OSS Market Overview
TeleManagement World
October 2004

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OSS Observer

About OSS Observer

- Founded August 2003
- OSS Market Research and Advisory Services
  - Focus on global telecom segment
  - Subscription & custom consulting services
  - Analysts located in Boston, Chicago, and UK
- Over 50 years combined industry experience

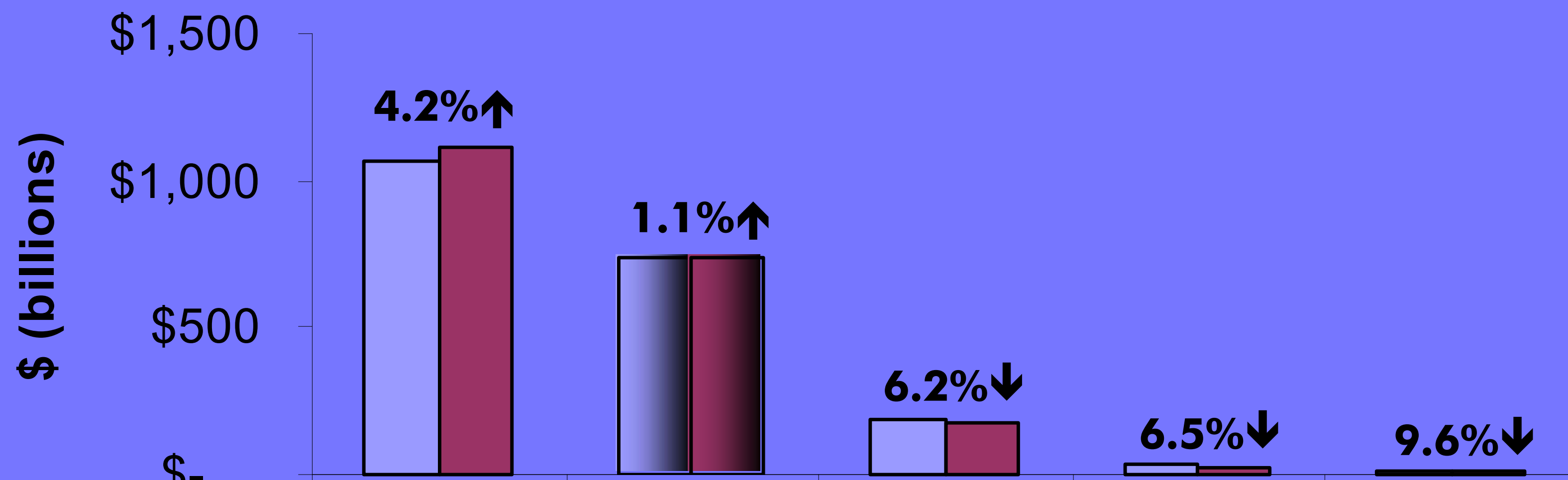
  GTE – HP – Marconi – C&W – Tellabs – Aprisma – Ceon – RHK
- Clients: Service Providers, ISVs, Equipment Suppliers, Investment Community
- Web site www.ossobserver.com

Contents

- OSS Market Highlights
- Current buying patterns
- Which CSPs are breaking through
- How does commercial OSS apply?
- What about NGOSS?

Telecom and OSS basic numbers

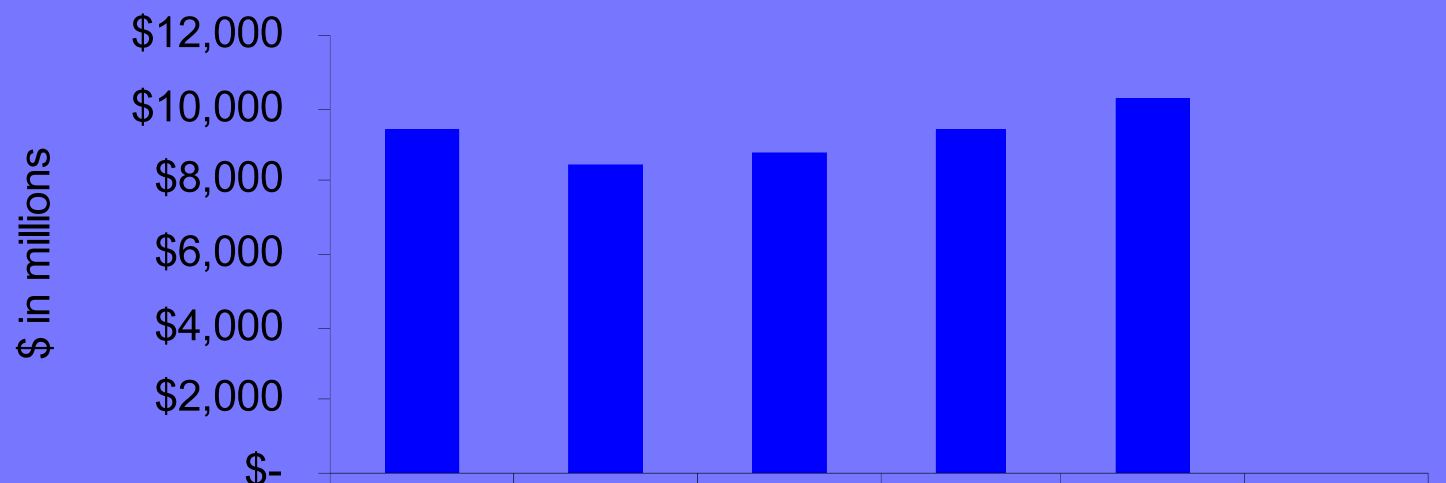
Top 100 Service Providers



	Revenue	OpEx	CapEx	All OSS	Comm
□ 2002	$1,070	$736	$182	$31	$9.4
■ 2003	$1,115	$744	$171	$29	$8.5

Source: OSS Observer □ 2002 ■ 2003

Commercial OSS spending



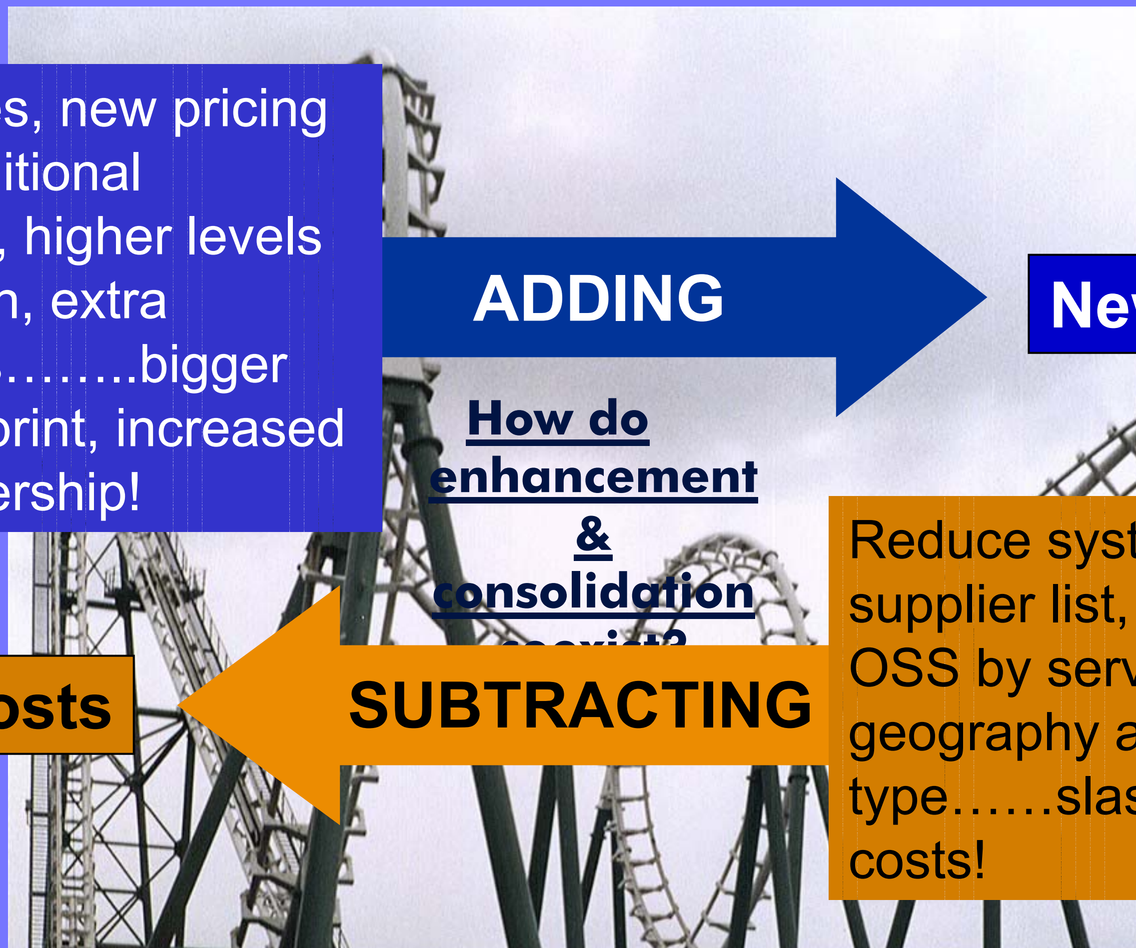
	2002	2003	2004	2005	2006	CAGR 03 -06
Global OSS Expenditure	$9,420	$8,513	$8,764	$9,400	$10,233	6%

Source: OSS Observer

OSS challenge

- New spend drivers
  - New services
  - Improving customer experience
  - Reducing operational cost - automation
  - Consolidation
- Flexible OSS architecture
  - Few service providers taking a top down approach
  - Enterprise wide solutions
  - Retire and consolidate systems – reduce TCO

Opposing forces fuel vicious circle



New services, new pricing models, additional functionality, higher levels of integration, extra components……..bigger license footprint, increased cost of ownership!

ADDING

New Revenue

How do enhancement & consolidation coexist?

Lower Costs

SUBTRACTING

Reduce system count, cut supplier list, consolidate OSS by service type, geography and customer type……slash ownership costs!

CSPs have lots of OSSs

No easy way to changing OSS

- CSPs are only likely to gain significant business advantage if they are prepared to introduce new and replace existing systems
- Migration – costly, time consuming and can be terminal!
- Employee buy-in is imperative
- Focus on the benefits and clearly communicate them, continuously.
- Suppliers and CSPs need to develop an alternative approach that supports the introduction and replacement of OSS in an evolutionary manner

A brief industry review

Period	Situation	Effect	Shareholder value
- 1970s	Utility state owned	Inefficient, job protection	Re-election
1980s & 90s	Liberalisation ▪ Competition ▪ Internet ▪ Mobile		
New millennium	Over supply Falling prices Failed business plans	Industry correction Bankruptcies, Massive cuts in s…	Salvage
2004 -	Subscriber and revenue growth slows New competition	A…	

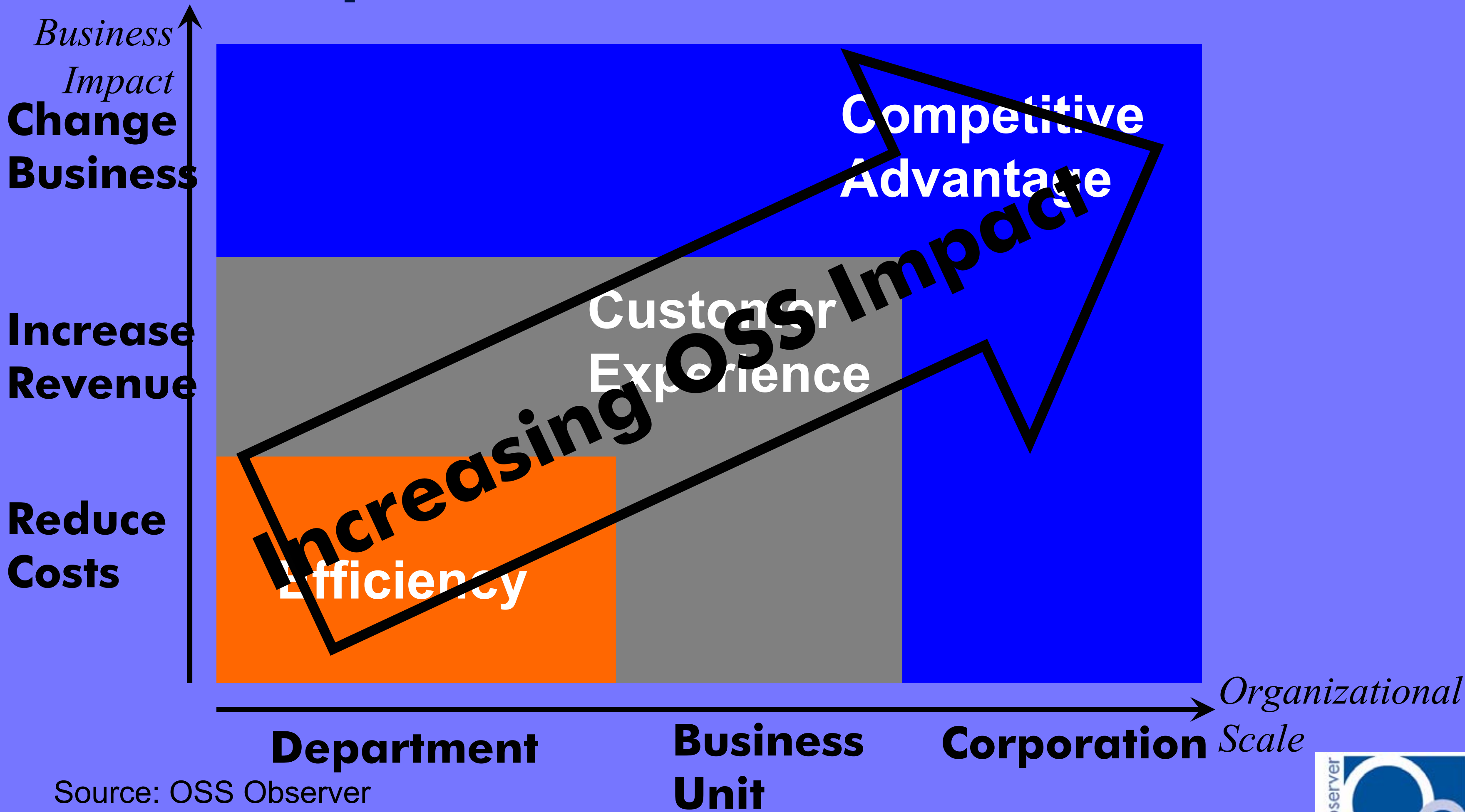
Unique situation
3 World changing events
Unlikely to be repeated

Homologous high speed access
IP every where
Service and access separation

A brief industry review

Period	Situation	Effect	Shareholder value
- 1970s	Utility state owned	Inefficient, job protection	Re-election
1980s & 90s	Liberalisation ▪ Competition ▪ Internet ▪ Mobile	Job creation Massive capital expenditure	Company valuation Share price
New millennium	Over supply Falling prices Failed business plans	Industry correction Bankruptcies, Massive cuts in spending, job losses	Salvage
2004 -	Subscriber and revenue growth slows New competition	Consolidation Reduce costs Automation	Dividends

Most OSS does not impact business units or the corporation as a whole



Source: OSS Observer

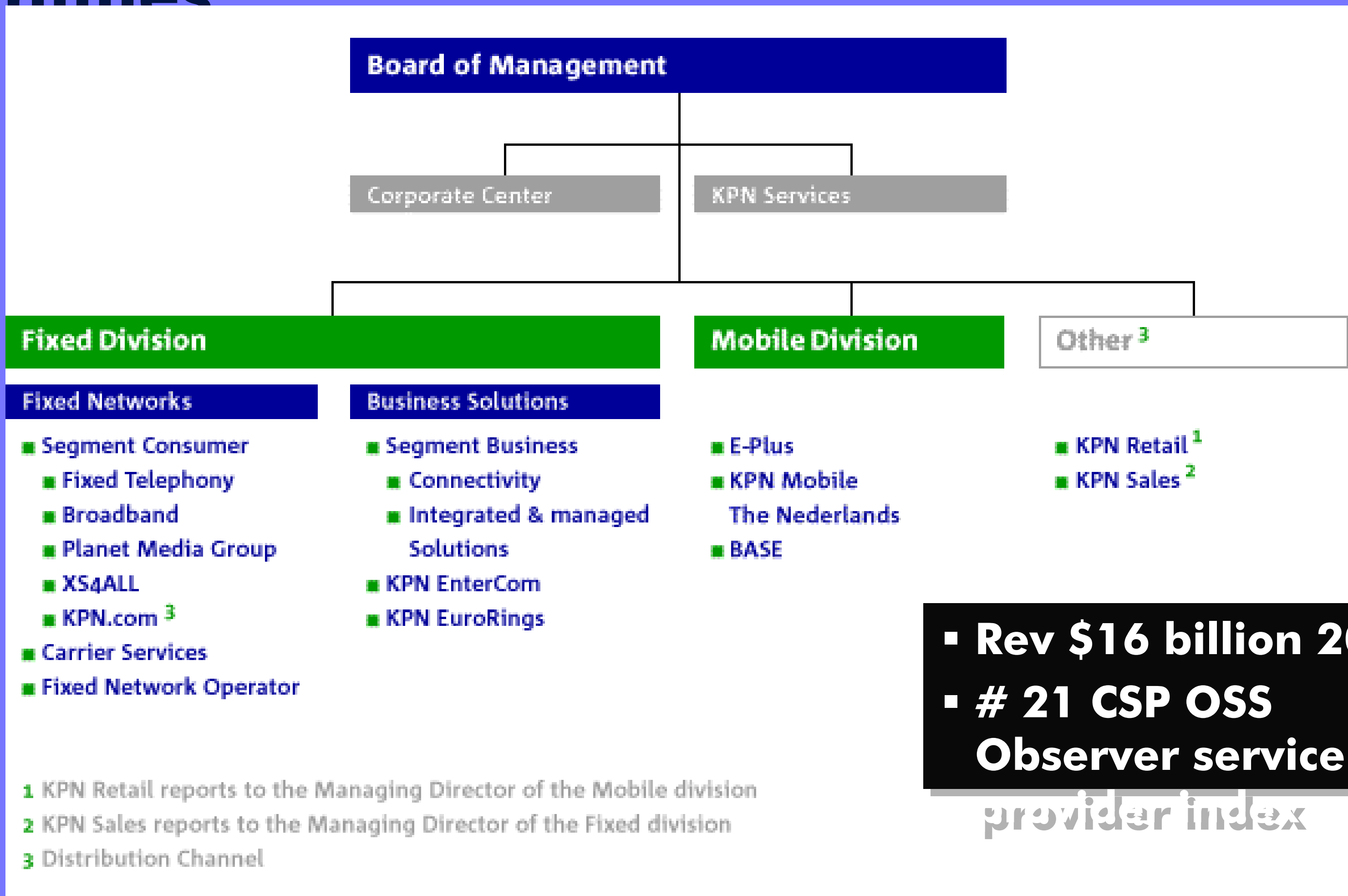
100 CSP's with over $1B annual revenue

250 major business units

1000 operating entities

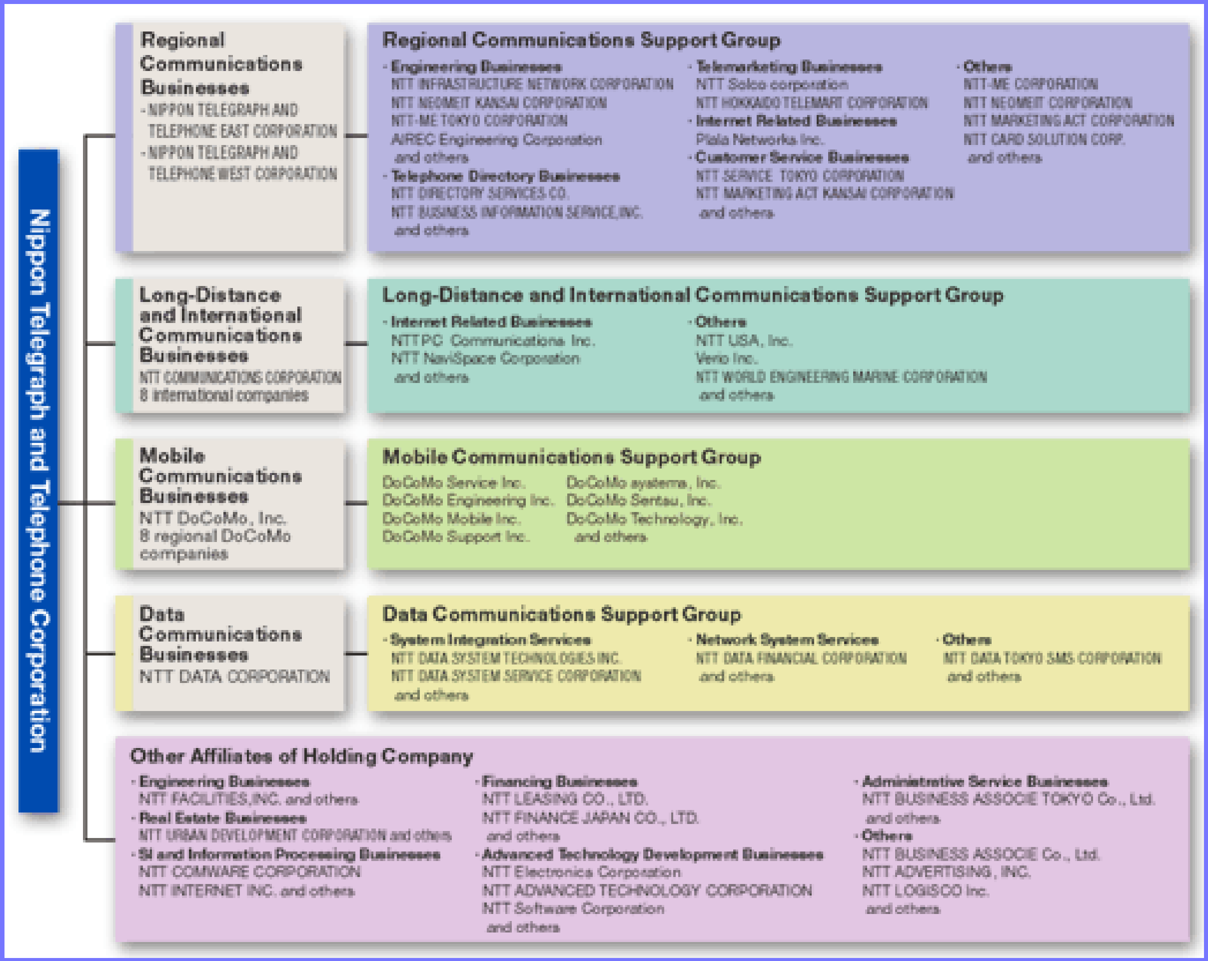
10,000 OSS-buying departments

KPN
2 Major Business Units, ~14 Operating Entities



- Rev $16 billion 2003
- # 21 CSP OSS Observer service provider index

NTT Corporate Organization



Tier 1's more geographically dispersed

NTT's Global Presence

Of the Top 30 Global Service Providers Only six have corporate-wide OSS strategy

- NTT
- Deutsche Telekom
- Verizon
- Vodafone
- France Telecom
- SBC
- **Telecom Italia**
- Telefonica
- **BT**
- **AT&T**
- KDDI
- **Sprint**
- MCI Worldcom
- BellSouth
- Comcast
- China Mobile
- China Telecom
- AT&T Wireless
- TimeWarner (AOL)
- Telstra
- KPN
- QWest
- **Bell Canada**
- Korea Telecom
- Swisscom
- TeliaSonera
- **Nextel**
- Telmex
- mmO2
- China Netcom

Evidence of two more Tier1's with Corporate-wide OSS strategy

- NTT
- Deutsche Telekom
- Verizon
- Vodafone
- France Telecom
- SBC
- Telecom Italia
- Telefonica
- BT
- AT&T
- KDDI
- Sprint
- MCI Worldcom
- BellSouth
- Comcast

- China Mobile
- China Telecom
- AT&T Wireless
- TimeWarner (AOL)
- Telstra
- KPN
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Only one has made corporate-wide OSS strategy work

- NTT
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- Verizon
- Vodafone
- France Telecom
- SBC
- Telecom Italia
- Telefonica
- BT
- AT&T
- KDDI
- Sprint
- MCI Worldcom
- BellSouth
- Comcast
- China Mobile
- China Telecom
- AT&T Wireless
- TimeWarner (AOL)
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- KPN
- QWest
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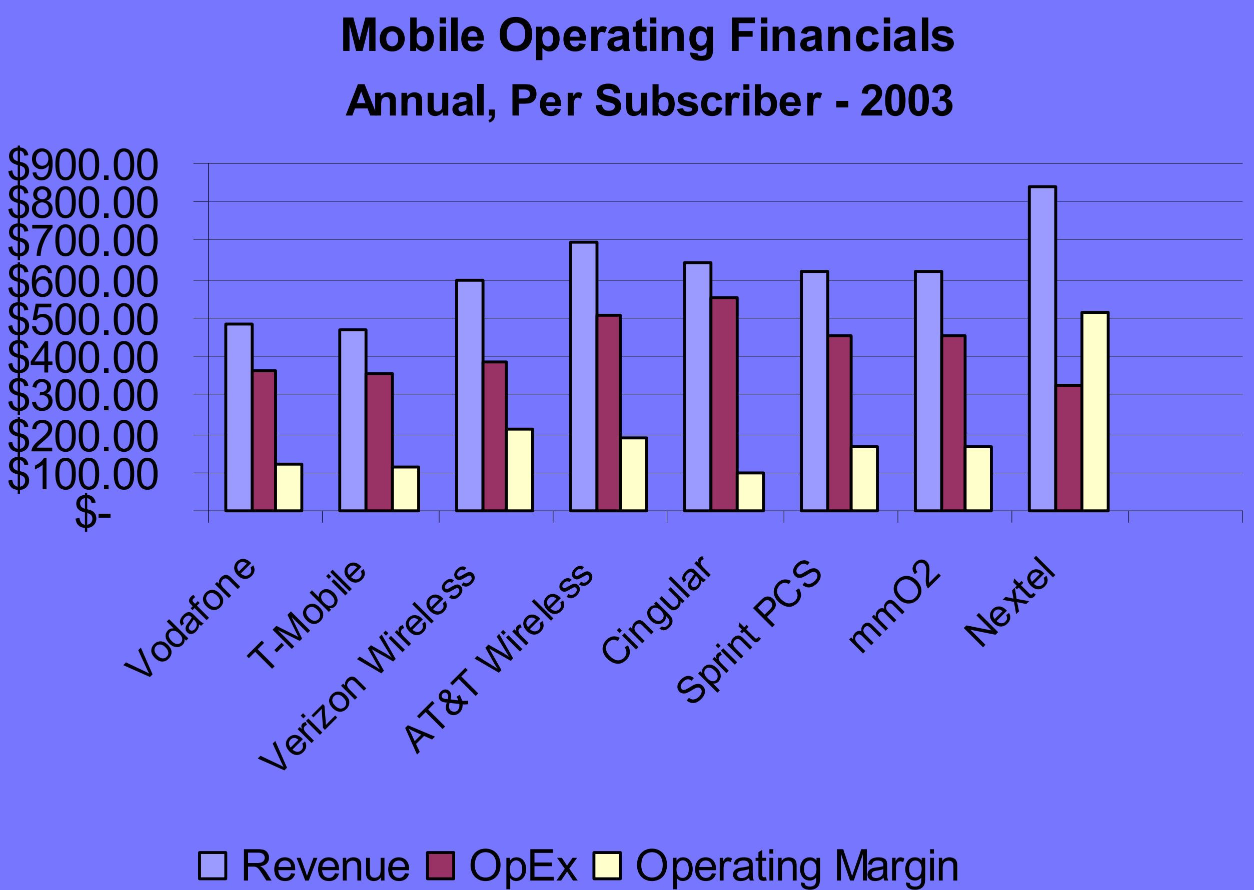
Nextel is more efficient than other mobile CSPs



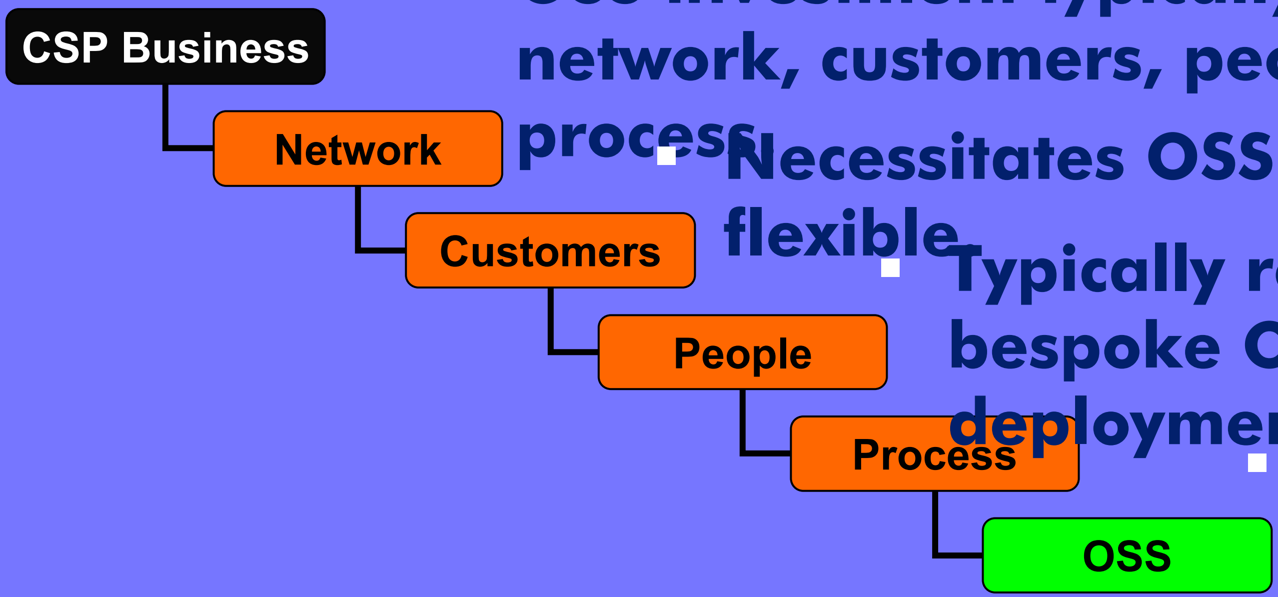
Nextel corporate-wide initiatives

- Billing and Customer Care
  - Amdocs system
  - Consolidated 14 billing systems across Nextel and Nextel Partners
- Network Resource Management
  - MetaSolv system
  - Eliminated hundreds of spreadsheets and adhoc systems across Nextel
- Performance Management
  - ADC Metrica system
  - Common system deployed across all of Nextel and Nextel International

Current state of the art in telecom

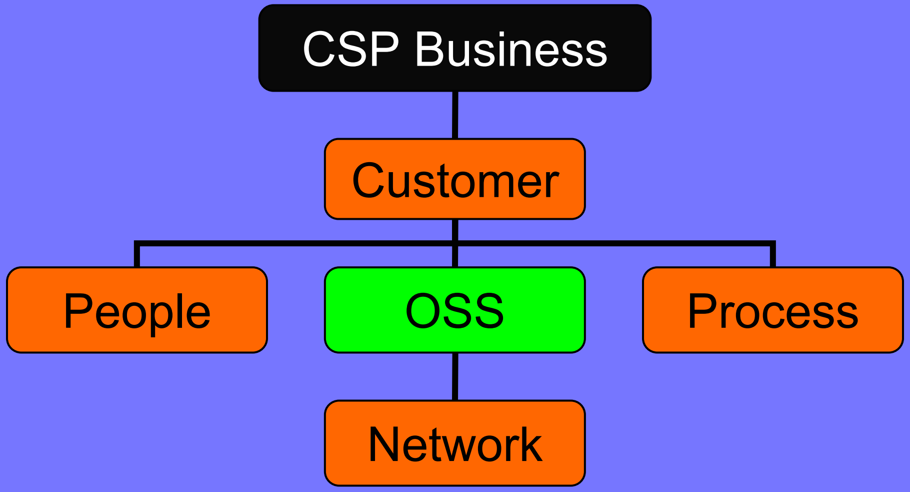
- No one can get operating efficiencies, economies of scale, across a business larger than $10 billion annual revenue
- Nextel (the 27th largest) is the largest CSP that has implemented major automation systems across the entire business
- All the larger CSPs and many smaller CSPs are simply holding companies of similar businesses with few operating synergies

OSS at the wrong level in the business decision process



- OSS investment typically lags network, customers, people and process
  - Necessitates OSS to be very flexible
    - Typically results in bespoke OSS deployments
      - Impact of OSS reduced

Shifting the mind set



- Optimizing OSS, People and Process leads to efficiency and flexibility.
- Billing, CRM, OSS are the same thing…. Software systems that provide operations automation
- Legacy OSS are strategic assets

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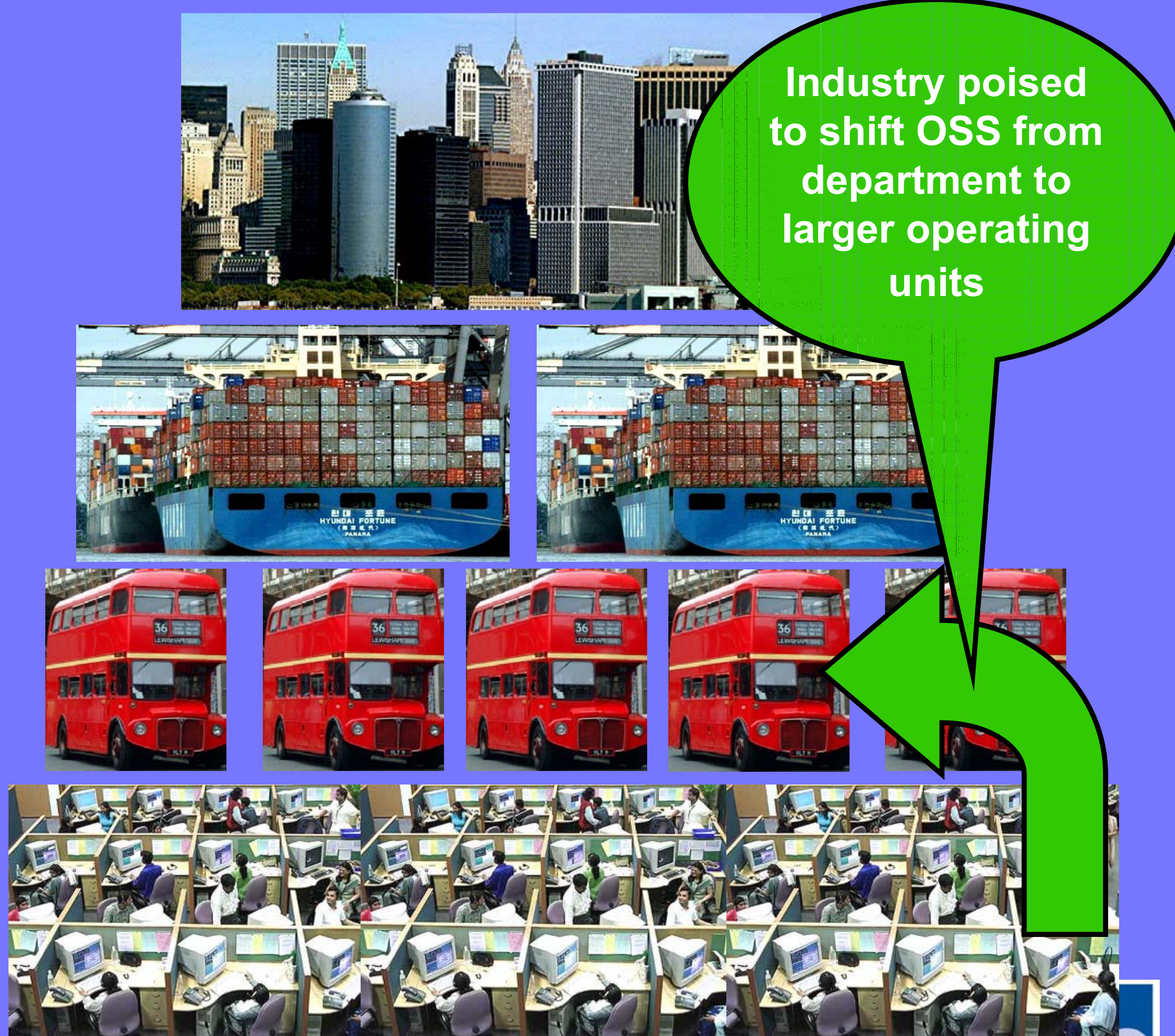
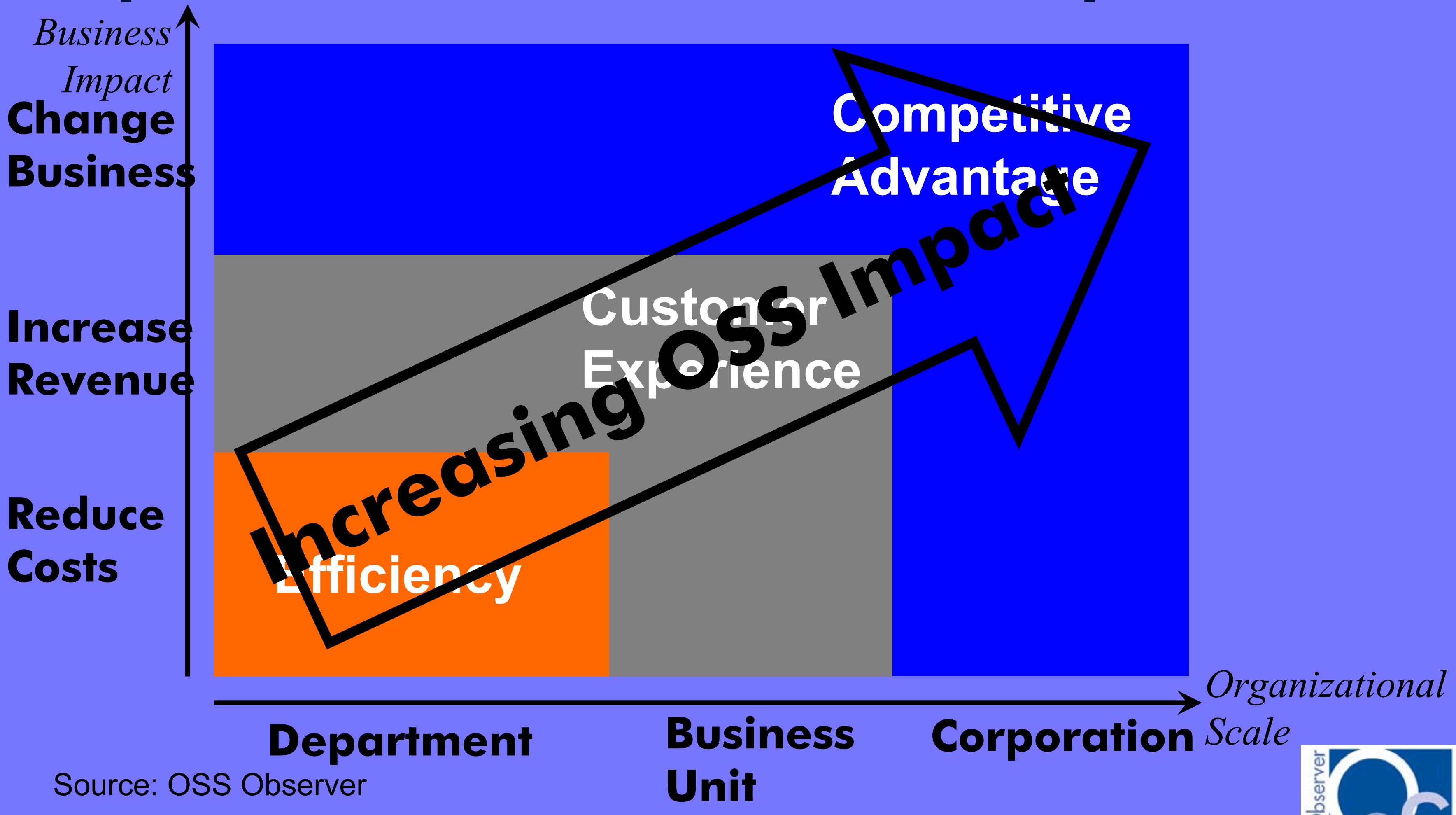


Pushing OSS decision-making out of departments will increase OSS impact



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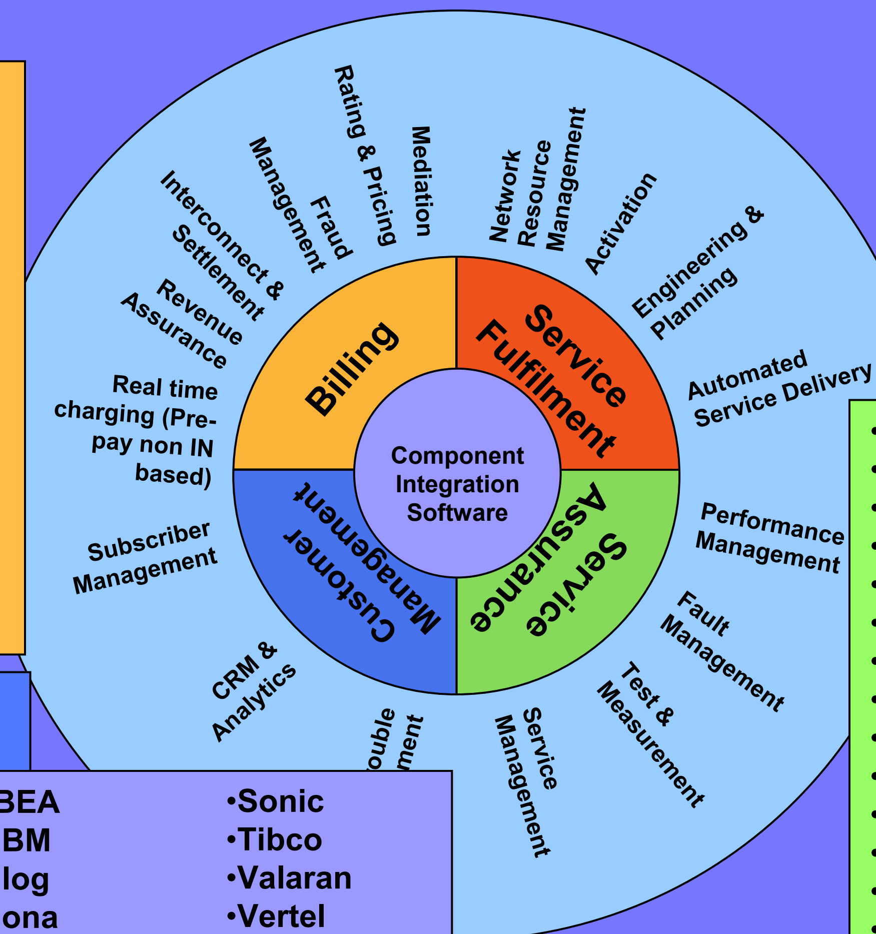
Depend on major commercial suppliers?

- Because of departmental buying, …
- Only one supplier has over $1 billion annual software revenue
- Only two other OSS-focused suppliers with more than $250 million annual software revenue
- We are aware of over 400 commercial OSS suppliers worldwide (not counting hundreds of small integrators)
- Typical vendor has under $10m annual revenue
- Average deal size is under $1m

Many vendors supplying multiple segments

- Ace*com
- ADC
- Agilent
- Alcatel
- Amdocs
- Azure
- Basset
- Cerebrus
- Comptel
- Convergys
- Connexn
- CSG
- DST
- ECtel
- EDB Tel
- HP
- Inet
- Intec
- Lucent
- Narus
- Openet
- Portal
- LHS
- Sotas
- Subex
- Tertio
- TTI
- Vibrant Networks

- Amdocs
- BMC
- Chordiant
- Convergys
- CSG
- E.piphany
- Kana
- PeopleSoft
- Pivotal
- Oracle
- SAP
- Siebel
- TTI



- BEA
- IBM
- Ilog
- Iona
- Seebeyond
- Sonic
- Tibco
- Valaran
- Vertel
- Vitria

- Aircom
- Amdocs Alcatel
- Axiom
- Cramer
- Cisco
- CoManage
- Comptel
- Cheetah
- DSET
- Eftia
- Jacobs Rimell
- Lucent
- MDSI
- Metasolv
- Micromuse
- NetCracker
- Sheer Networks
- Siebel
- Staffware

- Agilent
- Acterna
- ADC
- Alcatel
- Aprisma
- BMC
- Cisco
- Clear
- Ericsson
- Harris
- HP
- Infovista
- Lucent
- Megasys
- Micromuse
- Nettest
- Nokia
- Nortel
- Quallaby
- Siemens
- SMARTS
- Spirent
- Telcordia
- Tolgrade
- Trendium
- TTI
- Visual Networks
- WatchMark Comnitel

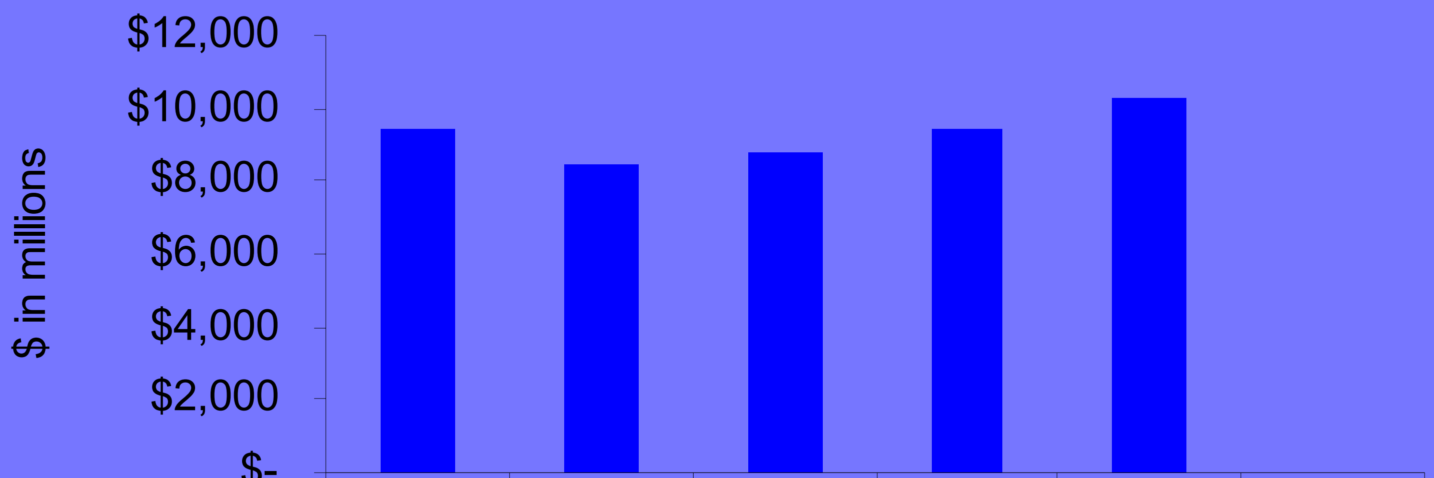
Source: OSS Observer

What about consolidation?

- As long as CSPs make OSS build/buy decisions in individual departments the OSS business will be a cottage industry with hundreds of suppliers with sub-$10m annual revenue – staying alive but unlike to grow dramatically

  .....those that fail feed consolidation
- CSPs buying OSS to support multi-billion business units will enable and force supplier consolidation

Commercial OSS spending



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- KDDI
- Sprint
- MCI Worldcom
- BellSouth
- Comcast
- China Mobile
- China Telecom
- AT&T Wireless
- TimeWarner (AOL)
- **Telstra**
- **KPN**
- QWest
- **Bell Canada**
- Korea Telecom
- Swisscom
- **TeliaSonera**
- **Nextel**
- Telmex
- mmO2
- China Netcom

What impedes commercial OSS?

- Past experience with failed projects – oversold and under delivered
- Large, established IT groups in CSPs – roughly 200,000 IT professionals worldwide
- Expectations that ultimately OSS will give a competitive advantage – MCI Friends and Family
- Fragmented industry with few large vendors

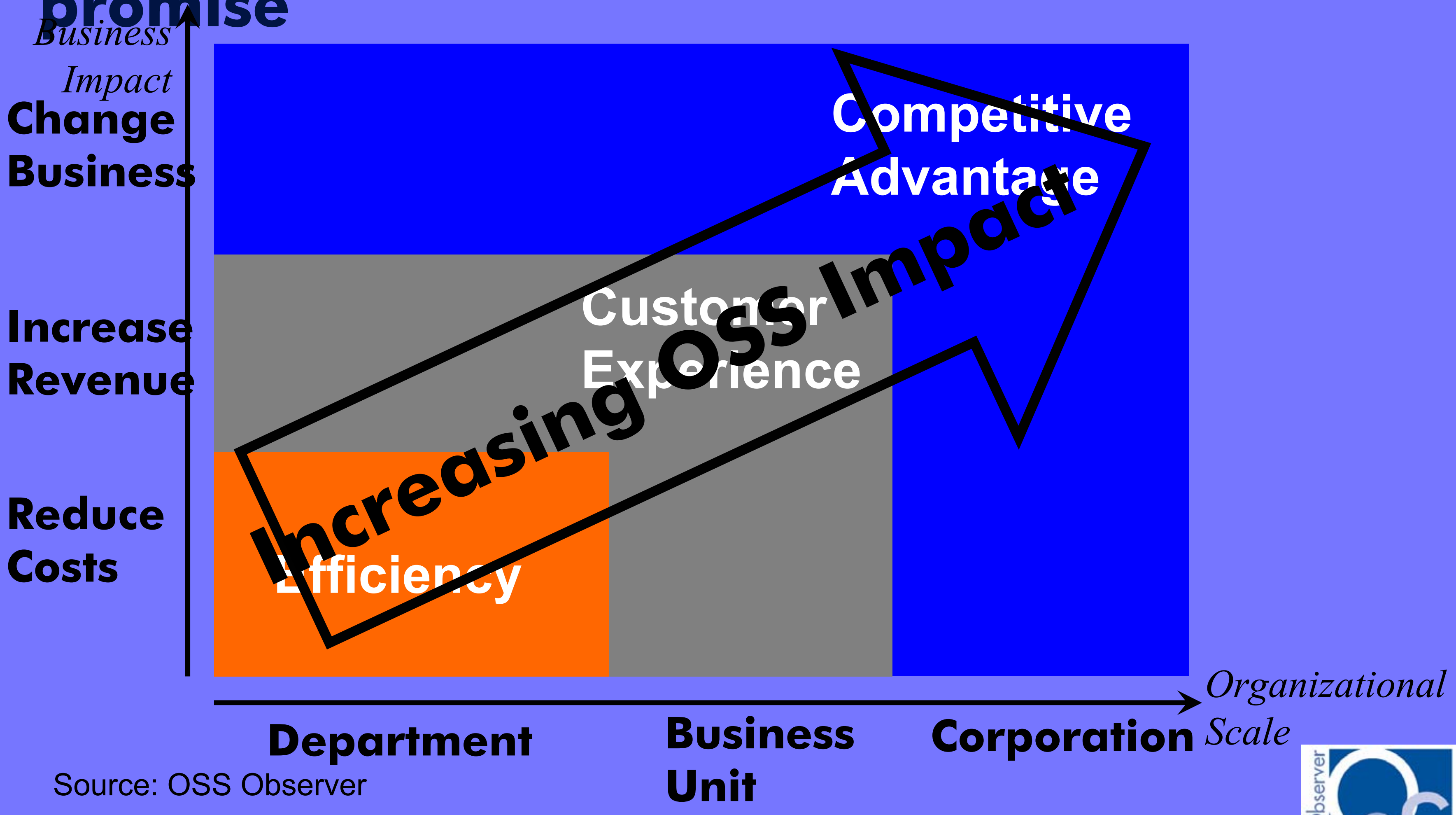
What about NGOSS?

- NGOSS principles are widely but not universally adopted
- CSPs looking for vendors to implement
- Vendors looking for CSPs to require in architectures and RFPs
- Practical, related moves in OSS/J have interest from CSPs

OSS Observer evaluation of NGOSS

- Of the Top 100 CSPs in the world
  - Less than 10 have serious projects based on NGOSS specifications
  - Some have specified NGOSS is RFPs but we don’t think these are absolute requirements
  - About 50 are evaluating NGOSS to some degree
  - Most that are seriously considering have staff assigned to evaluate but that is as far as the commitment

Pushing OSS decision-making out of departments increases NGOSS value & promise



Source: OSS Observer

What does this mean?

- The pace of change is slow
- CSPs that view OSS strategically – make OSS decisions at business unit or corporate level – will get the most benefit from NGOSS
- Don't expect NGOSS to apply where CSPs leave OSS decisions to departments
- CSPs inclined to take advantage of commercial OSS are also the most likely to actually apply NGOSS

Thank You

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