



Operator's Enterprise Customers

S-38.041 Networking Business

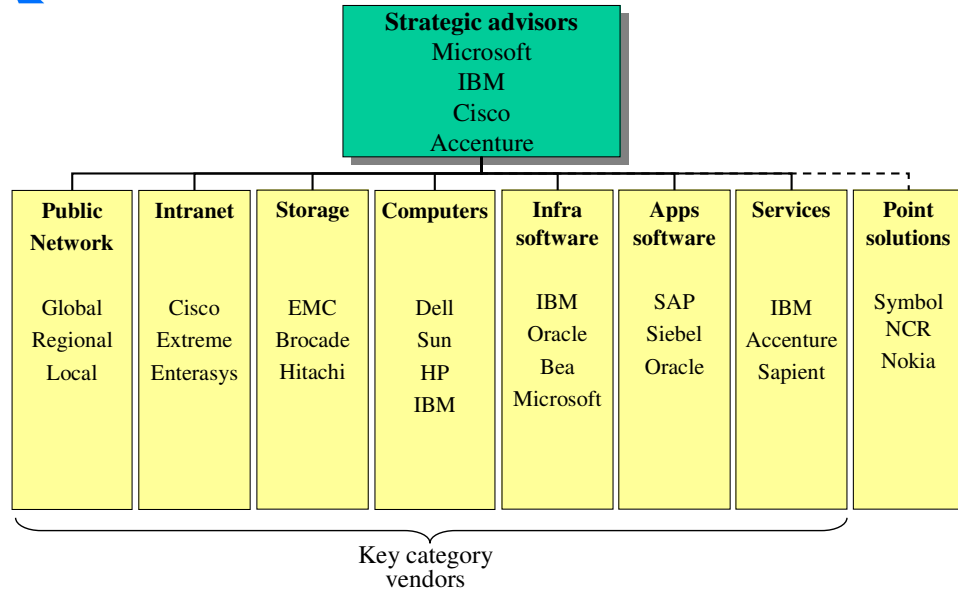


Enterprise IT in Nutshell

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



Enterprise view of IT vendors



Key Issue Analysis

TCO is a powerful tool that is used to identify opportunities for better managing the IT environment. Some analysis, such as that needed to make an outsourcing decision, is impossible without understanding internal cost structures — including hidden costs. Enterprises that fail to account for all costs will also fail to see IT costs increase beyond sustainable and justifiable levels, and will make poor IT management decisions.



Total cost of ownership (TCO)

DIRECT			INDIRECT
<i>Capital</i>	<i>Labor</i>	<i>Fees/Other</i>	
Hardware → Servers → Clients → Peripherals → Network Software → Operating systems → Applications → Utilities → IS Acquisition Costs → Depreciation → Leasing → Expenses Upgrades and Supplies	Management → Network → System → Storage Support → Executive and administration → Help desk → Training → Procurement Development → Infrastructure → Business applications	Communication → WAN → Service provider → RAS → Internet access provider → Client access Management & Support → Outsourcing → Maintenance contracts → Support contracts → Service levels → Performance and Service level Metrics	End User IS Peer/self support → Casual learning → Scripting/development → End-user Training → Satisfaction Downtime → Planned → Unplanned

Key Issue: How is TCO used most effectively today?

Why measure TCO?

To obtain a better understanding of how IT investments support – or do not support enterprise business goals and processes

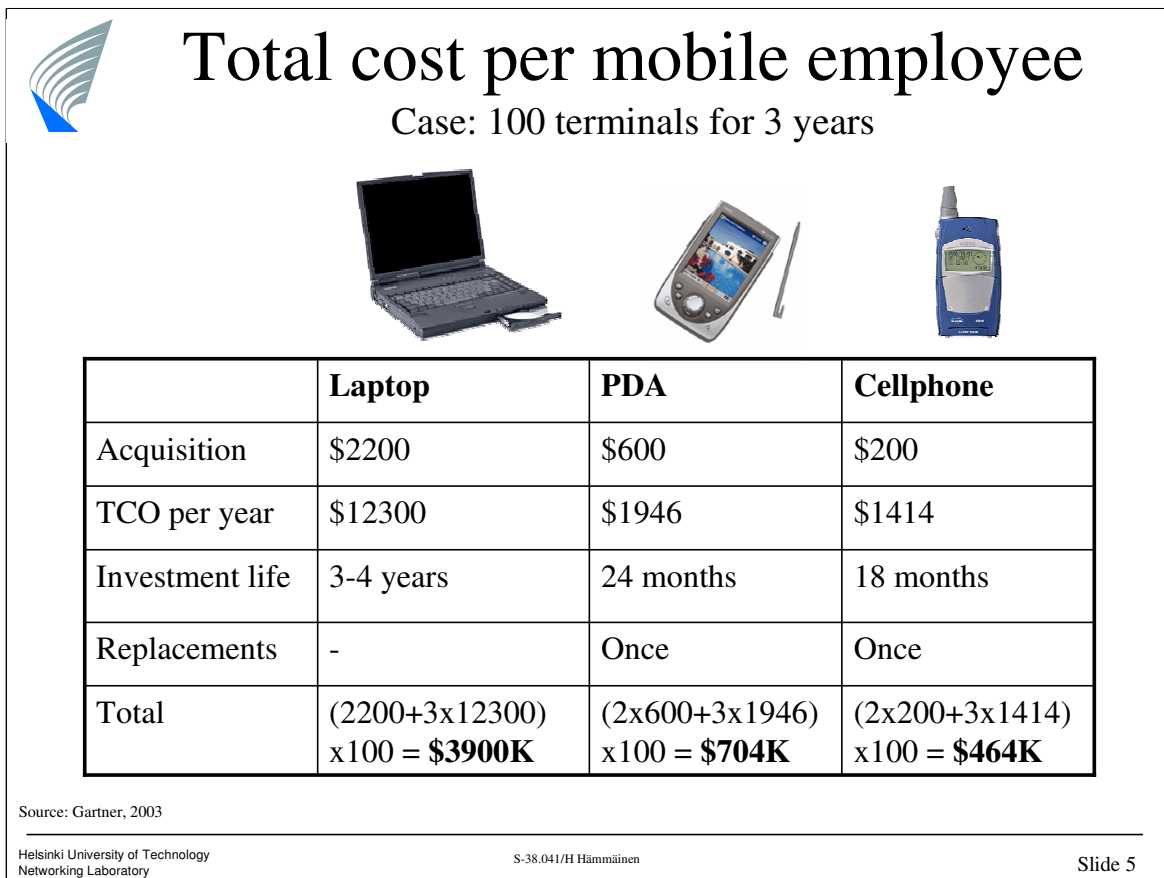
To gain objective information on costs and savings opportunities in “right-sizing,” outsourcing and internal resource allocation

To identify and implement strategies for improving IS operations and performance

To gain comparative, competitive data against industry indices, best in class or peer enterprises

To understand key metrics and measurements needed to better run IS operations and provide value back to the enterprise

Strategic Planning Assumption: Through 2007, full support for PDAs' mobile phones will raise enterprise total cost of ownership (TCO) for client devices by at least 30 percent per user per year (0.7 probability).



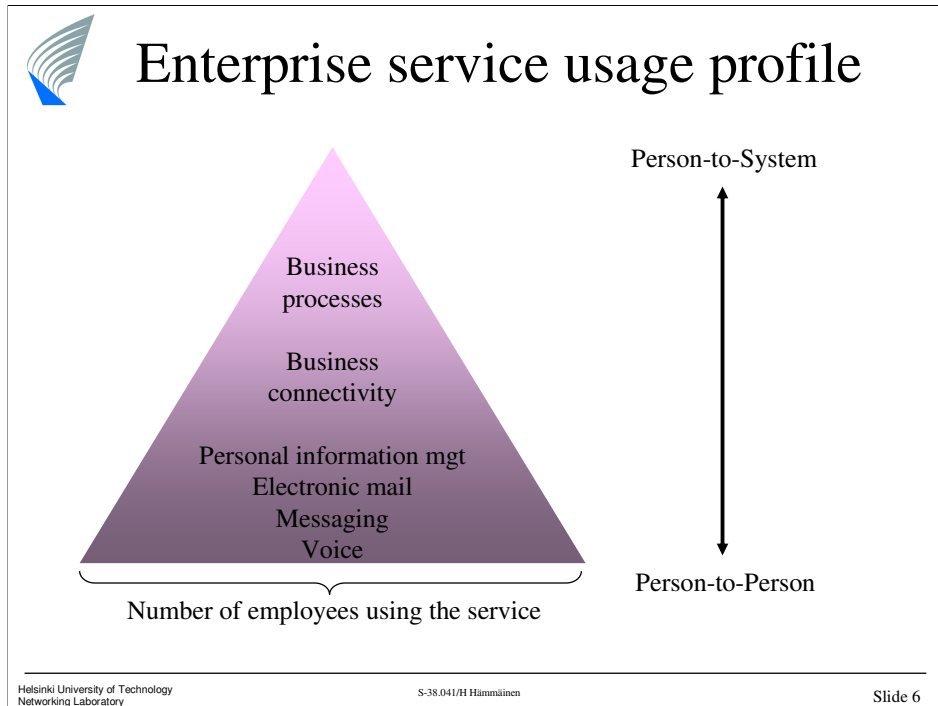
How will mobile, wireless management evolve?

As individuals carry more and more mobile devices — now up to several phones and PDAs *in addition* to a laptop or notebook — the cost per individual to the enterprise for safeguarding and managing platforms and data will rise. As illustrated above, Gartner provides the analysis for assessing and managing such costs.

Gartner's analysis of TCO for PDAs or smart phones with personal information manager (PIM) features is based on a review of the Windows and Palm platforms. Capital costs are based on a device with an acquisition cost as low as \$150, but growing to \$600 or more after accounting for accessories, travel kits, initial asset management and user setup. Provision is included for lost devices. Administration costs are considered equal for both platforms. Technical-support costs are slightly higher for Windows devices due to more-complex user interfaces. End-user operation costs represent about 40 percent of all costs, primarily due to the time investment required to keep PDAs synchronized with user desktops or servers.

Even at a few minutes per day (five minutes was factored into the estimate), this activity is a new diversion of user time that costs enterprises more than they might think.

Action Item: Enterprises should use TCO models to establish realistic expectations for support costs.



Employees need a multitude of services – but not everyone needs all services

- Nokia takes a holistic approach to enterprise
- Rather than horizontal
 - RIM – email
 - MSFT – PIM
 - SAP – business processes
- We know we are not the only one looking at this holistically, but our strength in enabling appl
- Understanding the entire ecosystem here is the key
- Email is hot item now, but will likely become a commodity like mobile voice is today, but mob

Business processes

Office applications and company specific vertical applications

Business connectivity

Access to intranet from PC/laptop/ terminal

PIM

Calendar, phonebook, contacts

e-mail

e-mail to PC or mobile

Messaging

Voice, SMS, MMS, instant messaging

Voice

Calls in office and on the move



Role of Telecom Manager

- Telecom services belong to the strategic toolbox of all enterprises
- 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 and 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



Operator's 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

- ICT moves companies from value chains to value nets
- More dynamic partnerships
- Companies increasingly outsource, share, and off-shore ICT solutions
- Extranets
 - From dedicated networks to Internet
 - Centralized directory and brokerage servers
- Voice-over-IP
 - 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, “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

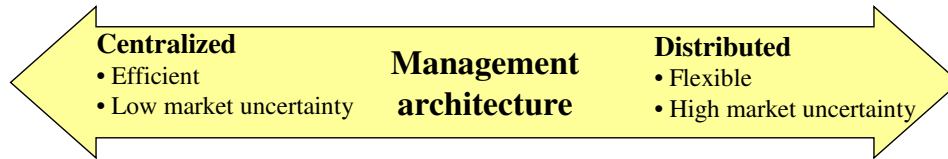
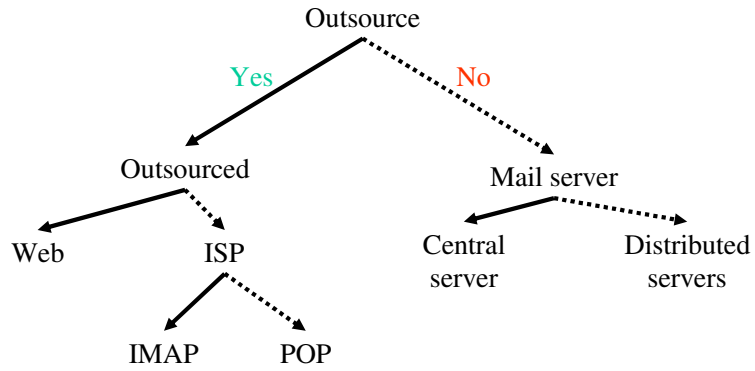
How to measure it?

- 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

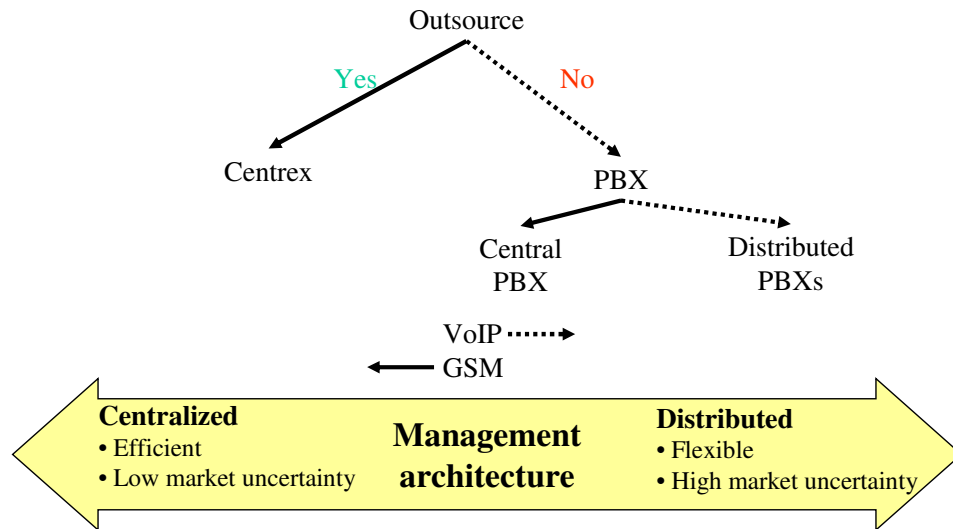
Case: email service





Choice of management structure

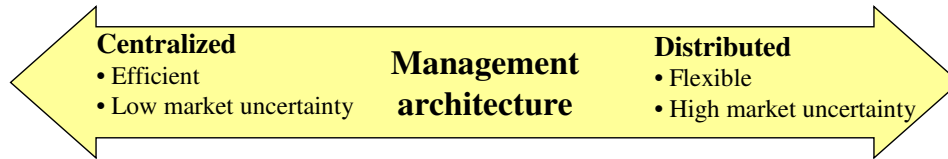
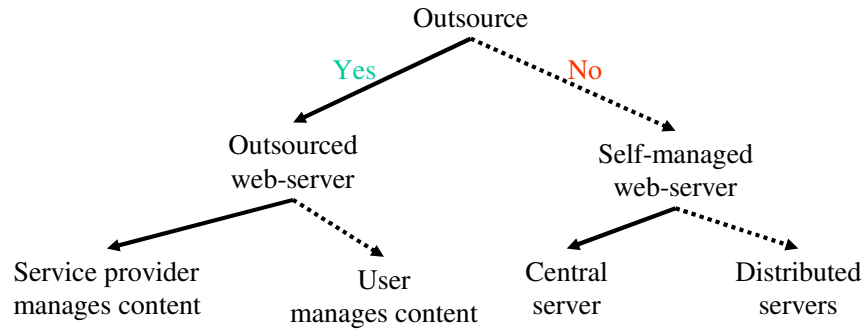
Case: office voice service





Choice of management structure

Case: informational service (web)





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?

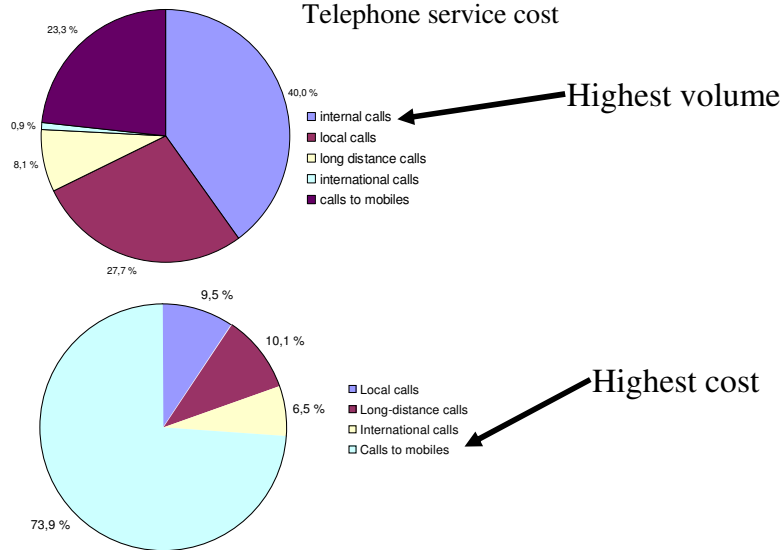
- Going GSM-only
- Going VoIP-only

Source: J. Viskari, 2004



Case: Finnish Universities

Telephone service cost

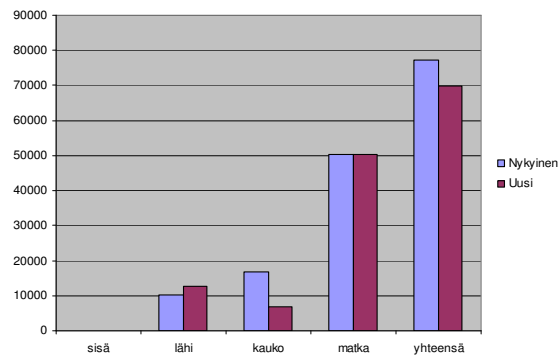


Source: J Viskari, 2004



Case: Finnish Universities

Reference case: Traffic costs of "pure VoIP"



Assumptions

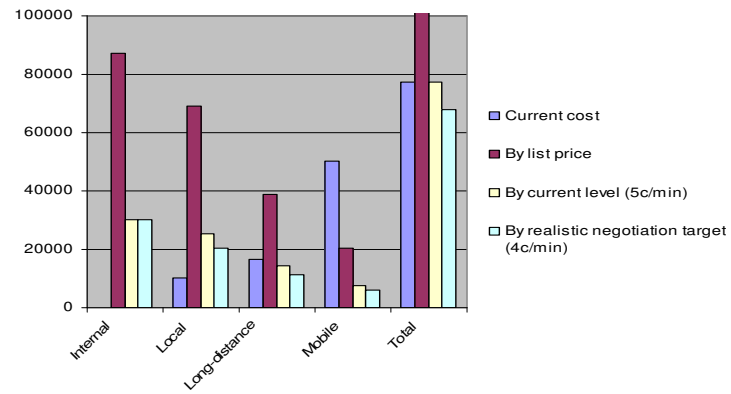
- 17% of calls to other universities (no long-distance charge)
- 40% of mobile calls internal (based on study)

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 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