Operator’s Enterprise Customers

Big Picture of Enterprise ICT

- From products to services (”whole products”)
- Toward more flexible partnerships
  - From value chains to value nets
  - Toward outsourcing, sharing, and off-shoring
- Toward intranets, extranets, and Internet
  - From dedicated networks to IP-based
  - Toward directory and brokerage servers
  - Toward Voice-over-IP

Enterprise ICT in Figures

- The average enterprise in the US spends
  - c. 4% of its gross revenue on ICT
  - c. 500 EUR per month per employee on ICT
  - c. 5-7% of total headcount on ICT headcount
  - c. 60 EUR per employee per month on mobile (operator ARPU)
- Highest ICT spending per employee in ICT, telecom, and financial sectors
- Global enterprise ICT market
  - c. 1000 BEUR in 2003
  - largest part is system integration and outsourcing services
  - c. 50% of global ICT spending happened in the US still in 2003

Enterprise View of ICT vendors

Strategic advisors
Microsoft
IBM
Cisco
Accenture

Public Network Services	Intranet	Storage	Computers	Infra software	Apps software	Services	Point solutions
Global Regional Local	Cisco Juniper Extreme Enterasys	HP IBM EMC Hitachi	Dell Sun HP *Lenovo*	IBM Oracle *(Bea)* Microsoft *Google*	SAP Oracle *(Siebel)*	IBM Accenture Sapient	Nokia F-Secure …

Key category vendors

Total Cost of Ownership (TCO)

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 employee

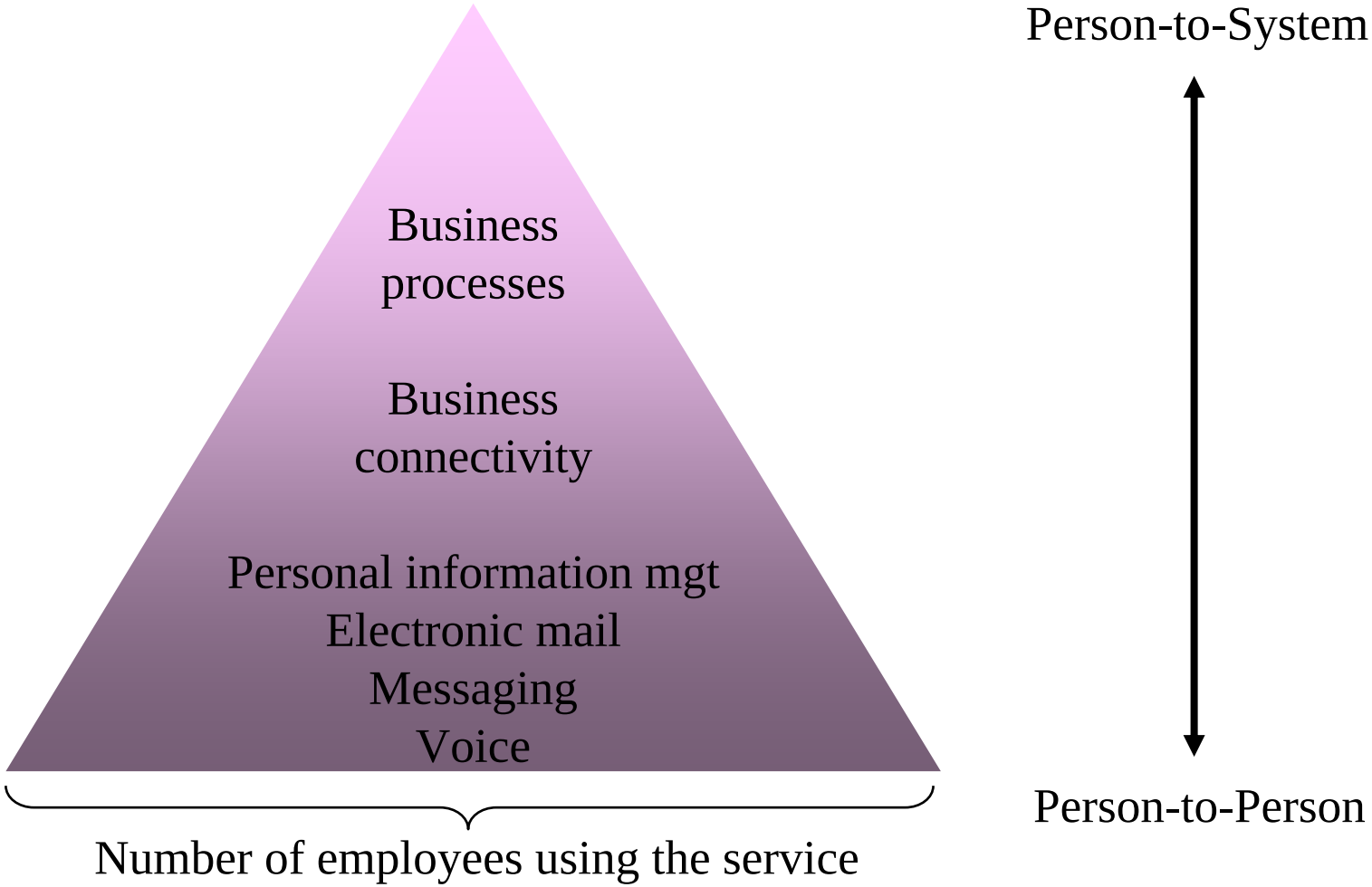
Case: 100 terminals for 3 years



	Laptop	**PDA**	**Mobile phone**
Acquisition	2200e	600e	200e
TCO per year	12300e	1946e	1414e
Investment life	3-4 years	24 months	18 months
Replacements	-	Once	Once
Total	(2200+3x12300) x100 = **3900ke**	(2x600+3x1946) x100 = **704ke**	(2x200+3x1414) x100 = **464ke**

Source: Gartner, 2003

Enterprise service usage profile



Role of ICT/Network Manager

- Network services belong to the strategic toolbox of all enterprises
- Network Manager is the person responsible for defining and implementing the network services strategy of a company
- Network services strategy is closely related to the overall ICT strategy
- Network Manager can be a part-time job of a CEO or a full-time job as a leader of networking experts

Typical mission statement

Leverage networking technology and services

to the greatest possible benefit and competitive advantage of the business

– at the lowest cost

Tasks of ICT/Network Manager

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

ICT 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

Office telephone system

- Office voice switching (in-house vs. outsourced, VoIP vs. POTS)
- Office voice access (wireline vs wireless)
- Long-distance (VPN, public connectivity)
- Value-added services (voice mail, call centers, …)

Office IP connectivity

- Intranet
- Internet access, Extranet services
- Value-added services (mailboxes, web hosting, …)

Wireless services for mobile employees

- Cellular and WLAN
- 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

Systems integrator

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

Operator's Customer Segments

Number of employees in enterprise

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

Location of enterprise

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

Enterprise ownership

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

Enterprise's business and service duration

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

Specific business domains

Managing Market Uncertainty

- Assess market uncertainty
- Choose your risk level
- Experiment with parallel projects
  - Cut downside, “put eggs in different baskets”
  - Add upside, “buy several lottery tickets”
- Keep learning
  - Use incremental decision milestones for projects
  - Recalculate business cases of projects

Source:M.Gaynor, 2003

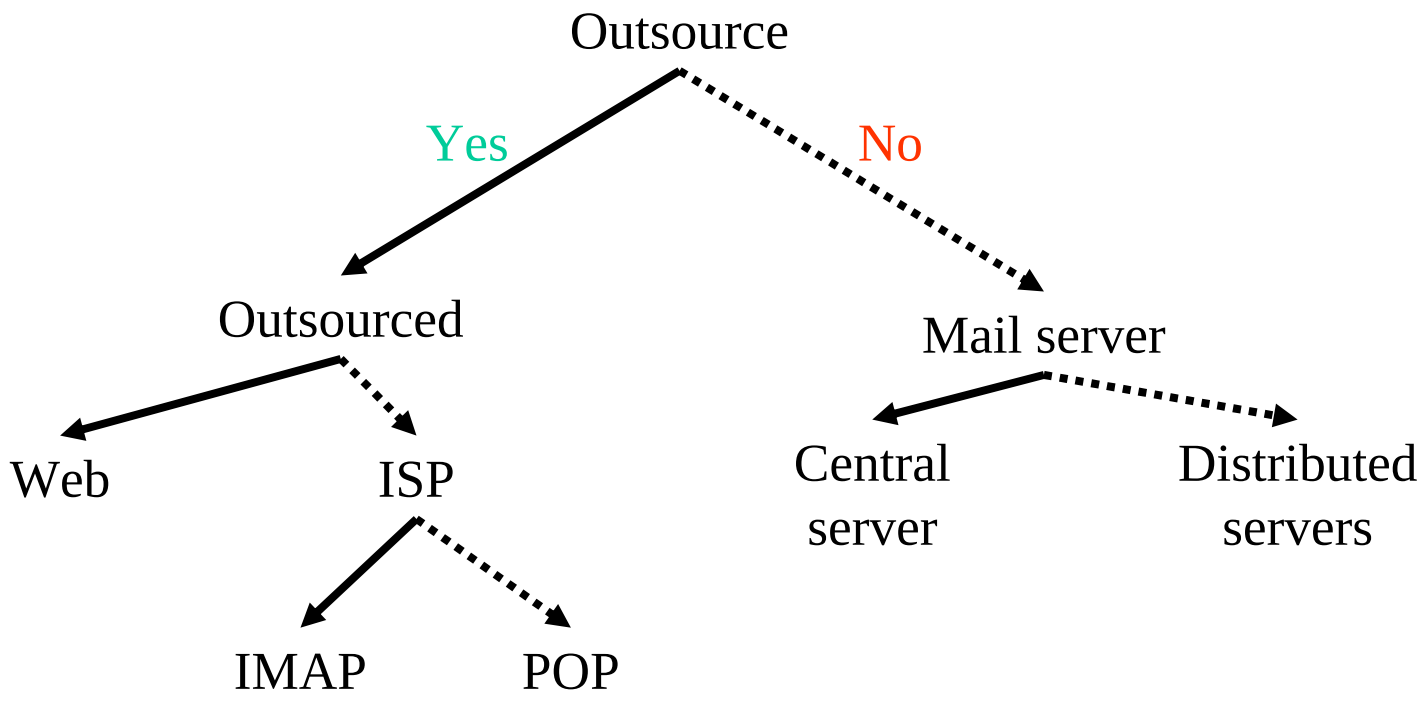
Market uncertainty

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



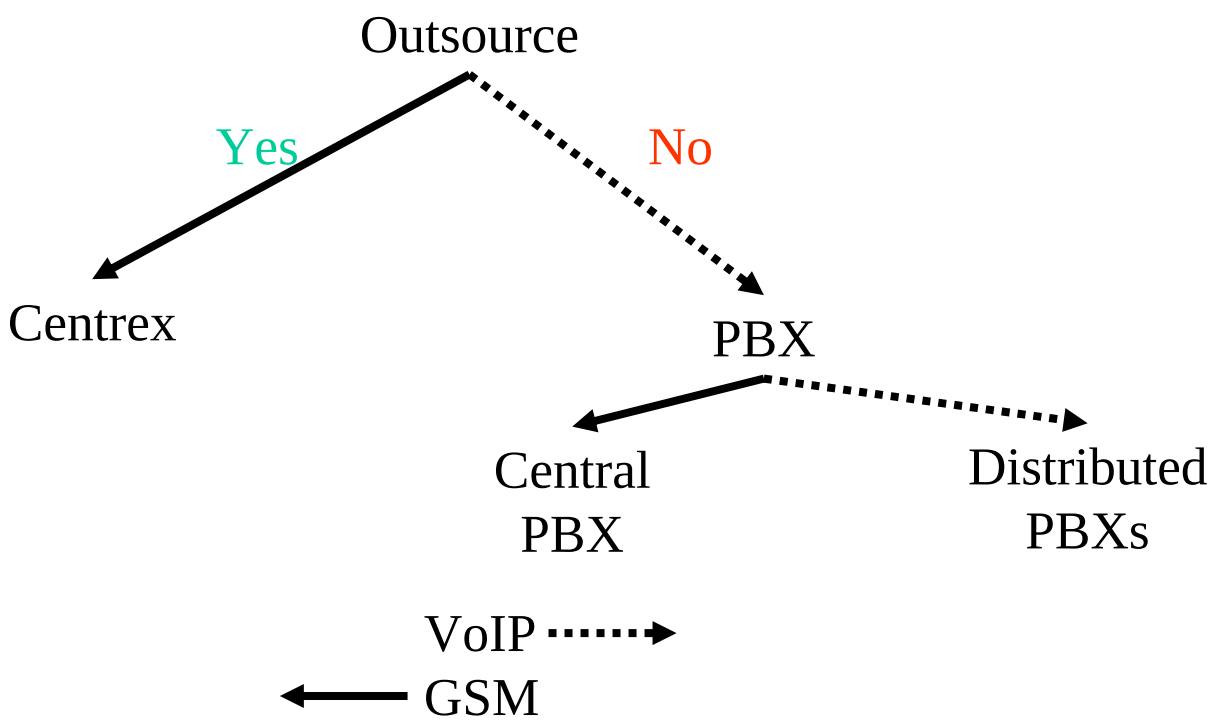
Centralized
- Efficient
- Low market uncertainty

Management architecture

Distributed
- Flexible
- High market uncertainty

Choice of Management Structure

Case: office voice service



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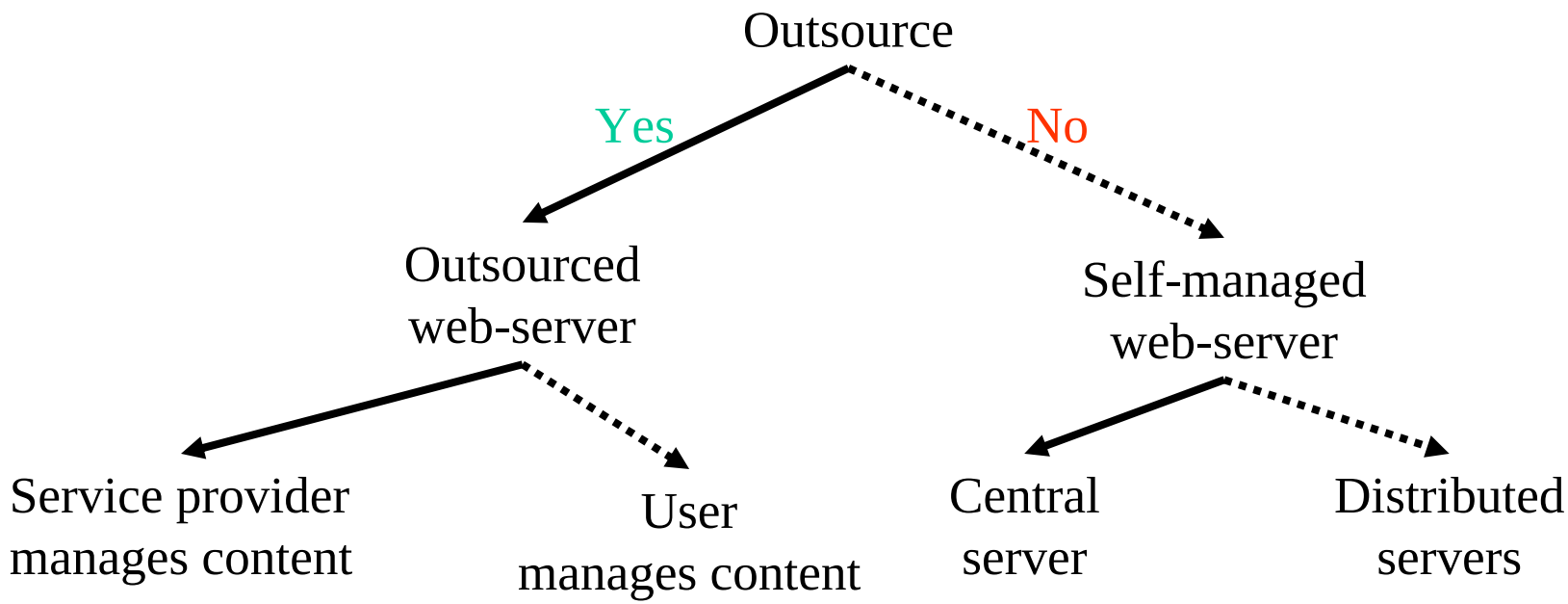
Choice of Management Structure

Case: informational service (web)



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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 the 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

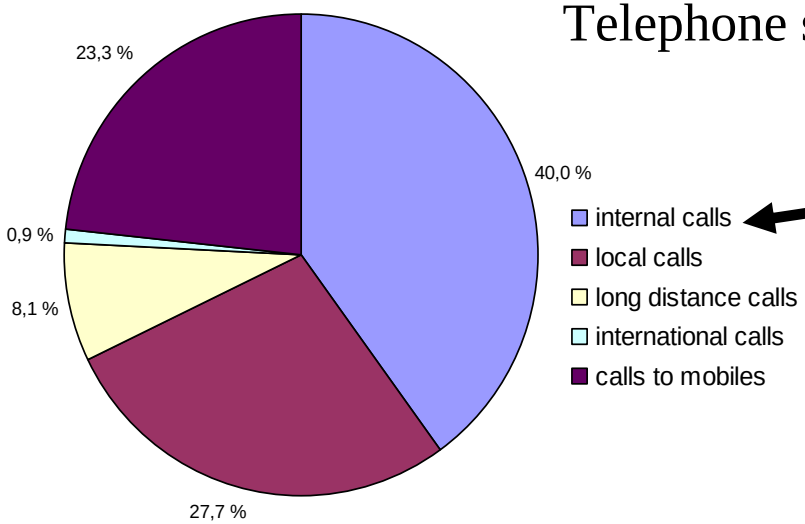
How to reduce cost?

- Going GSM-only
- Going VoIP-only

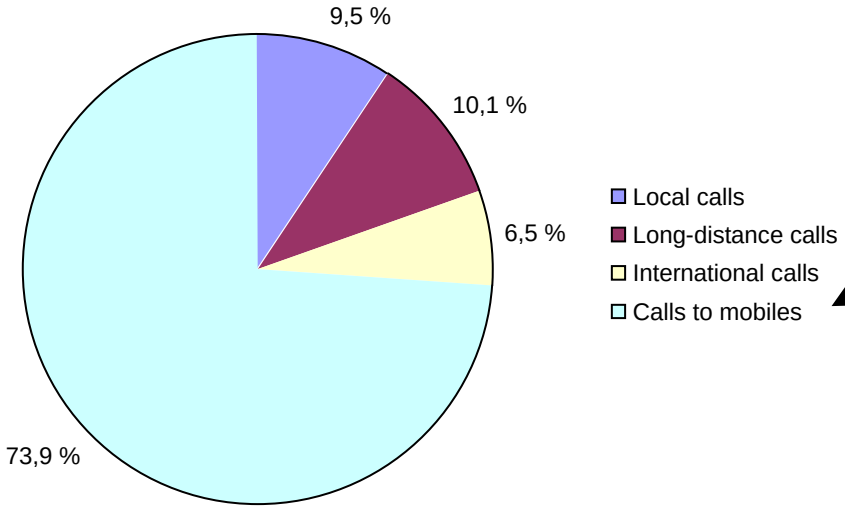
Source: J. Viskari, 2004

Case: Finnish Universities

Telephone service cost



Highest volume

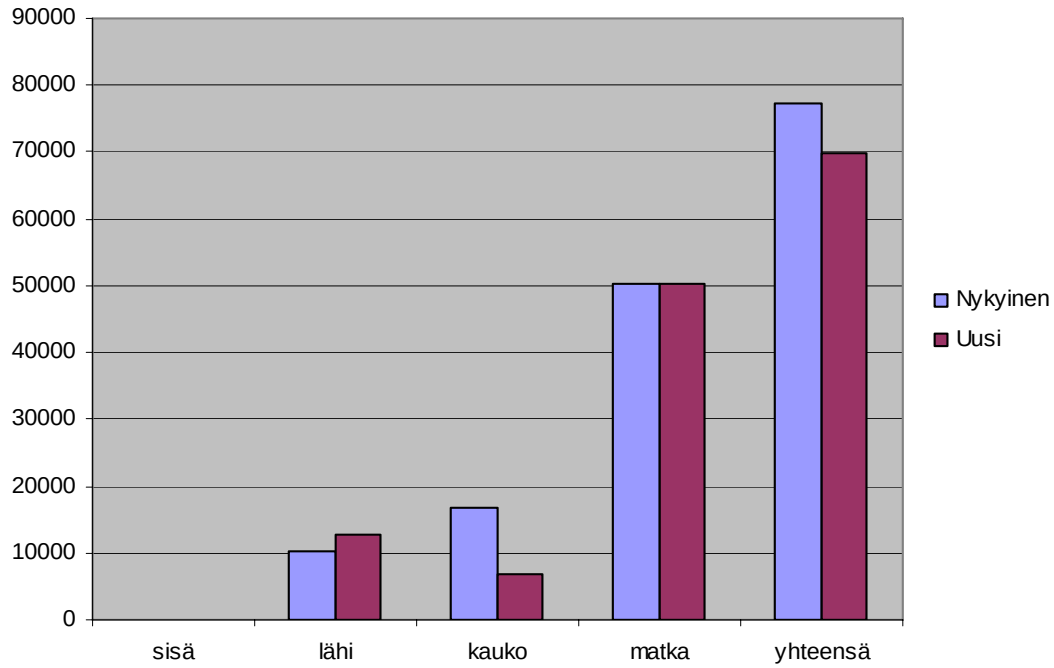


Highest cost

Source: J Viskari, 2004

Case: Finnish Universities

Reference case: Traffic costs of ”pure VoIP”



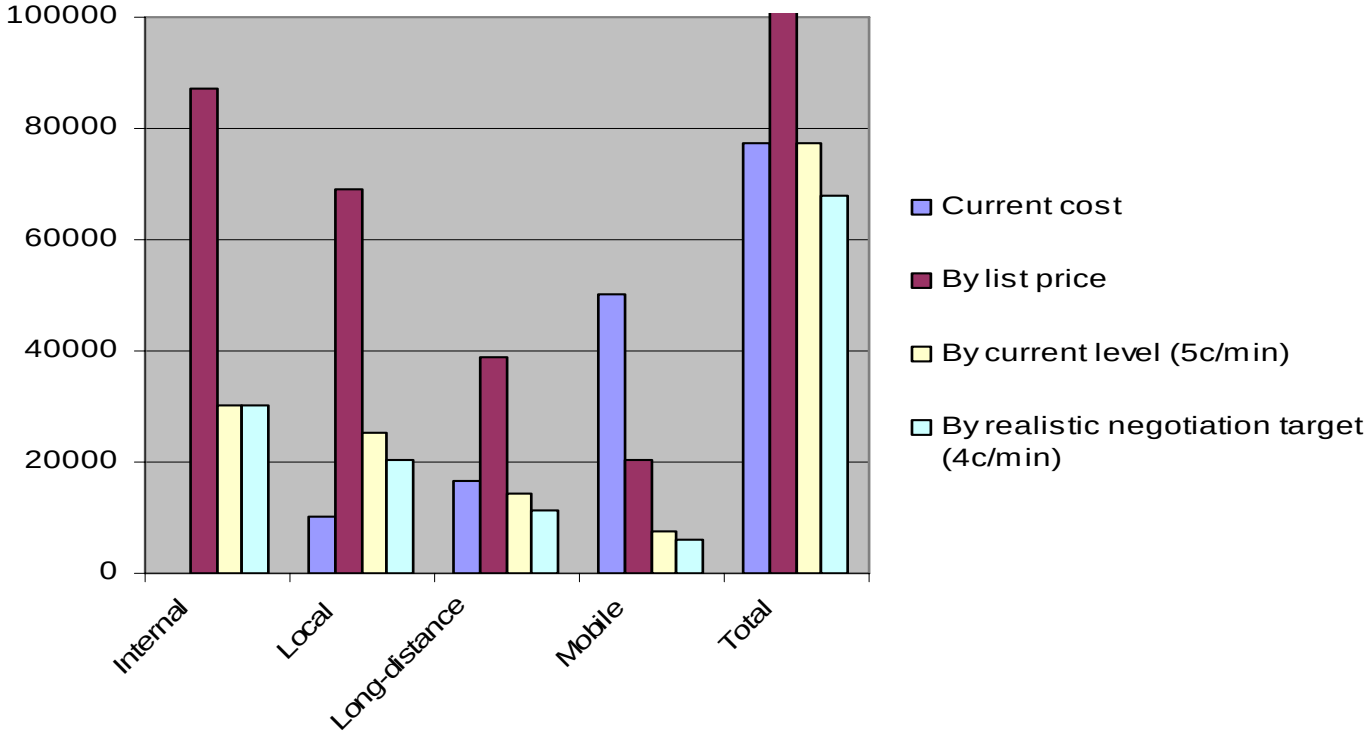
Assumptions

- 17% of calls to other universities (no long-distance charge)
- 40% of mobile calls internal (based on study)

Source: J Viskari, 2004

Case: Finnish Universities

Reference case: Traffic costs of ”Pure GSM”



Assumptions

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

Source: J Viskari, 2004

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 teams
- 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