Columbia Business School

Managing the innovation challenge in the communications industries

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Sao Paulo, Brazil
July 21, 2008

Context

- We are reaching a tipping point across the technology landscape of the information and communication industries
- The pace of innovation is accelerating, the rate of change is faster than the fiber rollout and the migration to full IP networks
- Product innovation is becoming extremely important but most providers don't know how
- Where do we assign the innovation center of gravity: within the large companies? Or within small companies at the edge of the eco-system?
- What are the risks and opportunities of each option?
- How do we control for the risks?

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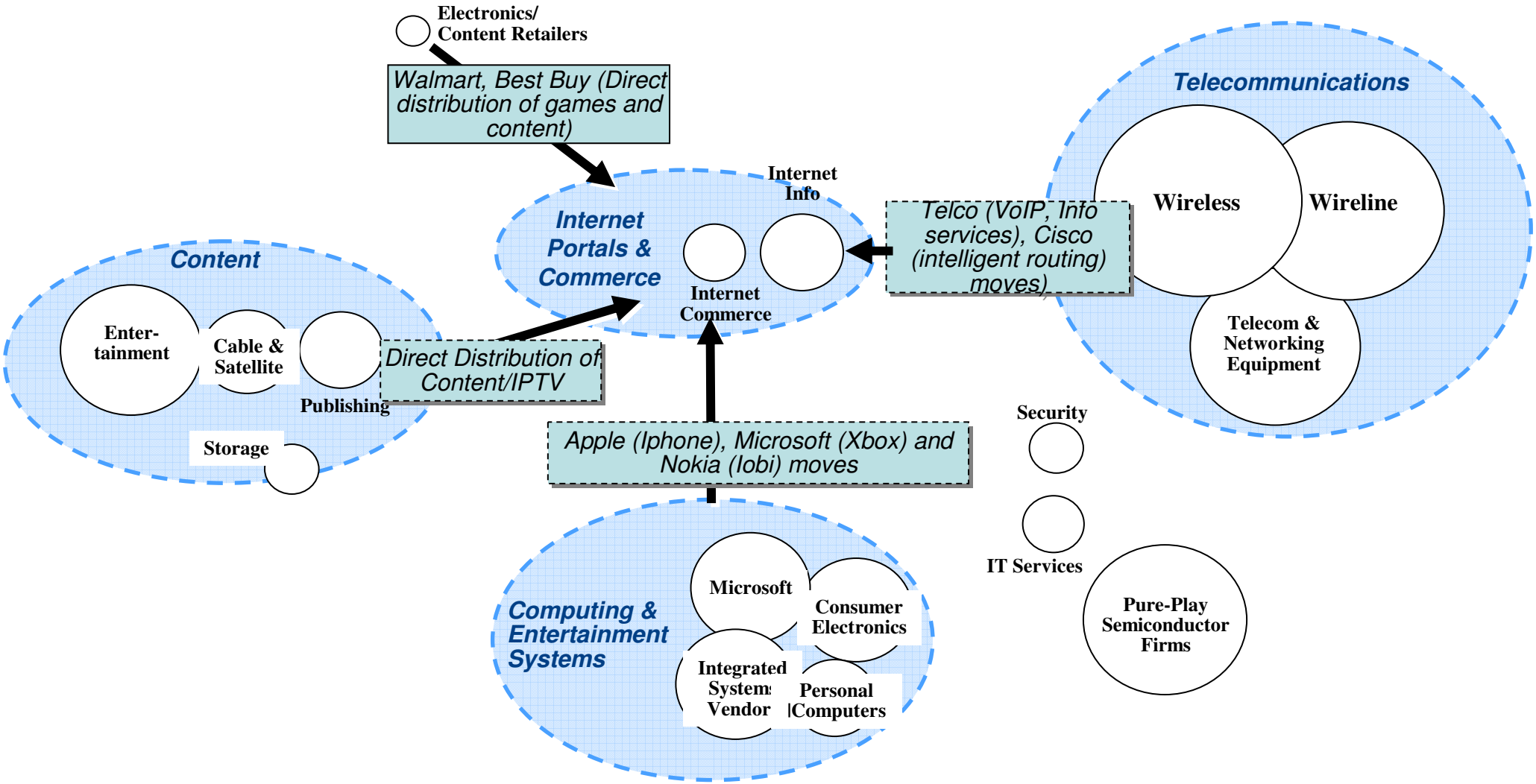
The communications industry is affected by four key forces driving for radical change

Telecommunications Key Forces

1. CUSTOMERS DEMAND SIMPLICITY AND FLEXIBILITY WHILE MARKET SEGMENT REQUIREMENTS ARE DIVERGING	• Customers expect simple platform products with plug and play applications • Demands of consumer, small business and enterprise customers are diverging, prompting the need for segmented delivery engines
2. INTEROPERABILITY IMPERATIVE	• Software dominated • Open access to platforms • Single, modular IP technology
3. EXPLOSION IN COMPETITIVE COMPLEXITY	• Fragmentation/recomposition of value chains • Falling barriers to entry; changing economics • Deregulated markets
4. RELENTLESS PACE OF INNOVATION	• Scope includes process, technology and product • From in-house to extended enterprise • Loci shifting from industrialised countries to global centers

At the same time, the locus of innovation is shifting from transport and content to the internet



Modular and Open Systems Are Contributing to the Commoditization of Product Innovation

SHIFT TOWARDS OPEN STANDARDS AND MORE MODULAR SYSTEMS

- Evident in software …
  - Growth of Linux
  - Asterisk: Open source VoIP platform
- … and in hardware
  - Customized chips (ASICs) developed dropped over 70% since 1998 (source: iSuppli)
  - Shift to more standard components to reduce cost, risk, and time to market

THE INTERNET HAS SPREAD THE OPEN, MODULAR PARADIGM

- End-to-End principle continues to shape (and limit?) innovation in the internet ecosystem
- TCP/IP architecture enables products and service innovations that destroy traditional pricing in
  - Voice communications (VoIP)
  - Content downloading (e.g. i-Tunes)
  - Applications software (e.g. Salesforce.com)

MODULARITY AND OPEN STANDARDS DRIVE PRICE COMPETITION AND MARGIN EROSION

- Annual Price Declines

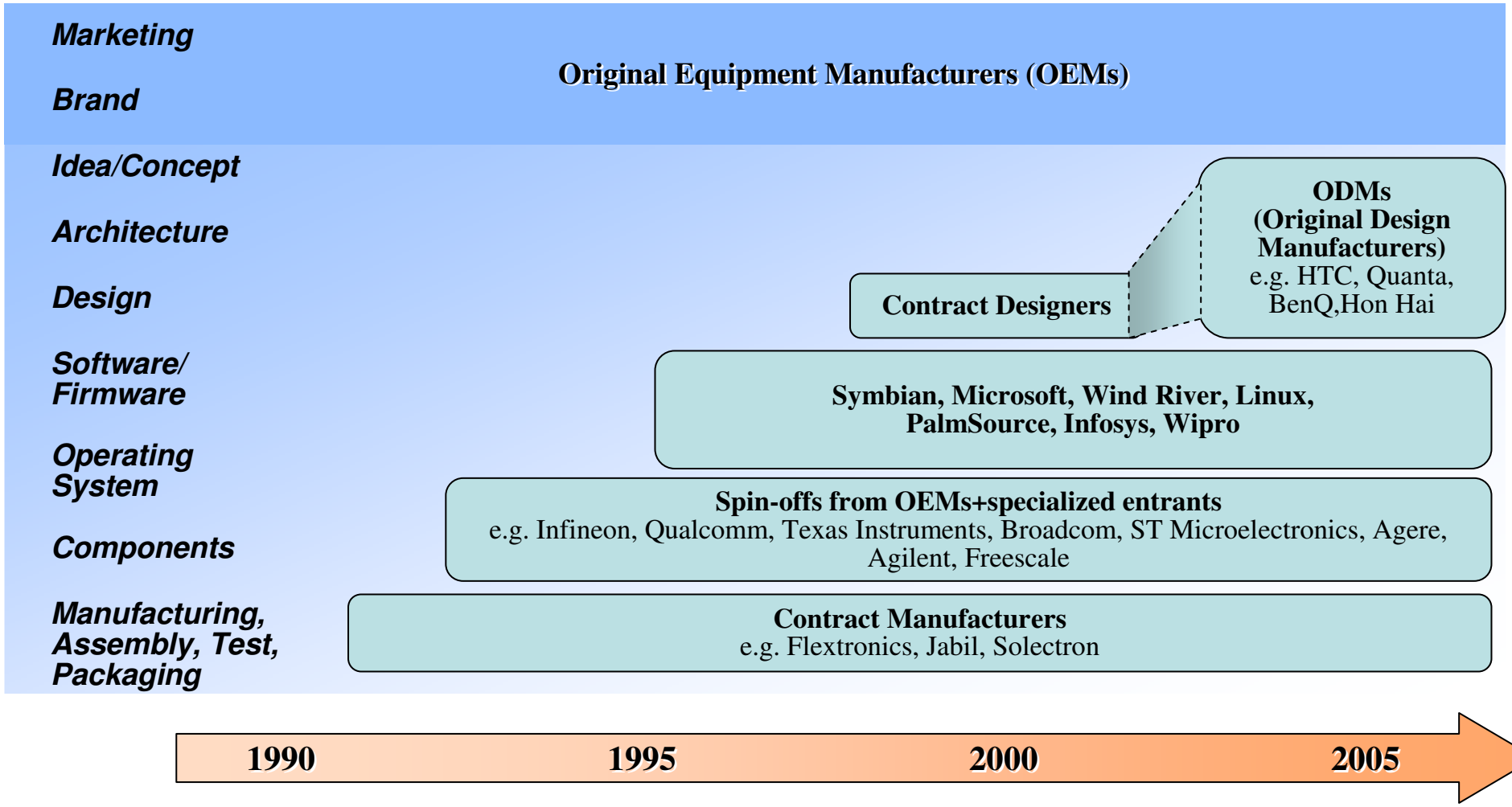
Routers	14%
Switches	22%
LAN cards	18%
Hubs	19%

Source: Doms and Forman, "Prices for Local Area Network Equipment", Information Economics and Policy, 2005.

MODULARITY AND OPEN STANDARDS INCREASE IMITATABILITY

- Lower barriers to entry and barriers to imitation
  - Fast follower strategy no longer requires imitating through development, it only requires purchasing the same technologies
  - Example: Internet Telephony
    - June- Yahoo buys Dialpad
    - Aug- Google announces GoogleTalk
    - Aug- Microsoft buys Teleo
    - Sept- EBay buys Skype

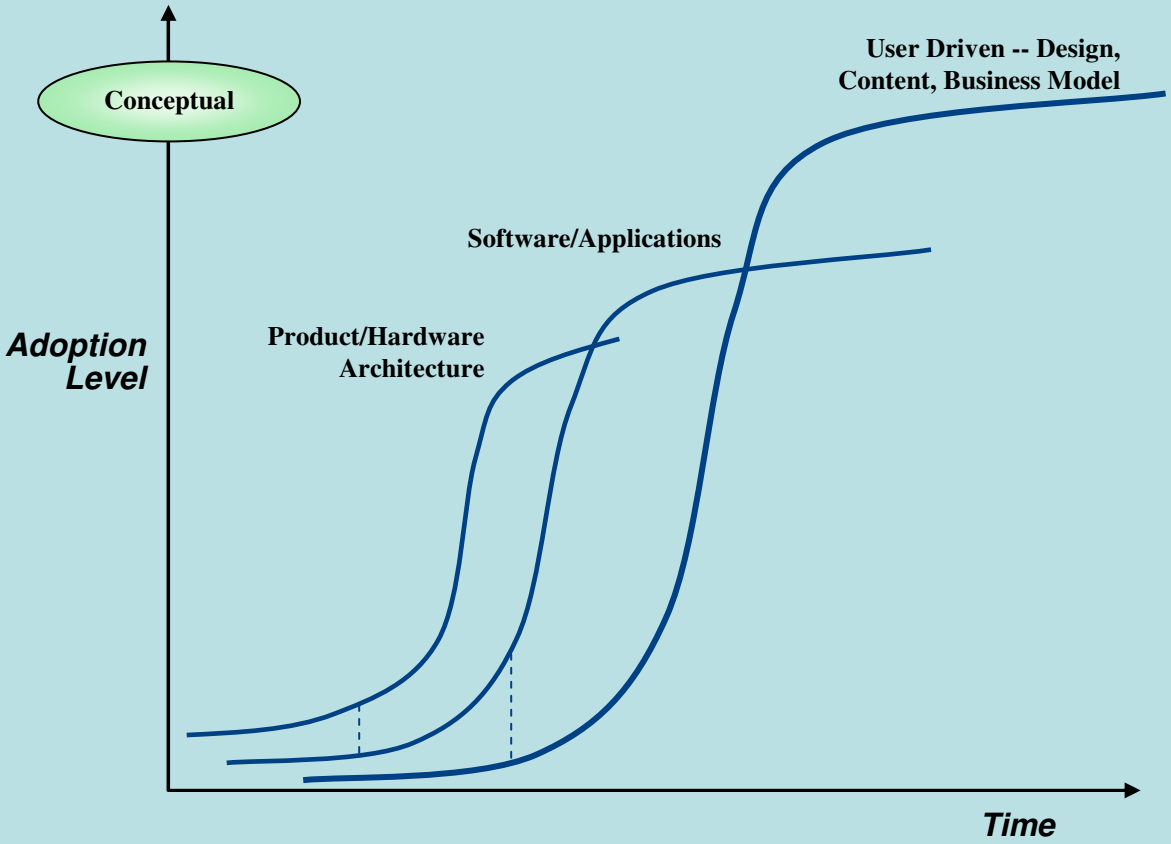
Outsourcing of the Innovation Value Chain Is becoming more common



Represents role of OEMs (traditional equipment suppliers, e.g. Motorola, 3COM, Lucent, Nokia, HP, Siemens etc.)

We are also at an "innovation discontinuity" point where user-driven innovation could take over

INNOVATION / ADOPTION CURVES



COMMENTS

- **Product/Hardware/Architecture**
  - Characterized by shorter time duration from beginning to end of cycle
  - Steeper adoption curve
  - Short "plateau"
- **Software/Application**
  - Typically starts after hardware innovation begins to reach critical mass/adoption
  - Extends beyond end of hardware innovation because software development continues to leverage hardware penetration
- **User Adoption**
  - Only starts once critical mass of software available
  - Adoption is typically rapid and extends for significant time period (i.e., users continue to buy products/software even after they are considered "outdated")

The Innovation Imperative Creates Challenges for players in the communications industries

CHALLENGES IN THE SHORT-RUN

- **Digesting excess innovation**
  - Specialized firms have flooded the market with product innovations
  - Too many firms, making too similar products, for too few customers inevitably leads to consolidation
- **Where to spend their cash?**
  - 80 technology firms in S&P500 have $229 billion in cash; more than twice their cash balance at end of 1999
  - VCs flush with capital, fueling further "redundant / incremental innovation" with NO clear demand pull from customers
- **Outsourcing as a core competency**
  - Process of outsourcing is a competitive advantage
    - Selecting what to outsource and how to structure the interface with the supplier

CHALLENGES IN THE LONG-RUN

- **More layers between technology innovators and end markets**
  - More difficult to feel the "demand pull" when it trickles through so many layers
  - Example: WAP's failures vs. i-Mode's success
    - Technology push vs. demand pull
    - WAP: did not take into account business model considerations for other layers of value chain
    - i-Mode development led by NTT DoCoMo – adapted technology several times as market demand was stronger from consumers than business customers
    - DoCoMo delivered a technology, product, service, and business model for mobile internet ecosystem in Japan
- **Value creation will need to come from:**
  - Process innovation, business model innovation, and capturing critical architectural control points and, integrating innovation from users, customers, suppliers, partners, and competitors

There is a significant risk of share erosion and business model implosion for traditional telecommunications service providers

- Advances in IP and associated technologies, coupled with business innovations, hold the potential for big disruptions
- Who is disrupting the telcos?
  - Low-cost wireless operators: 60-80% cost advantage vs. carriers – based on stripped down business model targeted at high volume/local users
  - Cable-subsidized economics and mono/duo-poly
  - Low-cost resellers: 40-60% cost differential by managing entire wireless relationship over Internet and selling SIM-only phones
  - Handset manufacturers
  - WiFi/MuFi: 60-70% cost differential in metro areas, low acquisition cost since no hardware
- Innovation in telecom is critical
- Incumbents must think big and holistically and become disruptors
- However, it is not simply about churning out more products and services
- Compensating by entering new sectors will be of limited value
- Successful players must ruthlessly pare down functions that are sub-par, and focus on serving segments where they can sustain advantage
- It is about re-inventing the business model to respond to disruptors

Current Realities Require Radical Changes In Innovation Approaches

- Shifts in technology and industry structure commoditize product innovation:
  - More modularity and standardization open the playing field for imitators and niche innovators
  - Outsourcing implementation, development and now some design decreases opportunities to differentiate products and increases the supply of incremental innovations
  - Firms are capturing less value from new product innovation
    - Lower initial premiums
    - Leaders and fast-followers have shorter windows of comparative advantage

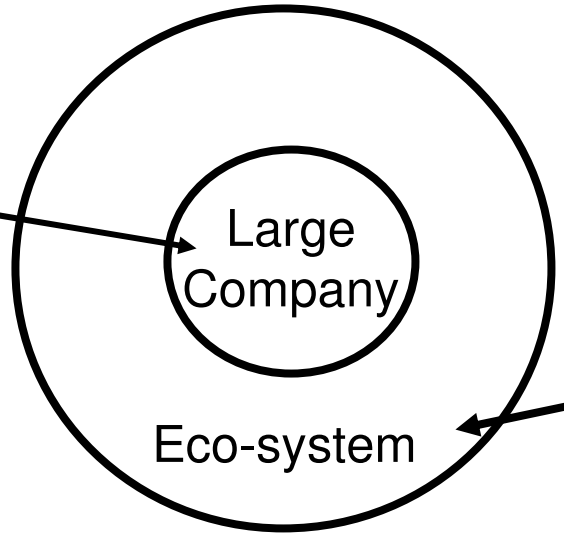
- Creating and capturing value from innovation requires choosing between *sustaining* and *disruptive* innovations on four linked fronts: product, process, architecture, and business model

- Implementing and managing a robust innovation strategy requires:
  - Rationalizing existing portfolio to focus on highest ROIC opportunities
  - Implementing a new investment framework for hedging and managing risks
  - Creating a holistic approach to innovation that goes beyond product cycles – linking process, architecture and business model innovation
  - Enhancing new structural approaches to innovation that include internal innovation, outsourcing, acquisitions, and corporate venturing

In this context, players in the communications industry have been struggling to define whether to insource or outsource innovation

DEFINE THE PRIMARY LOCUS OF INNOVATION

- Relying on innovation at the edge conveys the risk of commoditization
- Profiting of Innovation at the edge is not only not manageable and controllable, it is risky
- Relying on outsourced innovation relinquishes the ability of building product differentiation
- Large companies are now realizing that they must engage in product development if they are to create a competitive advantage



- Historically, telecommunications service providers are not particularly adept at innovation (long lead times, misunderstanding of market signals, etc.)
- Furthermore, it is difficult for them to imitate Microsoft, which has absorbed and acquired products and ideas from the outside
- Telcos cannot possibly lead with internal R&D efforts today

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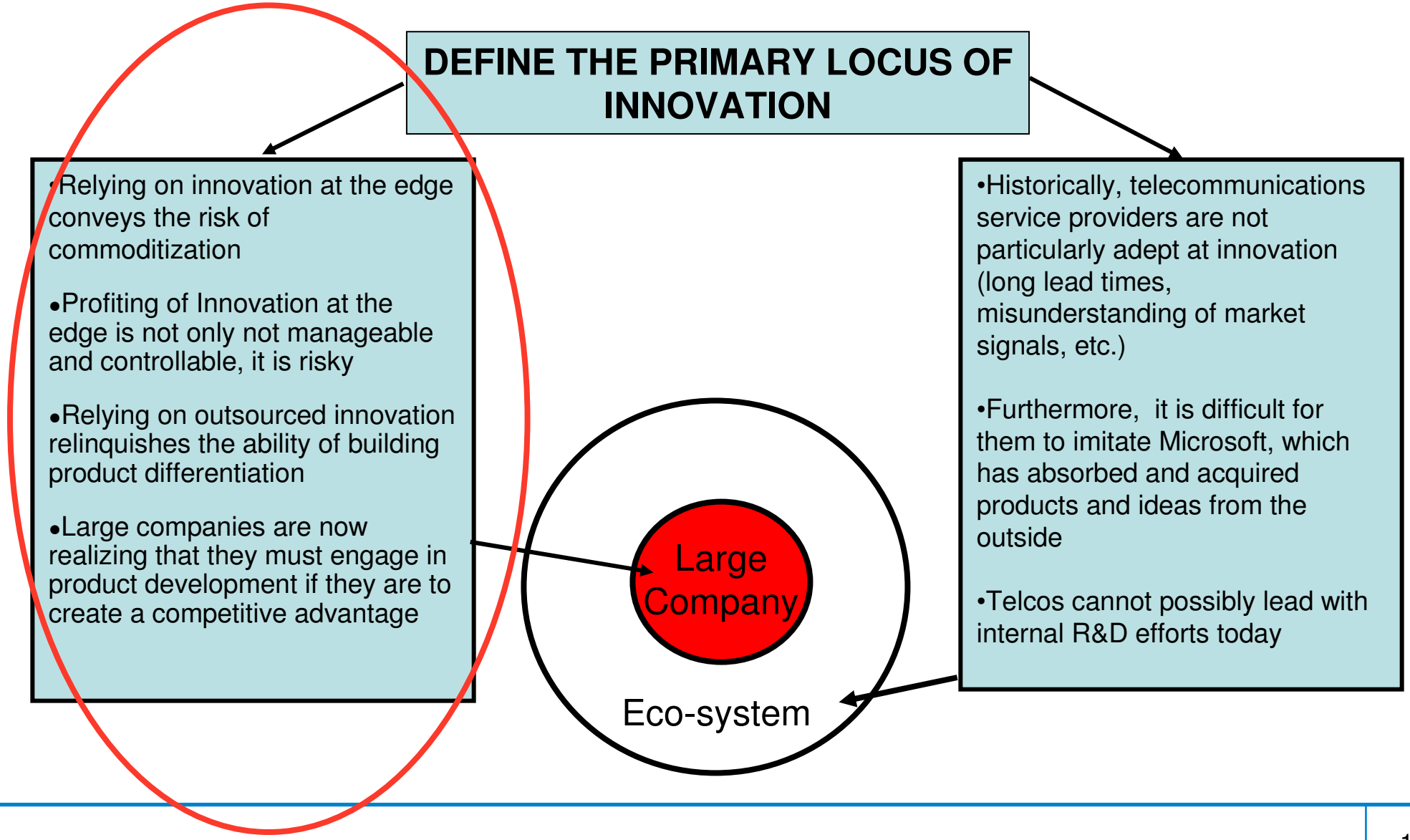
What are the issues facing large companies, such as telcos and cable TV operators, when dealing with internal product innovation?



Why do large companies have so much difficulty to innovate?

- Structural reasons (incumbent vs. challenger)
- Embedded investment risk
- However, sometimes large companies need to innovate/redefine their business to survive
- Why do large companies find it so difficult to create new businesses?
- What barriers get in the way?
- How do organizational belief and value systems interfere with new business creation?

Organizational and cultural barriers to innovation in large companies (1) (*)

- **Operational mindset:**
  - **Primary focus: disciplined execution; secondary focus: growth**
  - **Turnaround mentality (cost cutting) reinforces mindset**
  - **Culture: tight control, predictability, error-free performance**
  - **Anti-bodies for creativity, open-mindedness, flexibility, bold thinking, mavericks and rule-breakers**

(*) Primary source: Garvin, D. Emerging business opportunities at IBM. Harvard Business School Case

Organizational and cultural barriers to innovation in large companies (2)

- **Lack of skills:**
  - **Managers at large companies do not know how to launch new businesses**
  - **Few have entrepreneurial backgrounds (since large companies cannot attract these skills, this becomes a self-fulfilling feature)**
  - **Most have spent their entire careers with their companies (furthering in-bred thinking)**
  - **They cannot understand embryonic, ill-formed markets (they only listen to their own customers)**
  - **Good at incremental improvements in large businesses**
  - **Bad at business building and strategic thinking**
  - **Cannot handle iterative business development processes (prototype, customer feedback intensive)**

Organizational and cultural barriers to innovation in large companies (3)

- **Inadequate systems, processes and tools:**
  - **Management systems are not geared to support business creation**
  - **Resource allocation is oriented to support steady, predictable funding of stable businesses; not lumpy, highly variable of emerging businesses**
  - **Large companies will always focus on large "move the needle" opportunities; but lack the tools to predict which are those (first-year sales forecasts are typically off by 80%)**
  - **Market analysis tools are focused on supporting mature businesses with hard/quantifiable data (mainframes!), not assessing ambiguous, poorly defined markets**

Organizational and cultural barriers to innovation in large companies (4)

- **Lack of incentives and support:**
  - **New businesses do not fit well with established divisions; they are often "at the seams" of established divisions (aggravated at IBM by matrix and decoupling of R&D and Bus; differences with Matushita/Samsung?)**
  - **No senior management support (too risky)**
  - **They are the first to be cut off in hard times**
  - **Most are a cash drain initially (it takes them typically 7 years to become profitable)**
  - **They might destroy traditional core competences in production and selling to generate a new set of skills**
  - **Therefore, resistance could be high, and needs top management sponsorship to be overcome**

Organizational and cultural barriers to innovation in large companies (5)

- **Difficult to get the balance right:**
  - **Separate vs. Integrated with the company?**
  - **Separate: preserve independence; allow new businesses to define themselves; no creativity stiffling factors (IBM PC in Florida)**
  - **Integrated: separate businesses create orphans from senior management sponsorship; have trouble finding a permanent home**
  - **So, how do you manage the balance?**

So, how do we get a large company to innovate?

- **Leadership**
- **Strategy development**
- **Resources**
- **Tracking and monitoring**
- **These elements interact and reinforce each other**

Element 1: Leadership

- **Traditional approach for new business development in large companies: entrepreneurs or mavericks that contribute fresh thinking**
- **Good for organizational transformation, not good for innovation**
  - **Us vs. Them (outsider mentality; e.g., telcos and video)**
  - **Entrepreneurs come from small company culture (different DNA) and do not know how to get things done**
  - **It is better to bring in "company people", adept at negotiation and collaboration**
- **Development leaders are not just good implementers, they are change agents (problem: this people are in short supply and risks-prevents people from throwing their hat in the ring)**
- **Leadership for mature initiatives is different from defining a new business or scaling it up**
- **Should we create a career path of innovation leader? Can we migrate from project leader to business leader? Maybe or if not, "growth specialist"**

Element 2: Strategy development

- "Strategic clarity": root out a) technocratic thinking insensitive to marketing and customer needs, b) overscoping of product definition, c) fast forwarding with little testing, d) difficulty in scoping out the business concept
- Emphasize concept development, customer insight, prototype development
- Critical issue: market responsive versus market making (dealing with ambiguity)
  - Constructive conflict and rigorous assumption testing
  - Structural impediment of large companies (analysis/paralysis)
  - Who do you talk to get market feedback?
  - Difficulty in conducting market forecast

Element 3: Resources

- **Simple, straightforward process for securing funds (little business planning or quantitative analysis not to stiffle creativity)**
- **Qualitative evaluation criteria given difficulty in generating numbers**
- **First gate: are we committed? If yes, funding is simple**
- **Second gate: get the business up and running quickly and launch market experiments**
- **Central management of funding (corporate pool of funds)**
- **Matching funds from business units (“skin in the game”)**
- **Protected funding**
- **Cross-disciplinary team**

Element 4: Tracking and monitoring

- **Three measures: milestones, financials and business maturity**
- **Milestones (business building, org development, market presence): critical for assessing progress when financials are either negative or misleading**
- **Financials help instill discipline and prepare leaders for hand-off**
- **Maturity:**
  - **Is there a clear strategy?**
  - **Is there an executable model?**
  - **Is the business winning in the marketplace?**

Develop a system encourages experimentation and creativity, couple with oversight

- Makes resources available
- Shifts incentives away from short-run financial performance and toward business building
- Offers space for debate
- Avoids premature exits and disciplines line managers
- At the same time, it imposes discipline
  - "No blank checks"
  - Innovations have to show progress in market impact
  - Corporate coaching is critical
  - The system provides a balanced approach between creativity and financial results (dualities or organizational paradoxes)

Three balancing acts are critical to innovate in large companies

- **Short-term (get the business up and running) versus long-term (essential for sustainability)**
- **Freedom (from oversight and budgetary control) versus control (progress against milestones)**
- **Separation versus integration**

Five potential problems

- There are no hand-off points
  - Revenue thresholds?
  - “Halfway houses”?
- There is no clear cut point for pulling the plug
- Innovation leaders might like corporate protection (spoiled by system)
- With so much individual involvement, the program is not scaleable
- How do you embed in company?

Conclusion (1)

- Several barriers exist to new business development within large, established companies
  - Structural: organizational design, resulting from processes and systems required for efficient planning and operation
  - Behavioral: patterns of thinking and acting that build up over time in large organizations
- These barriers reflect the conflict between stability and order for disciplined execution and need to respond to competitive imperative for flexibility and experimentation
- Key question: should large companies "throw in the towel" when it comes to innovation?
  - Middle layer syndrome
  - Convergence in the network or at the edge?
- Key question: how long does it take innovative start-ups to start behaving like established companies?

Conclusion (2)

- Emerging businesses in high technology, face poorly defined and ambiguous environments
  - Planning, prediction and decision making are based on little information
  - Managers can seldom rely on customers' past behavior
  - Estimating range of options and success of each is extremely difficult
- They require a distinctive approach to strategy formulation and product development
  - Experimental/adaptive
  - Probe markets with prototypes and revise products based on feedback

Conclusion (3)

- **Business creation follows a set of pre-defined stages which correspond closely to the horizons of growth model of the case**
  - **Experimental stage: products are conceived and defined, technical and economic feasibility is assessed, alternatives are tested; the output is a business plan**
  - **Expansion and growth stage: business ramps up in scale and scope; new customers, new products and functionality are added; the organization grows in size**
  - **Institutionalization: business is integrated into the mainstream organization and assimilates processes, systems and structures**

Managerial challenges and pitfalls in new business creation

EXPLORATION	VALIDATION	SCALE UP	INSTITUTIONALIZATION
•Lack of clear market/customer information	•Poorly designed tests	•Inability to secure needed resources	•Failure to leverage existing firm resources/systems
•Technological ambiguity	•Lack of clear decision criteria	•Improper pace	•Unrealistic expectations
•The “movethe needle” effect	•Poor fit with traditional metrics	•Inadequate executive sponsorship	•Failure to find an “organizational home”
•The improper use of analogies	•Difficulty overcoming the firm’s “dominant logic”	Lack of supporting infrastructure	•Management succession issues
•Technology in search of a market		Escalation of commitment	•Lack of process discipline

Probe-and-learn processes

- Create representative, inexpensive prototypes
  - Design prototypes that are appealing enough to induce users to try the product or service
  - Ensure the designs are accurate enough to ensure valid feedback about users' needs
  - Use materials and configurantions that are cheap enough to permit multiple revisions
- Collect feedback directly from the market
  - Connect designers with users, suppliers, distributors, and service personnel
  - Keep cycles short so that market information remains current and up to date
  - Add new features and design characteristics as required, then return immediately to the market for further testing

Probe-and-learn processes

- **Expect to revise repeatedly**
  - **Treat early designs as works in progress**
  - **Don’t try to produce the perfect prototype**
  - **Don’t be disappointed by repeated rejections, especially if users are finding some features to be of interest**
  - **Expect the initial market research to be misleading (how to ask questions, how to show consumers models to be tested, how to handle large scale surveys, discounting factors)**
  - **Stay attuned to unanticipated requirements and emerging needs**

Probe-and-learn processes

- **Employ a comprehensive measurement package**
  - **Agree on objetice measures before beginning the experiment**
  - **Collect data over time (before, during and after) to capture the initial impact of the experiment as well as subsequent changes in designs**
  - **Use comparative data (on similar products, services, or sites) to isolate experiemntal effects (but watch out for inferential fallacies: ARPU extrapolation)**
- **Know when to stop**
  - **Establish guidelines in advance for evaluating success and failure**
  - **Allow enough time for experiments to produce representative results**

Guidelines for practice

- New businesses are more likely to succeed when they:
  - Are conceived and developed in supportive, entrepreneurial environments
  - Have the sponsorship of senior operating and corporate executives
  - Appeal to a company's current set of customers
  - Employ market-experienced personnel
  - Test concepts and business models directly with potential users through prototypes and experiments
- Balance demands for early profitability with realistic time lines
- Introduce required systems and processes in a timely fashion
- Combine disciplined oversight with entrepreneurial autonomy

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- The innovation challenge in information and communications
- Innovation at large companies
- Innovation at the edge of the eco-system

What are the issues facing large companies, such as telcos and cable TV operators, when outsourcing product innovation?

DEFINE THE PRIMARY LOCUS OF INNOVATION

- Relying on innovation at the edge conveys the risk of commoditization
- Profiting of Innovation at the edge is not only not manageable and controllable, it is risky
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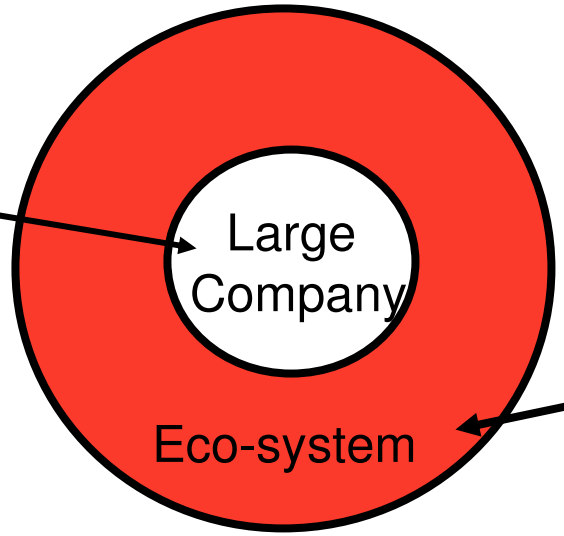

- Historically, telecommunications service providers are not particularly adept at innovation (long lead times, misunderstanding of market signals, etc.)
- Furthermore, it is difficult for them to imitate Microsoft, which has absorbed and acquired products and ideas from the outside
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Why search for outside innovation partners?

RATIONALE FOR INNOVATION PARTNERING

- **The emerging technology arena have multiple gaps which require many partnerships – no single company has all the components**
- **Innovation partnerships help support specific solution area requirements**
- **Innovation partnerships create market awareness for the company as a whole as a "leader" in the solution area**
- **Innovation partnerships enable extending the overall solutions and building a critical mass of technologies – key to deliver the core solution**

Outsourcing innovation requires to implement a solution-focused partnering strategy that is based on a broad range of alliances

TRANSITION FROM TRADITIONAL MODEL TO PARTNERING MODEL

Traditional Model

- Products offered to customer
- Focus and capability required around a single technology or related technologies
- Centers of the traditional model
  - Network centric infrastructure focus
  - Carrier centric customer focus
- Traditional elements of competition:
  - Carrier class reliability
  - Effective infrastructure products
  - Risk minimization
  - End-user independence, ubiquity

Partnering Model

- End-to-end solutions offered to customer
- Focus and capability required around multiple technologies, each requiring varying skills sets and expertise
- Centers of the new mobile internet model
  - Application centric services
  - End-user centric customer focus
- Emerging elements of competition:
  - Manageable reliability
  - Innovative end-user services and applications
  - Rapid time to market
  - End-user customization

Implications

- **Product focused approach with a reliance on in-house competencies, with few focused alliances to support specific requirements**

- **Solution focused approach with multiple strategic and community based alliances to support various technology and business needs**

However, outsourcing innovation partnerships requires a roadmap

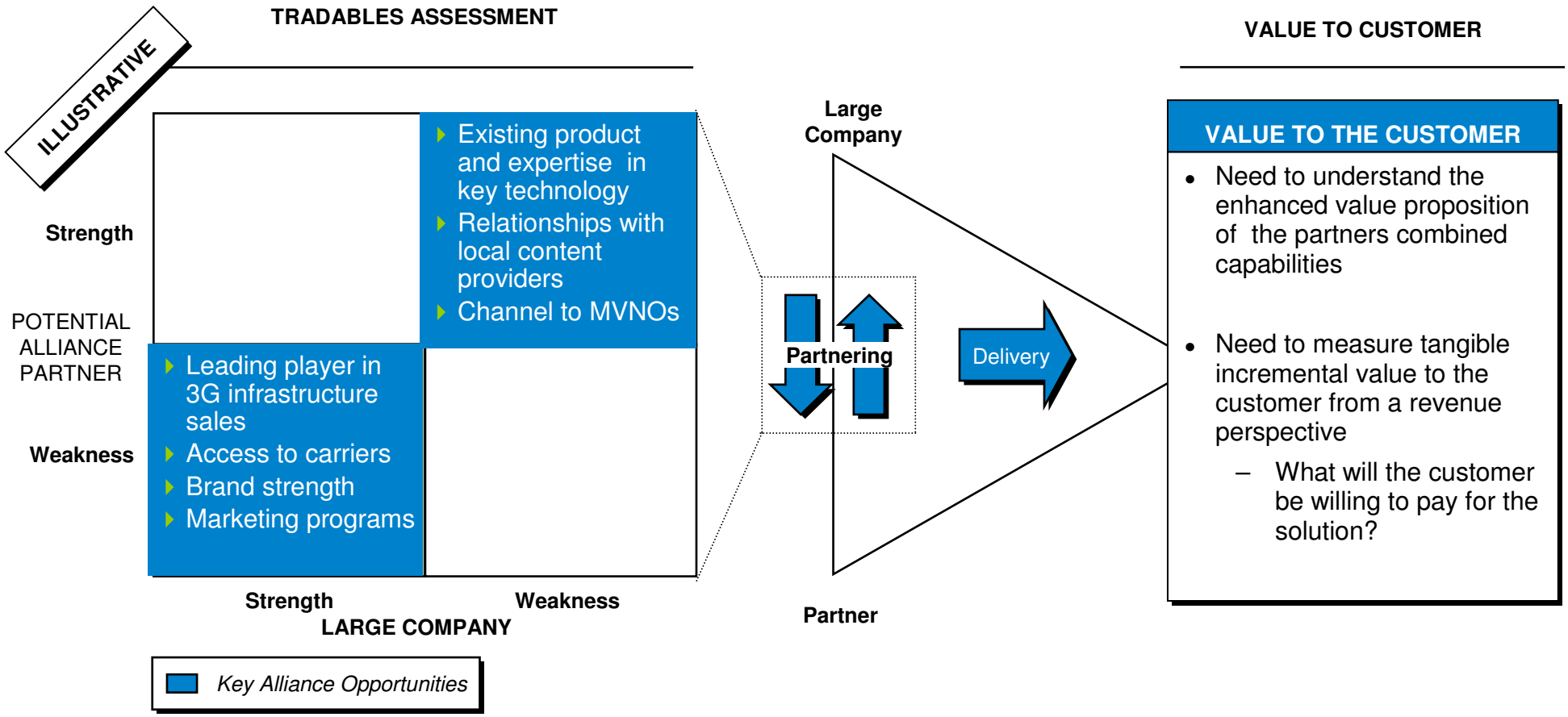
- **Define and formalize levels of partnership**
- **Assess large company and partner tradables**
- **Establish and communicate revenue models**
- **Define and institute performance metrics**

In the roadmap, there are three levels of partnerships based on the scope and required level of integration with the partner

LEVEL OF PARTNER	DESCRIPTION	PARTNERSHIP CATEGORY CHARACTERISTICS
Strategic Partners	• Partnership that can significantly impact the large company's market position – Fill core strategic gap in capabilities across a broad range of product/solution areas – Dramatically alter the competitive situation – Create a new market, channel to new customers, on global scale	• Very few strategic partners • Long-term commitment (5 + years) • Often alliances of equals • Shared strategic objectives and broad sharing of technology and roadmap information • Company and partner go-to-market together
Premium Partners	• Partnership that fills critical need in a discrete product/solution area – Fill key gap in large company's technology solution – Enable premium value-added feature to solution – Provide core applications – Provide content with global or regional applicability – Enable scalable solution delivery channel to end-user globally or over major regions	• 1-3 premium partners in core partner need areas for each solution • Long-term commitment (5 + years) • Alliance partner could be a much smaller player • Share resources and impact partner's product roadmap • Partner could be "preferred vendor" or single source for solution component
Business Alliances	• Partnerships that complement, expand and broaden the functionality and regional, local customization of large company solutions – Support customer network needs (e.g.interoperability with multiple middleware providers to address customer need) – Expand application functionality and provide broad range of content (multiple map application providers – Provide customized delivery of end-solution at regional/local level (e.g. local systems integrators)	• Broad range of partners across market units and product units • Short-term, transactional relationship • Requires simple interoperability in product or solution • Pure sourcing with limited need to impact partners technology or service roadmap in the long-term • Partners to not share a common strategy or act in unison; they remain at arm's length

In assuring the viability of a specific partner relationship, one needs to assess tradables between partners

ASSESSING THE VALUE ASSOCIATED WITH EACH PARTNERSHIP



There are a key set of partner tradables that are valuable to the large company that need to be assessed on a case-by-case basis

POTENTIAL PARTNER TRADABLES

PARTNERING OBJECTIVES	PARTNER TRADABLES	RELEVANT PARTNER SEGMENTS
• Fill technology gaps rapidly	• Specific wireless/internet related technology and content for solution areas	• Application developers, HW/SW vendors, platform technology providers, enabling technology providers, content providers, etc.
• Enhance distribution access to new customers	• New channel enabling access to new customer segments, e.g., enterprise customers	• Established HW/SW vendors, systems integrators, IT consultants, VARs, ASPs, ISPs
• Enhance solution delivery support	• Solution delivery support in non-traditional customer segments and extended geographic locations	• Systems integrators, IT consultants, established HW/SW vendors, VARs, ASPs
• Develop new business models	• Enabling creation and delivery of the solution through new business models, e.g., hosted solution model	• ASPs
• Extend Large Company's solution	• Wider potential user base due to interoperability of large company application solutions	• Device manufacturers, platform technology providers

Each partnership level has to consider a different value sharing approach

LEVEL OF ALLIANCE	PARTNER REVENUE MODELS
Strategic Partners	•Revenue sharing: Between the strategic partners based on tradables assessment between partners and the value delivered to the customer •Shared funding in separate ventures possible, with revenue sharing from activities of the joint venture
Premium Partners	•License model w/agreed upon market price: Large company pays license fee at a discount to market price. Ericsson and partner agree to market price at which both will sell the product •License/OEM model: Large company pays purchase price or license fee to partner and integrates with solution (no agreement on market price) •Revenue sharing: Between Large company and the partner based on tradables assessment, for a service provided jointly by the partners and large company •Direct payments of the charges by the customer, separately to large company and the joint partner
Business Alliances	•Direct payments of the charges by the customer, separately to large company and the joint partner •Channel fee: Potential for large company to charge one-time channel access fee in cases where Ericsson provides no other tradables •License fee models: Either of the license fee models described above

There are four potential approaches to managing partnerships

PARTNERING ORGANIZATION MANAGEMENT FRAMEWORKS

Questions Answered and Key Drivers

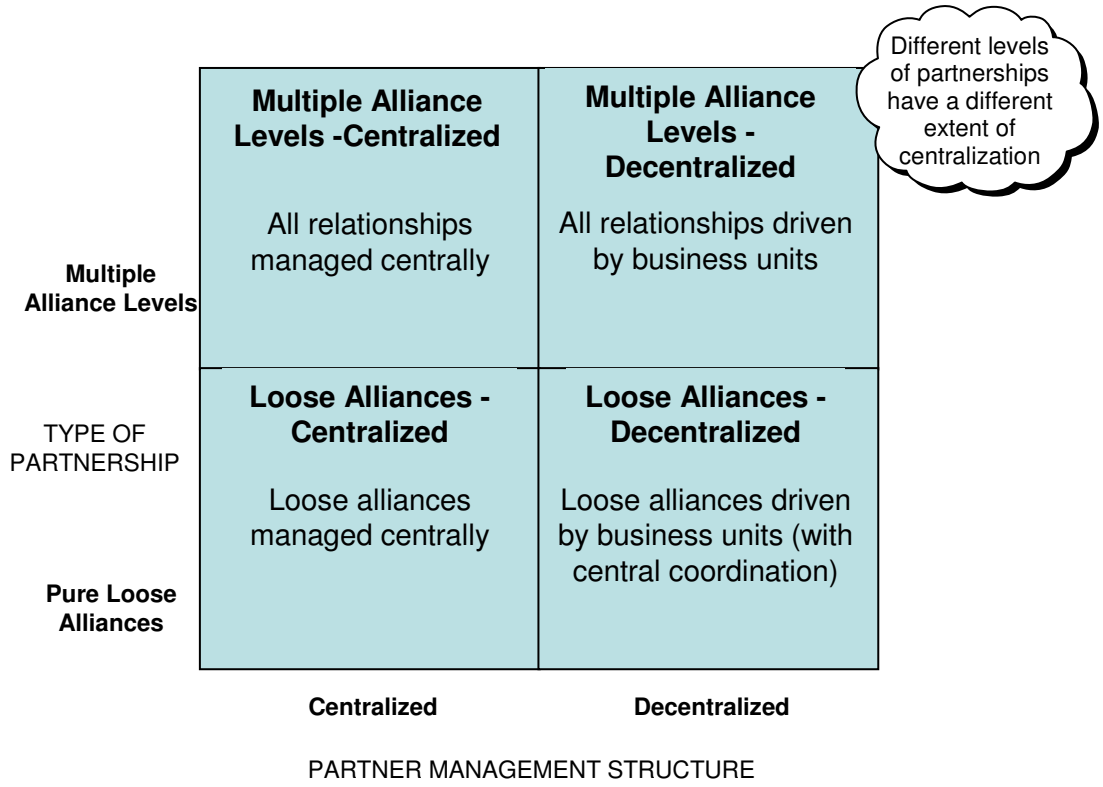
Key questions answered

- Where should responsibility for partnering reside within an organization?

Principles driving choice of the model

- Extent of complexity in partnering needs
- Time to market required and level of responsiveness/ flexibility needed
- Value placed on rapid execution given complex organization structure, e.g. matrixed across geography and function

Partnership Organization Management Framework - Mobile Internet -



Technology players fall into specific categories depending on their partnering organization management strategy

Partnership Organization Management Framework - Rationale and Examples

Rationale for Adopting a Particular Model

TYPE OF PARTNERSHIP	Centralized	Decentralized
Multiple Alliance Levels	**Multiple Alliance Levels - Centralized** ▸ Complex, strategic product development partners required ▸ Includes loose alliances ▸ Strong central control of decision-making valued	**Multiple Alliance Levels - Decentralized** ▸ Complex, strategic product development partners required ▸ Includes loose alliances ▸ Rapid decision-making, understanding of end-user needs valued
Pure Loose Alliances	**Loose Alliances - Centralized** ▸ Few complex product development gaps ▸ Limited internal partner mgt. resources ▸ Strong central control of decision-making valued	**Loose Alliances - Decentralized** ▸ Few complex product development gaps ▸ Limited internal partner mgt. resources ▸ Rapid decision-making, understanding of end-user needs valued

PARTNER MANAGEMENT STRUCTURE

Specific Examples of Relevant Companies

TYPE OF PARTNERSHIP	Centralized	Decentralized
Multiple Alliance Levels	**Multiple Alliance Levels - Centralized** Centrally driven partnering with multiple partnership levels ▸ Aether ▸ Nortel ▸ Sun	**Multiple Alliance Levels - Decentralized** Business unit driven partnering with multiple partnership levels ▸ Palm ▸ IBM ▸ Nokia ▸ Motorola
Pure Loose Alliances	**Loose Alliances - Centralized** Centrally driven partnerships of loose alliances ▸ AOL[1)]	**Loose Alliances - Decentralized** Business unit driven partnerships of loose alliances ▸ Phone.com ▸ Infospace

PARTNER MANAGEMENT STRUCTURE

Guidelines for practice

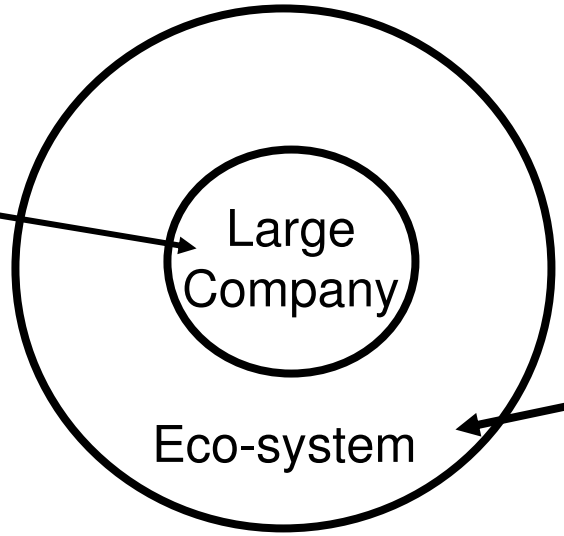
- **Innovation partnerships are more likely to succeed when they:**
  - **Are conceived and developed in the context of a strategic guideline**
  - **Have defined the tradables that each party is bringing to the table**
  - **Each party is compensated according to an agreed upon contribution**
  - **Managed within a carefully chosen management framework**
- **Be realistic in terms of the capabilities existing in-house and those that need to be outsourced**
- **Never approach innovation outsourcing deals on a one-off basis, but as part of a partnership roadmap**

Contents

Players in the communications industry have to insource and outsource innovation

DEFINE THE PRIMARY LOCUS OF INNOVATION

- Relying on innovation at the edge conveys the risk of commoditization
- Profiting of Innovation at the edge is not only not manageable and controllable, it is risky
- Relying on outsourced innovation relinquishes the ability of building product differentiation
- Large companies are now realizing that they must engage in product development if they are to create a competitive advantage



- Historically, telecommunications service providers are not particularly adept at innovation (long lead times, misunderstanding of market signals, etc.)
- Furthermore, it is difficult for them to imitate Microsoft, which has absorbed and acquired products and ideas from the outside
- Telcos cannot possibly lead with internal R&D efforts today

Prescription for innovation success

- **De-verticalize – rigorously assess every aspect of the business, and spin-off those where we are uncompetitive**
- **Segment – focus on serving those segments where you can out-compete**
- **Transform – re-engineer core processes where this gains a sustained advantage**
- **Re-tool – reconfigure the business to meet disruptors head on**
- **Don’t try to be grandiose – get good at the basics**
- **Leverage the power of the ecosystem – learn to borrow and absorb**
- **Partner smarter, and don’t be driven by fear of value chain competitors**
- **Recognize that your tremendous customer base is your enduring strength**