Enterprise customers

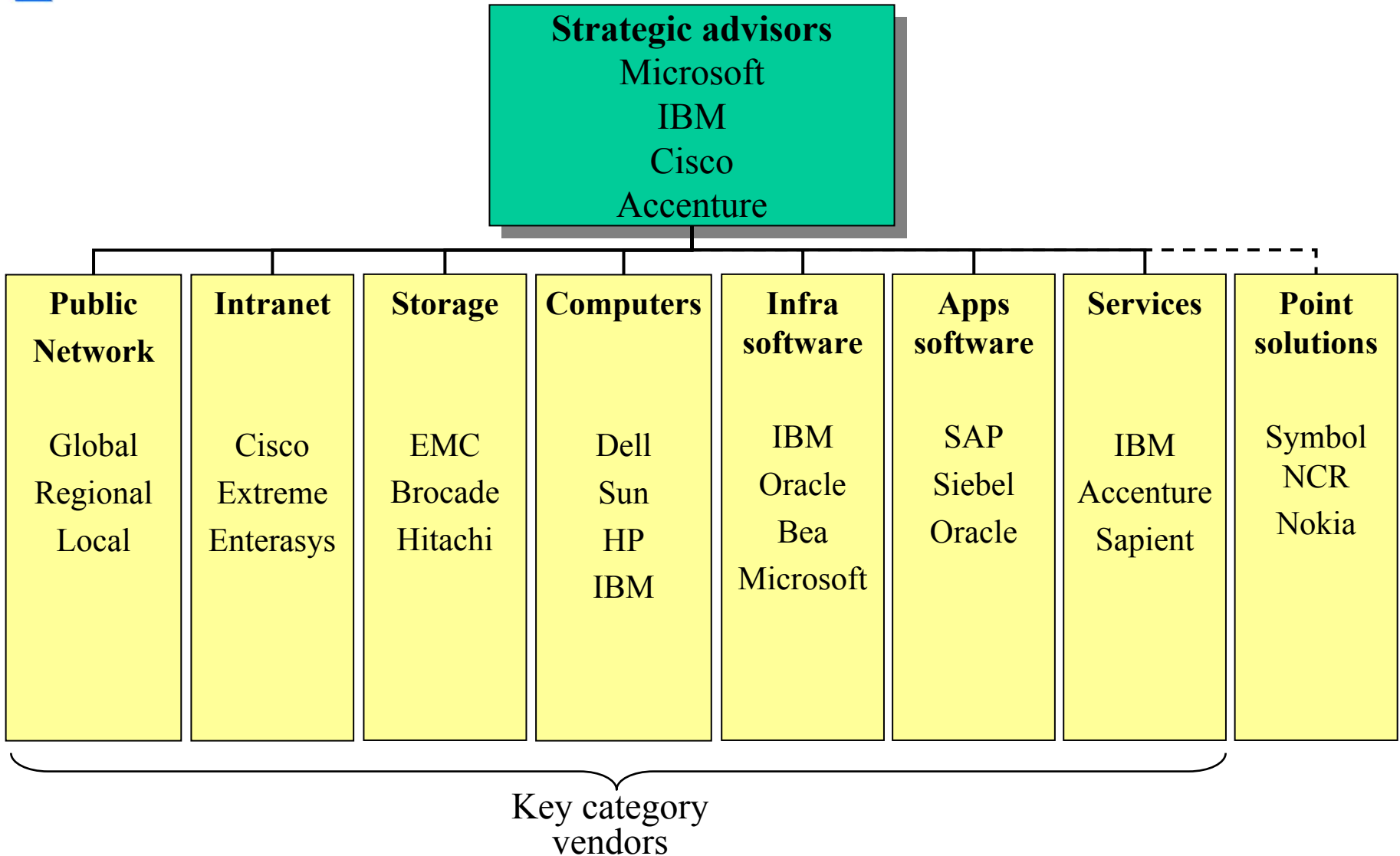S-38.041 Networking Business

Market figures of enterprise IT

- The average company
  - Spends about 4% of its gross revenue on IT
  - Spends about 6600 USD per year per employee
  - Has an IT headcount of 5-7% of total headcount
- Highest spending per employee in IT, telecom and financial sectors
- Global enterprise IT market
  - Total market value around 1000 BEUR in 2003
  - Largest part is system integration and outsourcing services
  - Around 50% of global IT spending happens in the US

Enterprise view of IT vendors

Strategic advisors
Microsoft
IBM
Cisco
Accenture

Public Network	**Intranet**	**Storage**	**Computers**	**Infra software**	**Apps software**	**Services**	**Point solutions**
Global Regional Local	Cisco Extreme Enterasys	EMC Brocade Hitachi	Dell Sun HP IBM	IBM Oracle Bea Microsoft	SAP Siebel Oracle	IBM Accenture Sapient	Symbol NCR Nokia

Key category
vendors

Total cost of ownership (TCO)

DIRECT			INDIRECT

Capital	*Labor*	*Fees/Other*	**End User IS**

DIRECT

Capital

Hardware
→Servers
→Clients
→Peripherals
→Network

Software
→Operating systems
→Applications
→Utilities
→IS

Acquisition Costs
→Depreciation
→Leasing
→Expenses

Upgrades and Supplies

Labor

Management
→Network
→System
→Storage

Support
→Executive and administration
→Help desk
→Training
→Procurement

Development
→Infrastructure
→Business applications

Fees/Other

Communication
→WAN
→Service provider
→RAS
→Internet access provider
→Client access

Management & Support
→Outsourcing
→Maintenance contracts
→Support contracts
→Service levels
→Performance and Service level Metrics

INDIRECT

End User IS
Peer/self support
→Casual learning
→Scripting/ development
→End-user Training
→Satisfaction

Downtime
→Planned
→Unplanned
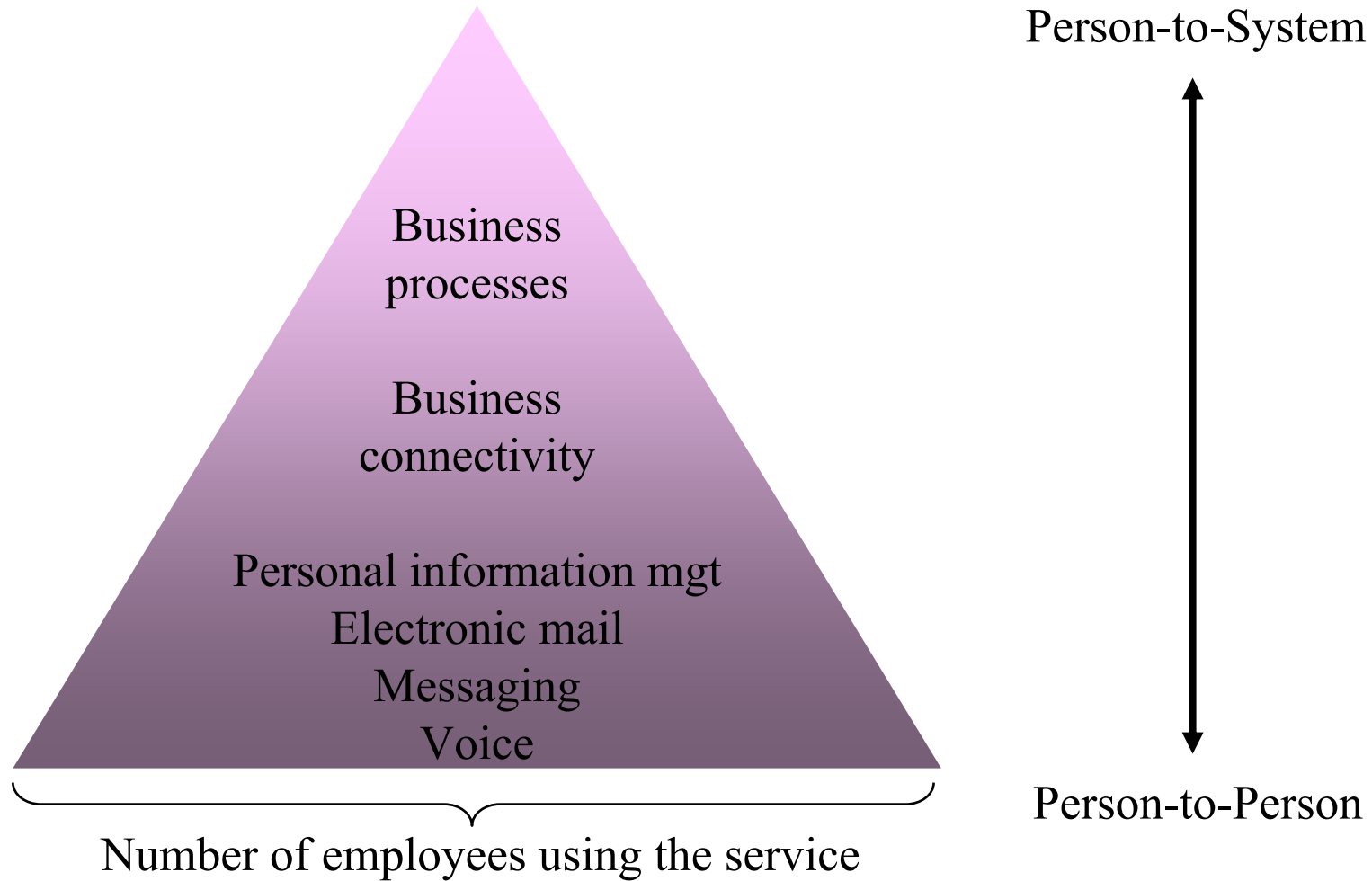
Total cost per mobile user

	Laptop	PDA	Cellphone
Acquisition	$2200	$600	$200
TCO	$12300	$1946	$1414
Investment life	3-4 years	24 months	18 months
Replacements	-	Twice	Twice
Total	($2K+$37K)x100 = **$3.9M**	(2x600+3x1,946) x100 = **$704K**	(2x200+3x1,414) x100 = **$464K**

Source: Gartner, 2003

Enterprise service usage profile

Person-to-System

Business
processes

Business
connectivity

Personal information mgt
Electronic mail
Messaging
Voice

Person-to-Person

Number of employees using the service

Role of Telecom Manager

- Telecom services belong to the strategic toolbox of all businesses
- Telecom Manager is the person responsible for defining and implementing the telecom services strategy of a company
- Telecom services strategy is closely related to the overall IT strategy
- Telecom Manager can be a part-time job of a CEO or a full-time job as a leader of telecom experts

Typical mission statement

Leverage telecommunications technology and services

to the greatest possible benefit and competitive advantage of the business

– at the lowest cost

Tasks of Telecom Manager

- Trouble resolution (measurable meters)
  - Trouble ticket system
  - Help desk system
  - Training and end-user education
- Project management (measurable meters)
  - Triggers for change: innovation, system life cycle, growth, financial reasons
  - Identify needs, solicit proposals, select vendors, supervise implementation
- Billing audit and review (measurable meters)
  - Inventory all company telecom services and equipment
  - Exercise audit approval of all telecom bills
  - Identify and target fraud abusers
- Strategic planning
  - Help to see how telecom aids the company strategy
  - Consolidate an centralize services, equipment, and billing wherever possible
  - Remain forward-looking into possibly useful new technology

Telecom purchase process

1. Define your need (must have/nice to have)

2. Request for proposal/quotation (RFP, RFQ)

3. Select a provider (optimize the price-quality ratio)
   - Prospecting (pick up max 5-10 candidates for brief interview)
   - Qualification (pick up the top 3-4 for solution presentation)
   - Presentation (pick up 2 for finals, visit reference customers)
   - Closing (check terms and conditions, with your lawyer…)

4. Manage change successfully
   - Do your part
   - Keep the timeline
   - Be serious about training
   - Know when to cry wolf
   - Tell your customers

Typical RFP content

- Existing environment
- Applications (service level agreements/SLA)
- Cost expectations
- Format guidelines of response
- Contact rules
- Time frames

Portfolio of services

Business telephone system

- Office voice switching (PBX vs Centrex, packet vs circuit)
- Office voice access (wireline vs wireless)
- Long-distance calls
- Value-added services (voice mail, call centers, …)

PC connectivity

- Internet access (fiber, ADSL)
- Intranet (leased lines … managed VPN)
- Value-added services (mailboxes, web hosting, …)

Mobile wireless services

- Cellular (GSM, WCDMA)
- Professional mobile radio (TETRA, iDEN)
- Two-way radio/walkie-talkies

Portfolio of service providers

Local fixed network operator

- Main asset: wireline network, subscriber base
- Trend: joining forces with other players

National cellular network operator

- Main asset: national cellular coverage, subscriber base
- Trend: expanding to full-service, and MVNO

Service operator

- Main asset: server bank, customer service
- Trend: packaging mobile and fixed services, VoIP

System integrator

- Main asset: tailored software, project mode
- Trend: exploiting the VoIP and MVNO opportunities

Business customer segments

Number of employees

- Small => Price list process (cmp. consumer customers)
- Large => RFP process

Location

- Multisite => VPN issues (voice, Intranet)
- International => Multioperator issues

Ownership

- Private => Demand-driven flexible purchase process
- Government => Budget-driven regulated purchase process

Business and service duration

- Continuous => Customer retention focus
- Event (e.g. sports, conferences) => General marketing focus

Specific business domains

Impact of value nets

- IT enables companies moving from value chains to nets
- Adversaries are becoming strategic partners
- Companies increasingly outsource, share, and off-shore ICT solutions
- Extranets
  - From dedicated networks to Internet
  - Centralized directory and brokage servers
- Voice-over-IP
  - Load trading of outsourced VoIP-PABX capacity
  - Integration of business rules with VoIP

Managing market uncertainty

- Assess market uncertainty

- Choose your risk level

- Experiment with parallel projects
  - Cut downside, "eggs in different baskets"
  - Add upside, "buy several lottery tickets"

- Keep learning
  - Use incremental decision milestones for projects
  - Recalculate business cases of projects
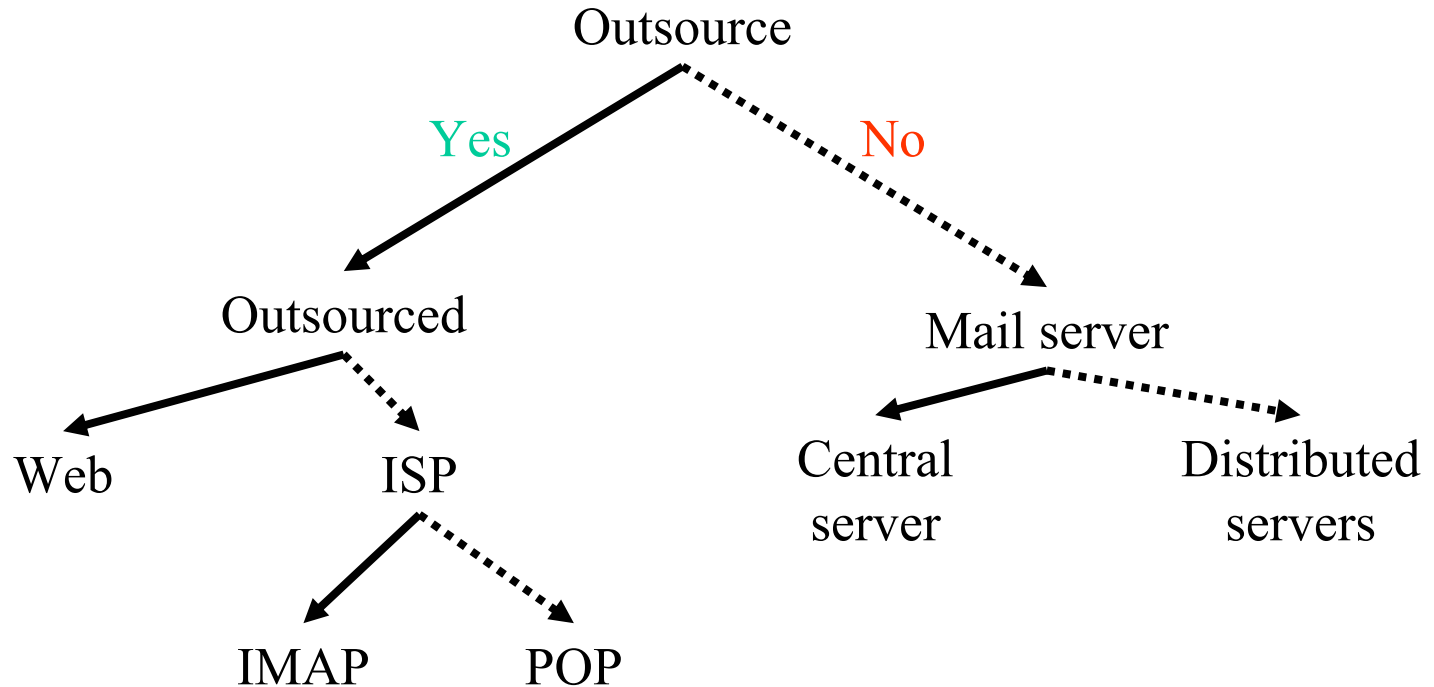
Market uncertainty
How to measure it?

- Ability to forecast the market
- Emergence of a dominant design
- Agreement among industry experts
- Feature convergence and commodity nature
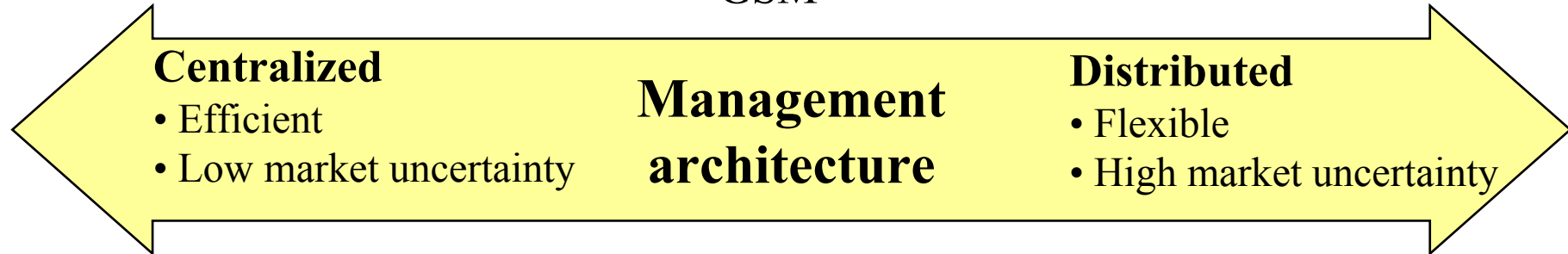- Changes in standards activity
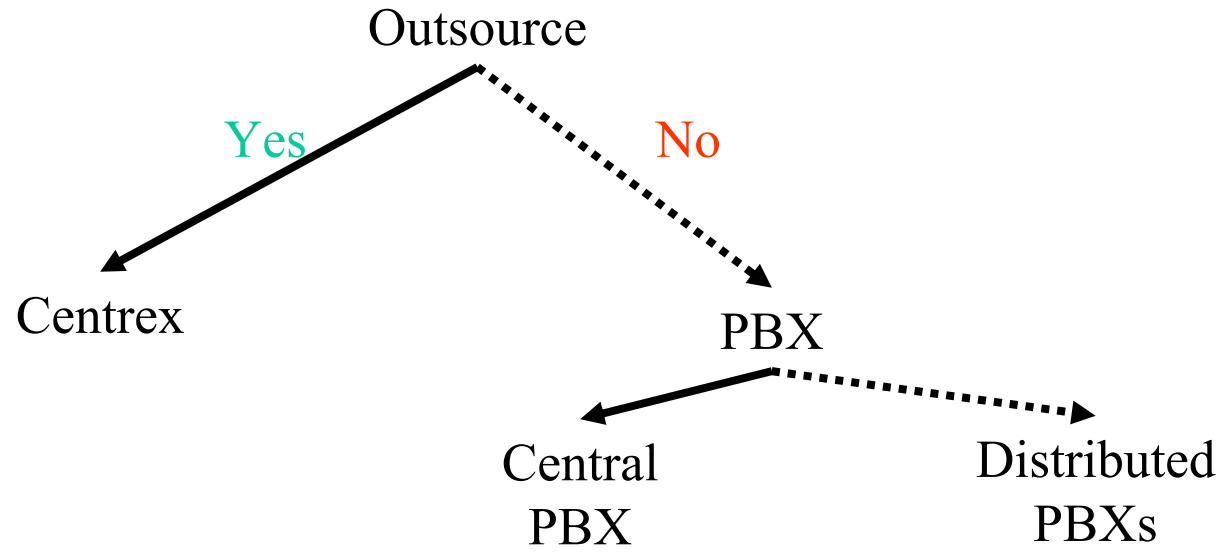
Choice of management structure

Case: email service

Outsource

Yes   No

Outsourced   Mail server

Web   ISP   Central
server   Distributed
servers

IMAP   POP

Centralized
• Efficient
• Low market uncertainty

**Management
architecture**

Distributed
• Flexible
• High market uncertainty

Choice of management structure

Case: office voice service

Outsource

Yes   No

Centrex   PBX

Central   Distributed
PBX   PBXs

VoIP ┈┈┈▶
◀─── GSM

Centralized
• Efficient
• Low market uncertainty

Management architecture

Distributed
• Flexible
• High market uncertainty

Choice of management structure

Case: informational service (web)

Outsource

Yes   No

Outsourced web-server   Self-managed web-server

Service provider manages content   User manages content   Central server   Distributed servers

Centralized
• Efficient
• Low market uncertainty

Management architecture

Distributed
• Flexible
• High market uncertainty
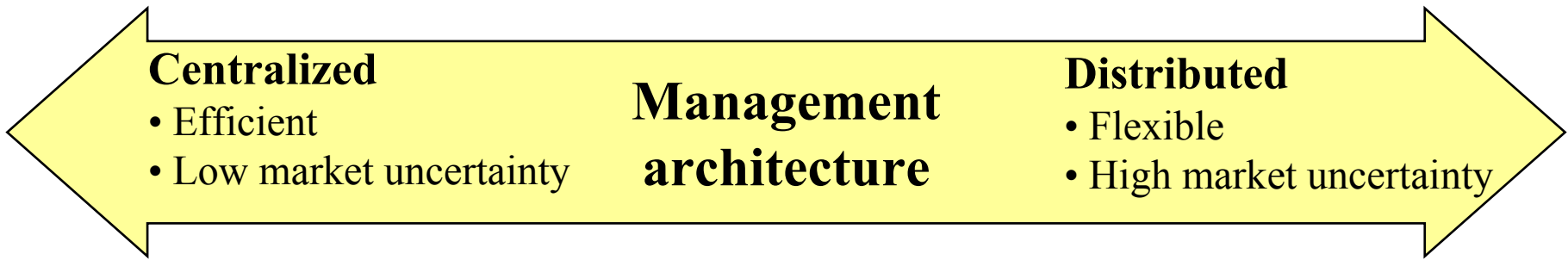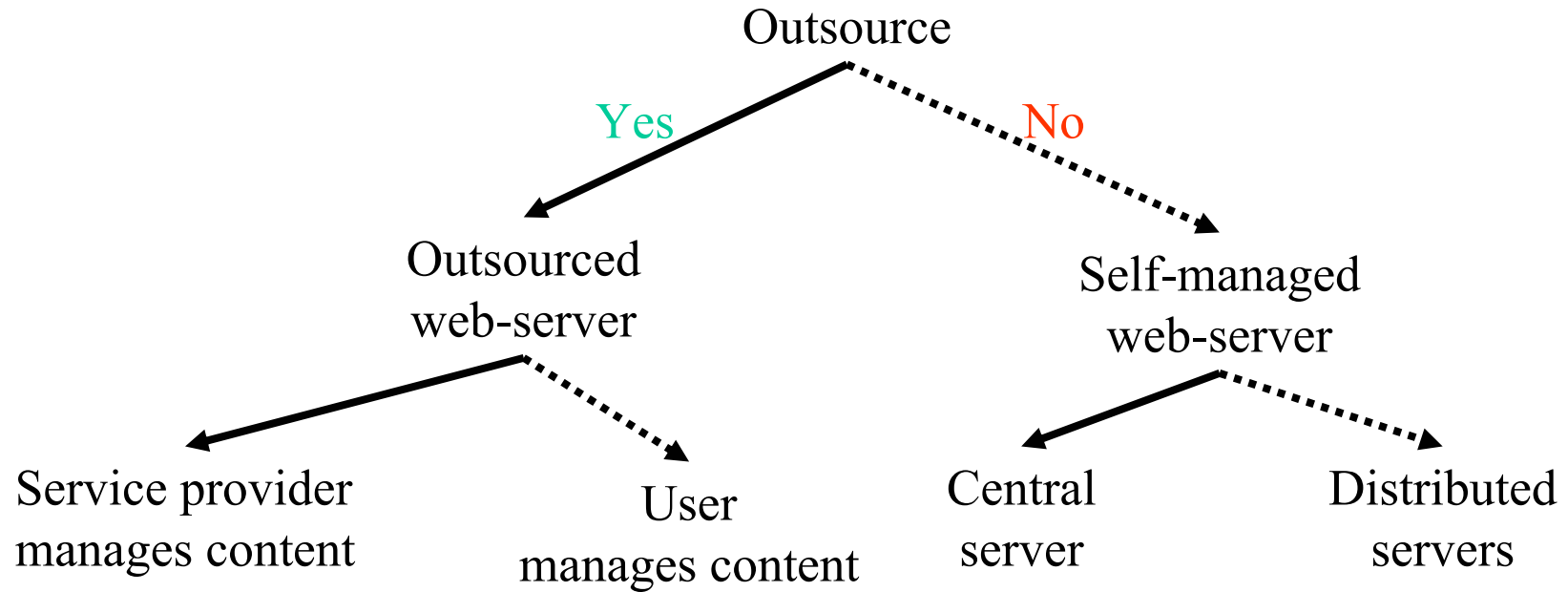
Value of experimentation
Real options theory

Value of experimentation

1. increases as the market uncertainty increases

2. increases (in a decreasing manner) as the number of parallel experiments increases

3. decreases (in a decreasing manner) as the learning develops over generations of experiments

Value of experimentation
Examples

- Internet
- GPRS content
- NTT DoCoMo i-mode content
- Microsoft Windows applications
- Symbian OS applications

Ecosystems that exploit the value of
experimentation are more likely to match market needs

Case: Finnish Universities

Telephony service cost

	#	Average per employee (€/y)	Deviation (€)
Polytechnic schools	6	472	149
Universities	8	250	104
< 1000 employees	8	447	138
> 1000 employees	6	210	77

How to reduce cost?

- Going GSM-only
- Going VoIP-only

Source: HUT MSc thesis (J Viskari)

Case: Finnish Universities

Telephone service cost
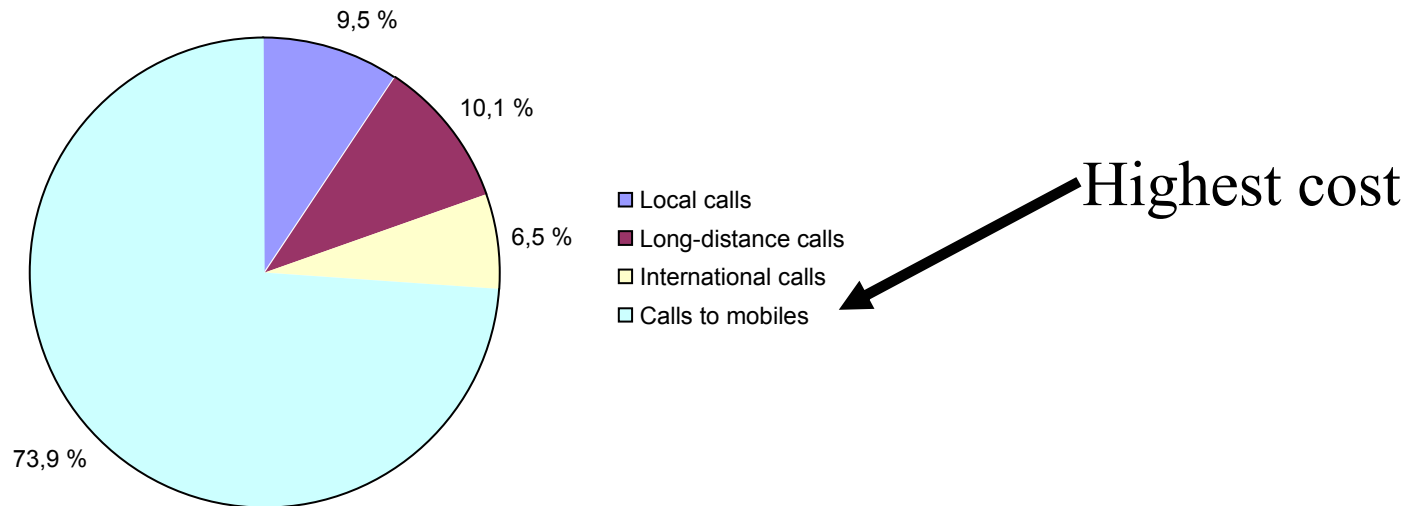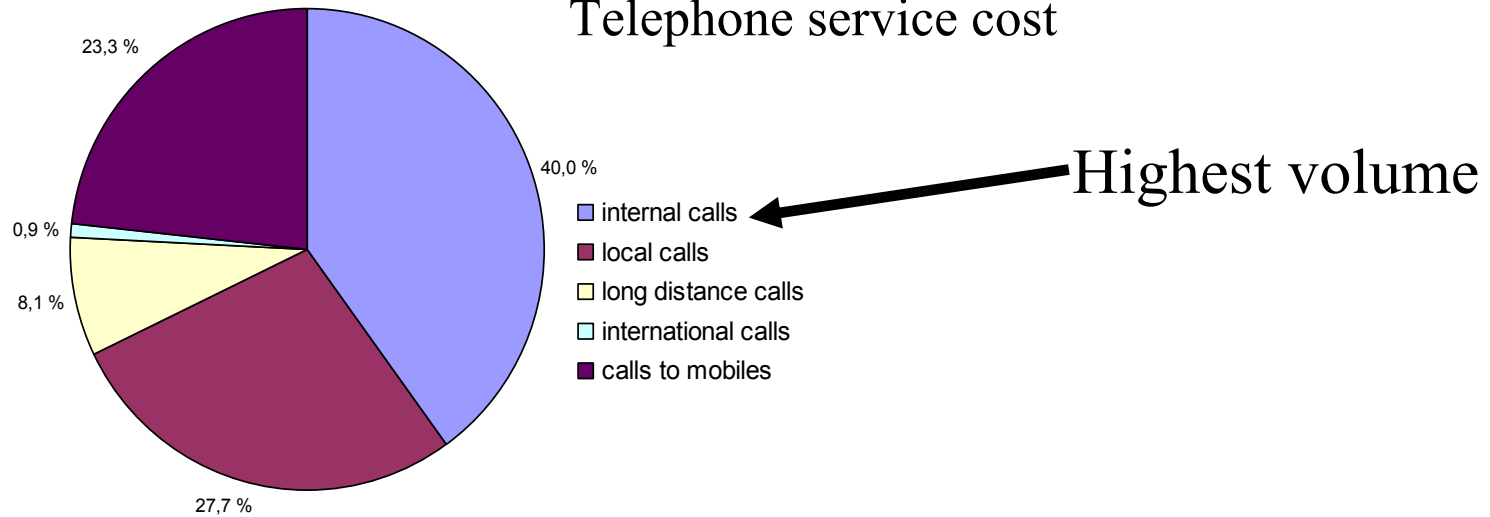
Highest volume

- internal calls 40,0 %
- local calls 27,7 %
- long distance calls 8,1 %
- international calls 0,9 %
- calls to mobiles 23,3 %

Highest cost

- Local calls 9,5 %
- Long-distance calls 10,1 %
- International calls 6,5 %
- Calls to mobiles 73,9 %

Source: HUT MSc thesis (J Viskari)

Case: Finnish Universities
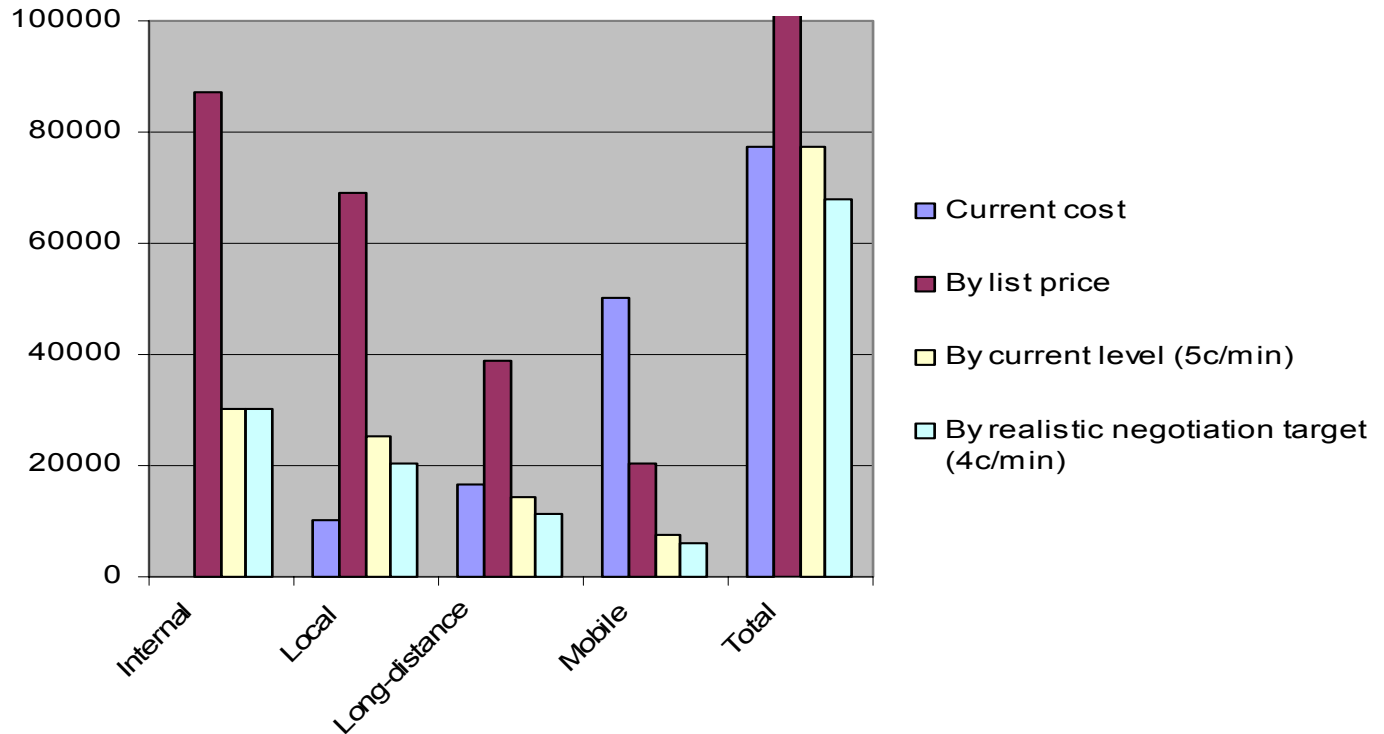
Reference case: Traffic costs of "pure VoIP"

Legend: Nykyinen, Uusi
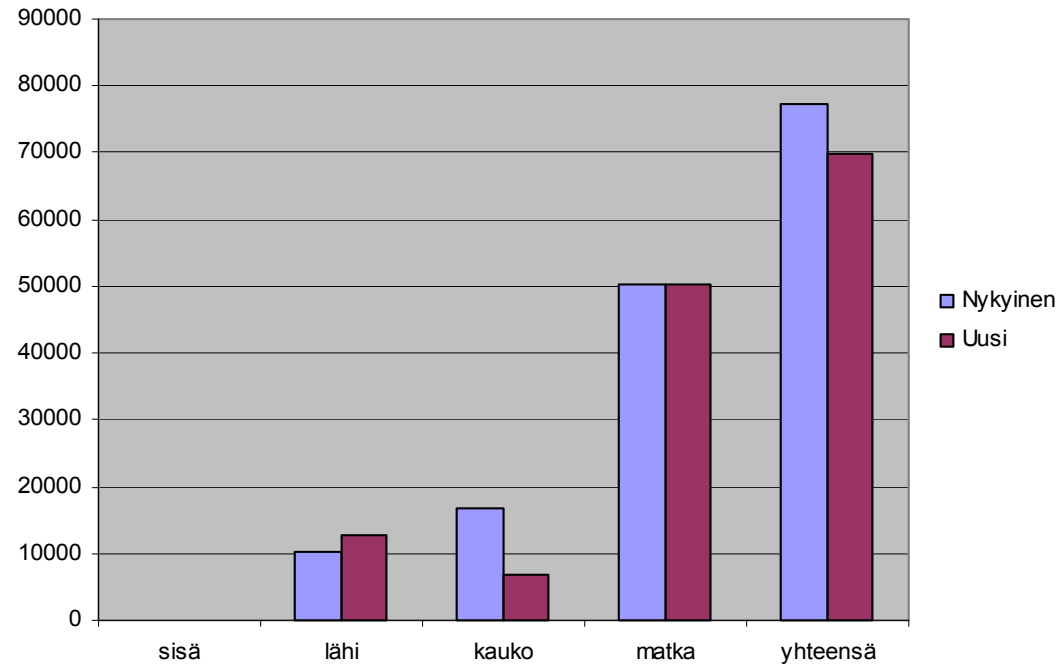
Assumptions
- 17% of calls to other universities (no long-distance charge)
- 40% of mobile calls internal (based on study)

Case: Finnish Universities

Reference case: Traffic costs of "Pure GSM"

Legend:
- Current cost
- By list price
- By current level (5c/min)
- By realistic negotiation target (4c/min)

X-axis: Internal, Local, Long-distance, Mobile, Total

Assumptions

- No handset cost (employee-owned handsets)
- 40% of mobile calls internal (based on study)

Source: HUT MSc thesis (J Viskari)

Case: Large event
World Championships in Athletics (WCA), Helsinki 2005

- Lots of temporary capacity needed
    - temporary cabling (voice, data, video)
    - additional radio capacity (GSM, WCDMA, TETRA, WLAN)
    - several temporary Intranets
    - temporary servers and terminals
- Operators have established dedicated event units
- Traffic costs small compared to fixed costs
- CAPEX is small compared to OPEX
- Wireless has better cost-benefit ratio than wireline for temporary use, but the high risk of failures favors wireline