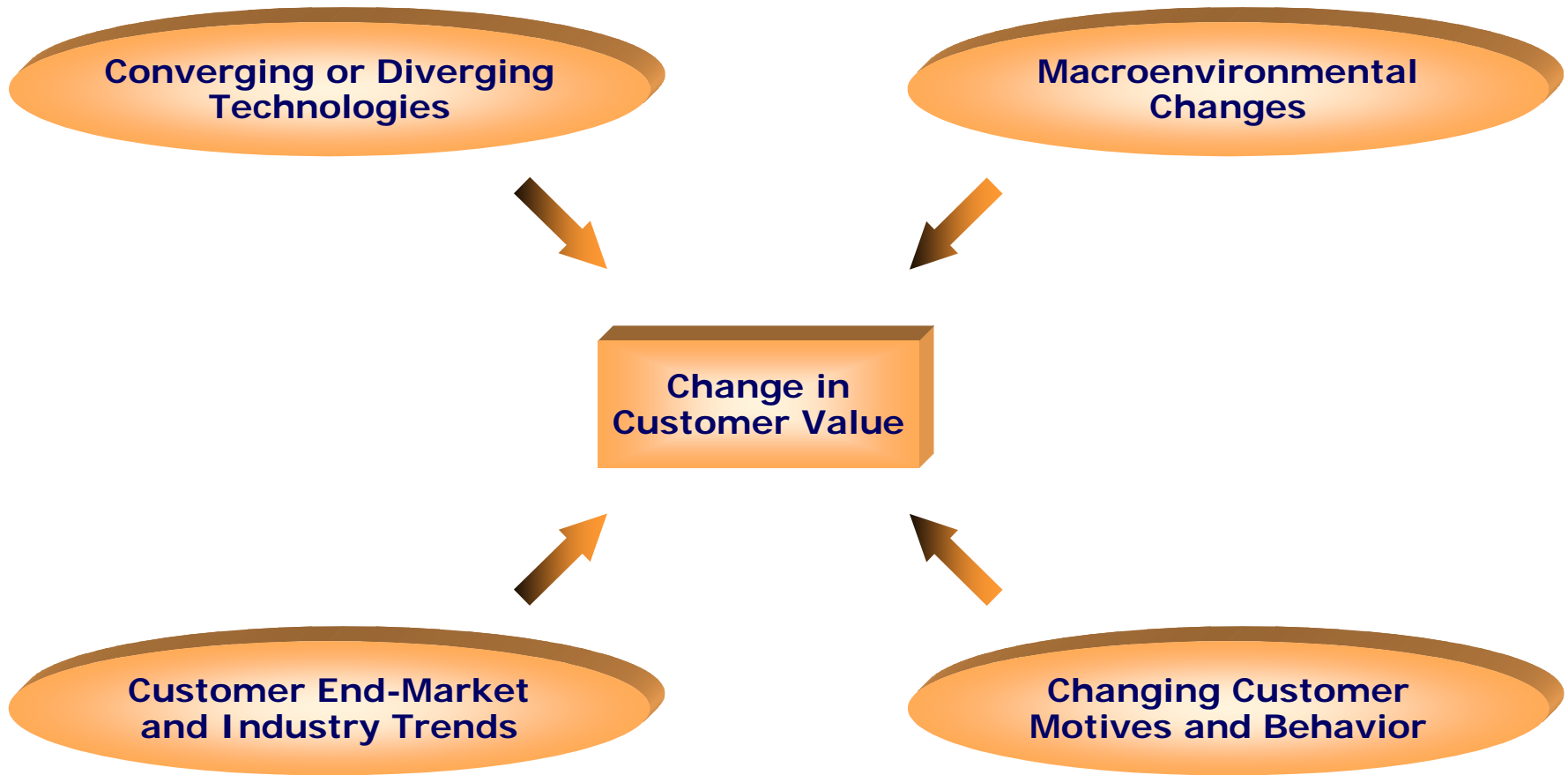
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What are the Components of Customer Value Change Driver Analysis?



Rosenø, Axel (2007)

What are the Relevant Market Learning Tools?

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How to Develop Personas and Employ Them for Innovation?

Collect Data about Users

Find the Discriminating Variables

Detect Persona Patterns in the Data

Select the Most Relevant Personas

Write Personas and Select Illustrative Photos

Apply Personas to Different Use Scenarios

How to Make Use Scenarios for Personas?

- ✿ Imagine a context and a situation
 - What does the persona want to accomplish?
- ✿ Walk through the scenario for a persona
 - What problems arise during use scenarios?
- ✿ Develop breakthrough concepts to address use problems
 - How can use scenarios be improved with better products & services?

Personas help empathize with customers. They make it possible to imagine particular situations from a customer perspective. This sets the stage for generating ideas to solve problems for different types of customers and not for one self.

How to Test for Exceptional Buyer Utility?

The map outlines the levers for delivering exceptional utility as well as the experiences buyers have with a product, thereby allowing managers to identify the full range of utility spaces that a product can potentially fill

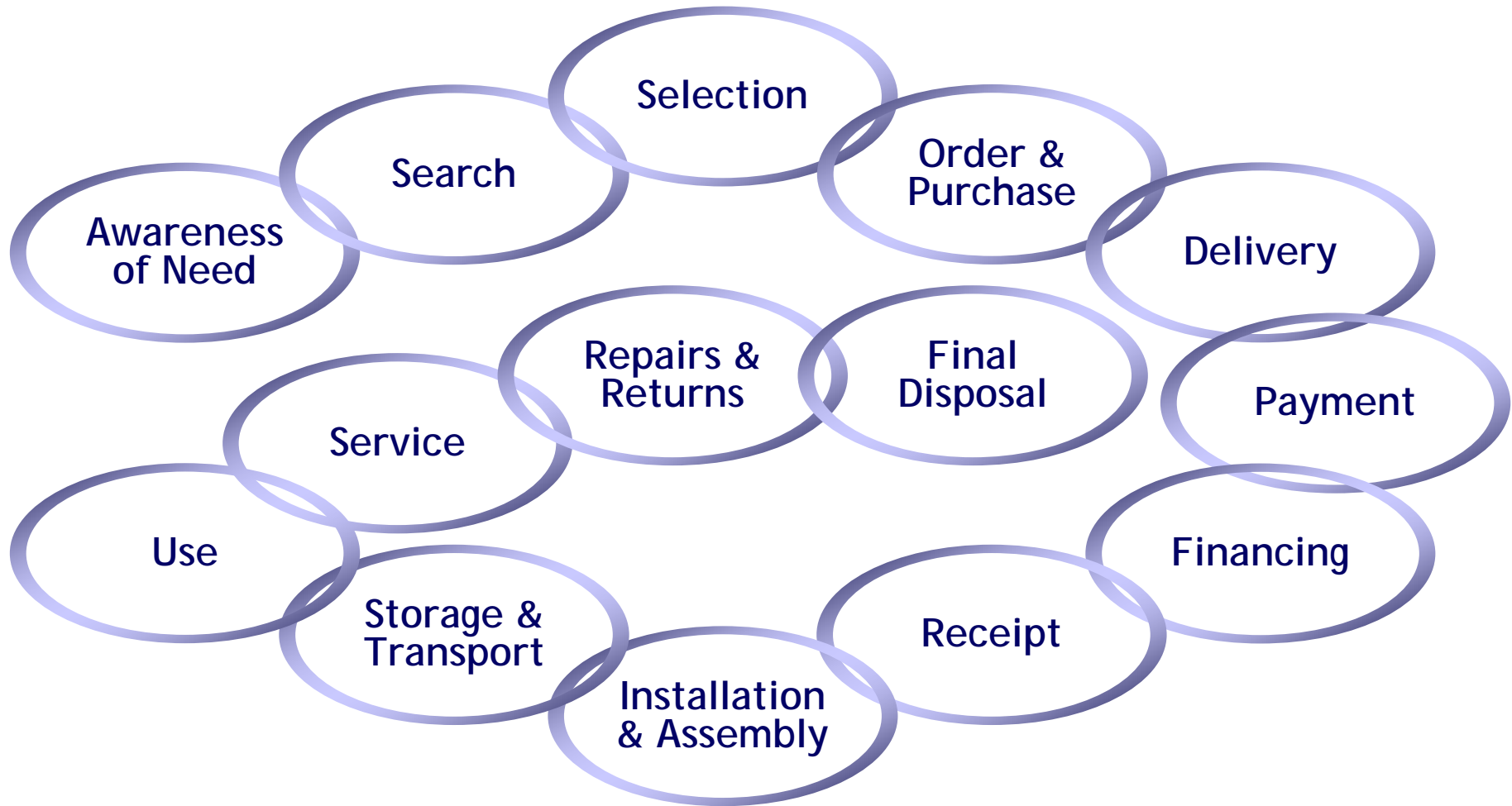
The Buyer Utility Map

The Six Stages of the Buyer Experience Cycle

		1.	2.	3.	4.	5.	6.
		Purchase	Delivery	Use	Supplements	Maintenance	Disposal
The Six Utility Levers	Customer productivity						
	Simplicity						
	Convenience						
	Risk						
	Fun and image						
	Environmental friendliness						

Kim, W. Chan & Renée Mauborgne (2005)

How Does the Typical Consumption Chain Look?



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What were the Innovation Opportunities for Bosch?

Desired Outcomes (for circular saws)	Importance	Satisfaction	Opportunity
Minimize the likelihood of going off track when approaching the end of the cut	85	32	138
Minimize the frequency with which the cord gets in the cut path	80	40	120
Minimize the amount of splintering that occurs when making a cut	92	71	113
Minimize the likelihood of debris blowing in the user's eyes	90	84	96
Minimize the time it takes to make bevel adjustments	50	12	88
Minimize the likelihood of getting cut when using the saw	86	92	86

Adapted from Ulwick, Antony (2005) *What Customers Want*, Harvard Business School Press

Opportunity = Importance + (Importance – Satisfaction)
If (Importance – Satisfaction) is negative then the value is set as 0

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What were the New Products for the Outcome-Based Segments at Motorola?

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- **Ethnographic Observation (Anthropology)**
- Co-Creation with Users or Business Customers
- Rapid Prototyping to Test and Revise Ideas

How to do Applied Ethnography?

- ✿ Identify People and Places to Observe
- ✿ Put Together the Research Team
- ✿ Select Observation Techniques
- ✿ Observe and Document
- ✿ Compare and Interpret Field Notes
- ✿ Generate Ideas From Observations

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How to Employ the Lead User Method?

- ✿ Specify the Market Being Targeted
- ✿ Determine Trends that Lead Users are Ahead On
- ✿ Identify Lead Users
 - Dissatisfied with Existing Products
 - Have Developed Own Adaptations
- ✿ Include Lead Users in Workshops to Develop New Products

How to do Collaborative Development?

Critical Success Factors for Collaborative Development:

- ✿ Complementarity and compatibility
- ✿ Trust and openness
- ✿ Mutuality and equality
- ✿ Flexibility and adaptability
- ✿ Experience in the technical area and in the collaborative art
- ✿ The presence of a collaboration champion

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- **Rapid Prototyping to Test and Revise Ideas**

How to do Prototyping?

Rough prototypes

- May be made from cardboard, foamcore, or with computer modeling tools to focus experimentation and discussion around tangible objects;

Rapid prototyping

- Is the mind-set of quickly and continuously translating ideas into (rough) models to drive the process further in a tangible way; and

Right (focused) prototyping

- Is the idea of focusing on getting specific aspects of a product right, such as a handheld computer's stylus or its casing