Running SAP-based Service Provider BSS Stack on Cisco Datacenter Environment

Dubrovnik, Croatia, South East Europe
20-22 May, 2013

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Agenda

About Verso and Altima

SAP Offer-to-Cash Solution Implementation

eTOM BSS Stack for Service Providers

Dimensioning

Performance tests on Cisco UCS

SAP HANA

Cisco SAP Alliance

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We're doing the right things right!

business vision

business goals

core competencies

architecture

compliance

infrastructure

complexity

technology

CUSTOMER

is focused on its business vision, business goals and core competencies.

Altima and Verso
are focused on design, development, implementation, maintenance and management of advanced ICT solutions that support customer's business model.

We continuously grow our sales, capabilities and geographical footprint
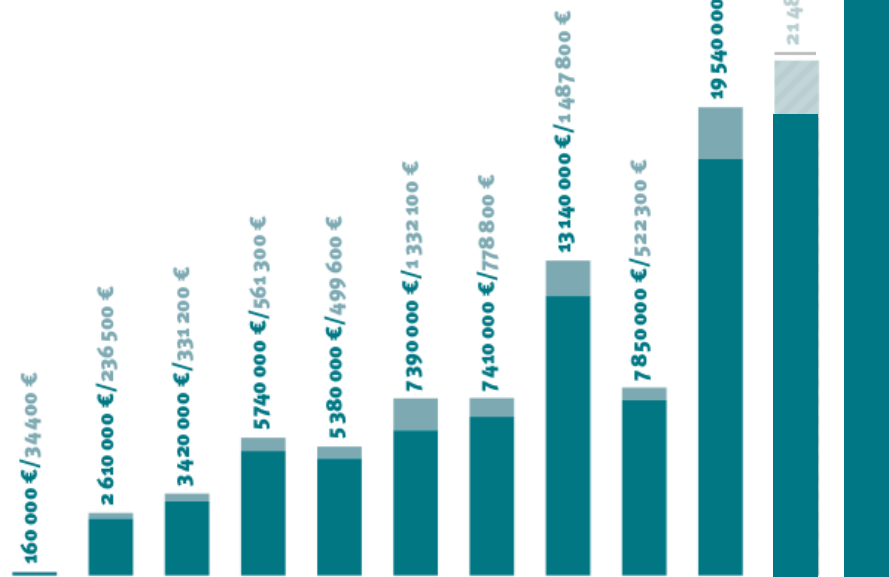
HQ **in Croatia, 7 Country Offices**

100+ Employees

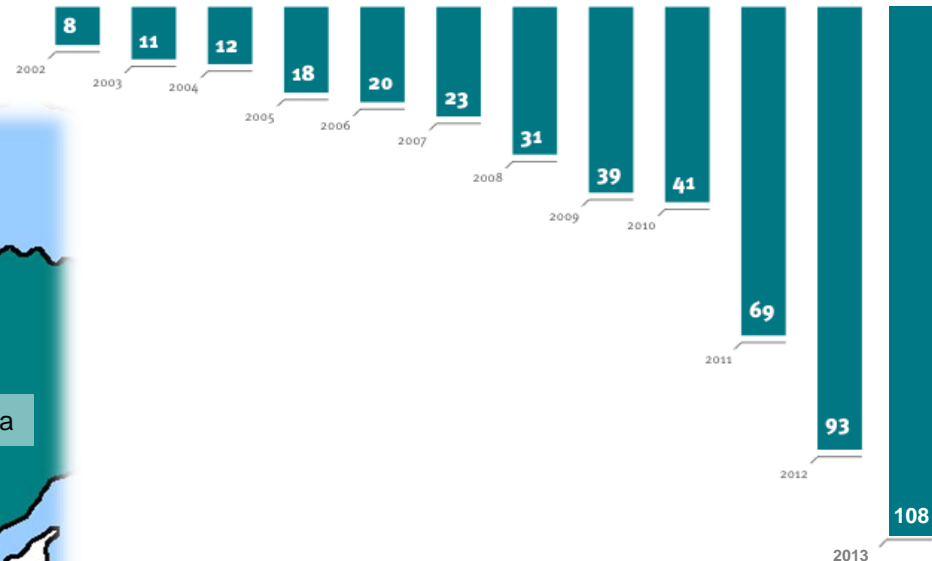**120 Customers in 31 Countries**

est. 40 mio. EUR Revenue in 2013

REVENUE AND EBITDA
YEARLY GROWTH

Year	Revenue / EBITDA
2002	160 000 € / 34 400 €
2003	2 610 000 € / 236 500 €
2004	3 420 000 € / 331 200 €
2005	5 740 000 € / 561 300 €
2006	5 380 000 € / 499 600 €
2007	7 390 000 € / 1 332 100 €
2008	7 410 000 € / 778 800 €
2009	13 140 000 € / 1 487 800 €
2010	7 850 000 € / 522 300 €
2011	19 540 000 € / 1 951 900 €
2012	21 489 ??? €

NUMBER OF EMPLOYEES
YEARLY GROWTH

Year	Employees
2002	8
2003	11
2004	12
2005	18
2006	20
2007	23
2008	31
2009	39
2010	41
2011	69
2012	93
2013	108

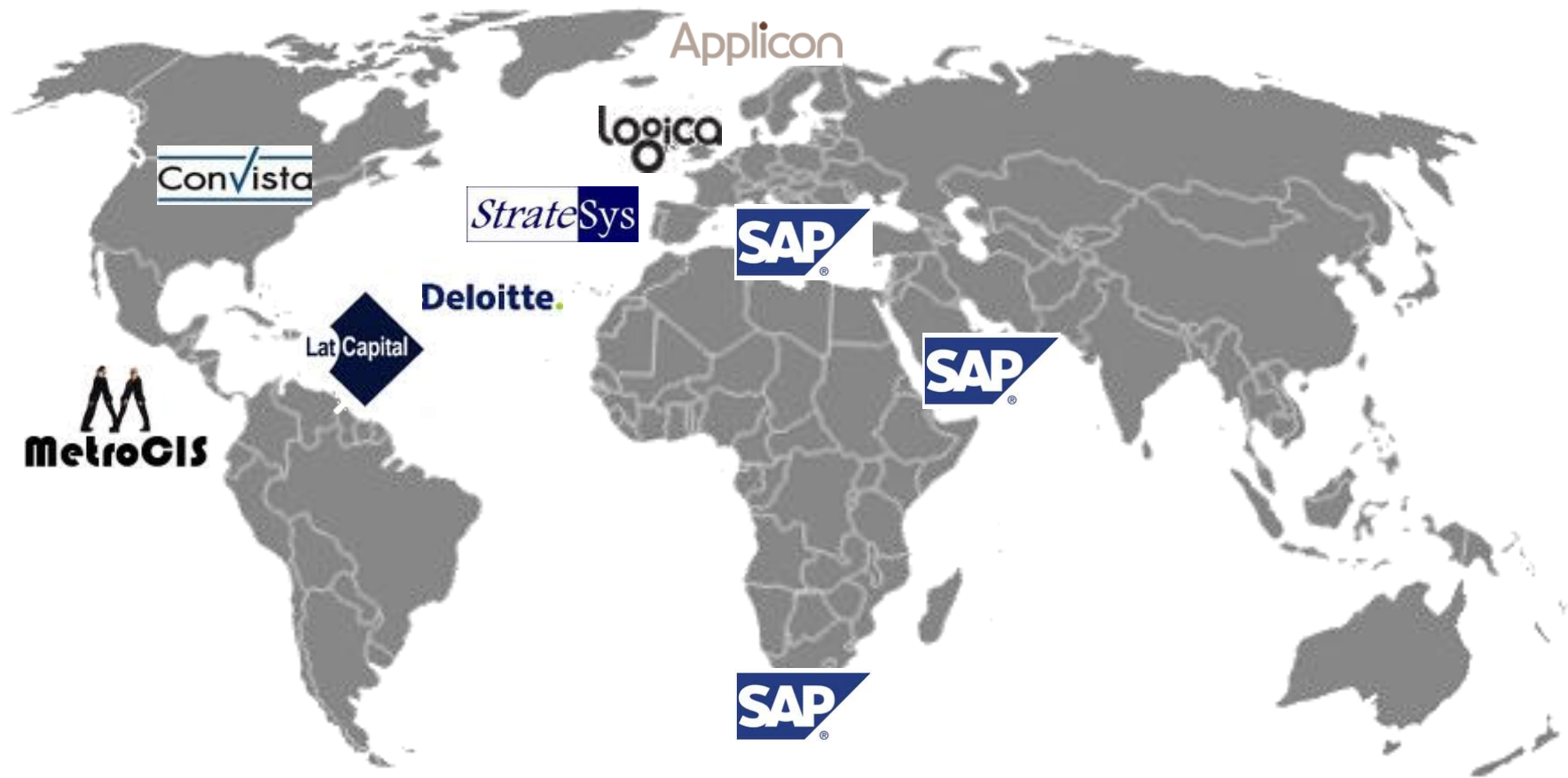Map locations: Ljubljana, Zagreb, Beograd, Sarajevo, Prishtinë, Tiranë, İstanbul, Ankara

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Global Subcontractor Engagements for SAP Billing, Revenue and Innovation Management

Regional references of Altima/Verso deployments of SAP

1. ALBtelecom / Eagle Mobile (AL)

Altima implemented SAP BRIM 3.0 and CRM 7.0; ongoing project, some modules already in production, data migration ongoing.

2. IPKO Telecommunications (KS)

Altima implemented SAP CC 1.0 and our own CRM, mediation, provisioning, fraud, dunning...
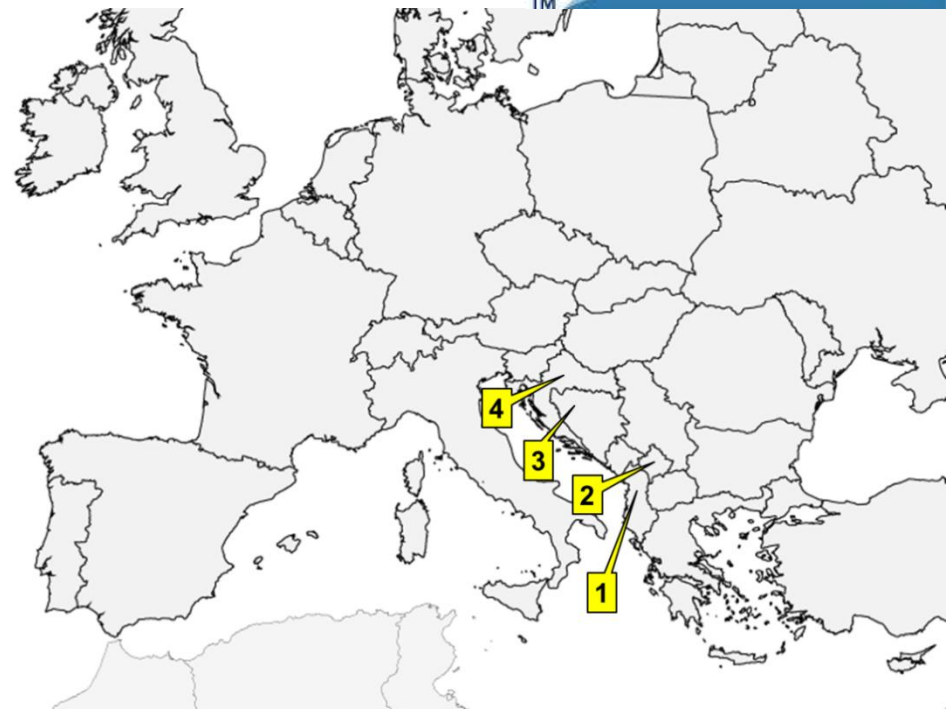
3. Aneks / Blic.net (BiH)

Implemented Highdeal, CRM, mediation, provisioning...

4. H1 Telecom (HR)

Implemented Highdeal billing for postpaid customers of triple-play operator.

5. Telekom Slovenije (SLO)
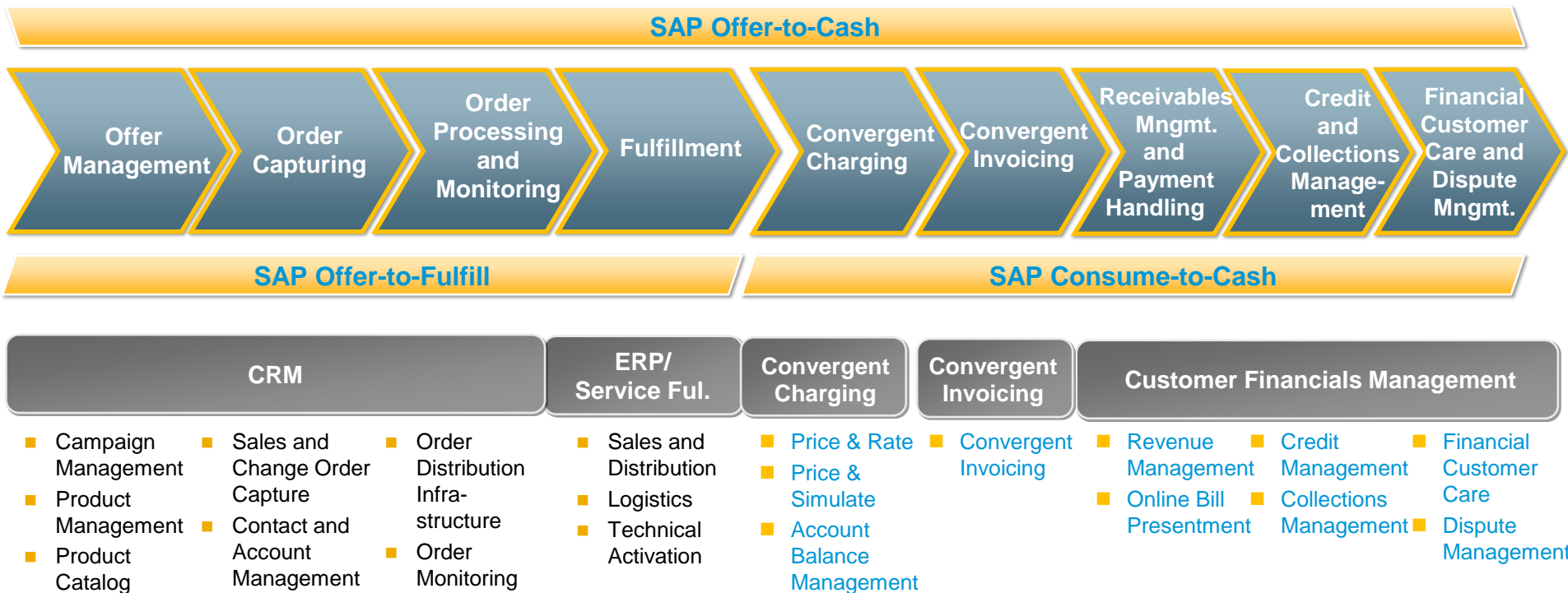
Convergent charging & billing. Project in progress.

Implementing Solution Based on SAP Offer-to-Cash

Unique experience from global projects

Added value in ready-made product catalogue components

**Mitigated risk and increased speed of implementation, integration and migration**

SAP Offer-to-Cash

| Offer Management | Order Capturing | Order Processing and Monitoring | Fulfillment | Convergent Charging | Convergent Invoicing | Receivables Mngmt. and Payment Handling | Credit and Collections Manage-ment | Financial Customer Care and Dispute Mngmt. |

SAP Offer-to-Fulfill

SAP Consume-to-Cash

CRM			ERP/ Service Ful.	Convergent Charging	Convergent Invoicing	Customer Financials Management		
■ Campaign Management ■ Product Management ■ Product Catalog	■ Sales and Change Order Capture ■ Contact and Account Management	■ Order Distribution Infra-structure ■ Order Monitoring	■ Sales and Distribution ■ Logistics ■ Technical Activation	■ Price & Rate ■ Price & Simulate ■ Account Balance Management	■ Convergent Invoicing	■ Revenue Management ■ Online Bill Presentment	■ Credit Management ■ Collections Management	■ Financial Customer Care ■ Dispute Management

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Marketing & Campaign Management

Enabling a holistic, disciplined approach to Marketing Planning

Campaign Planning

Customer Segmentation

Campaign Execution

Multichannel integration

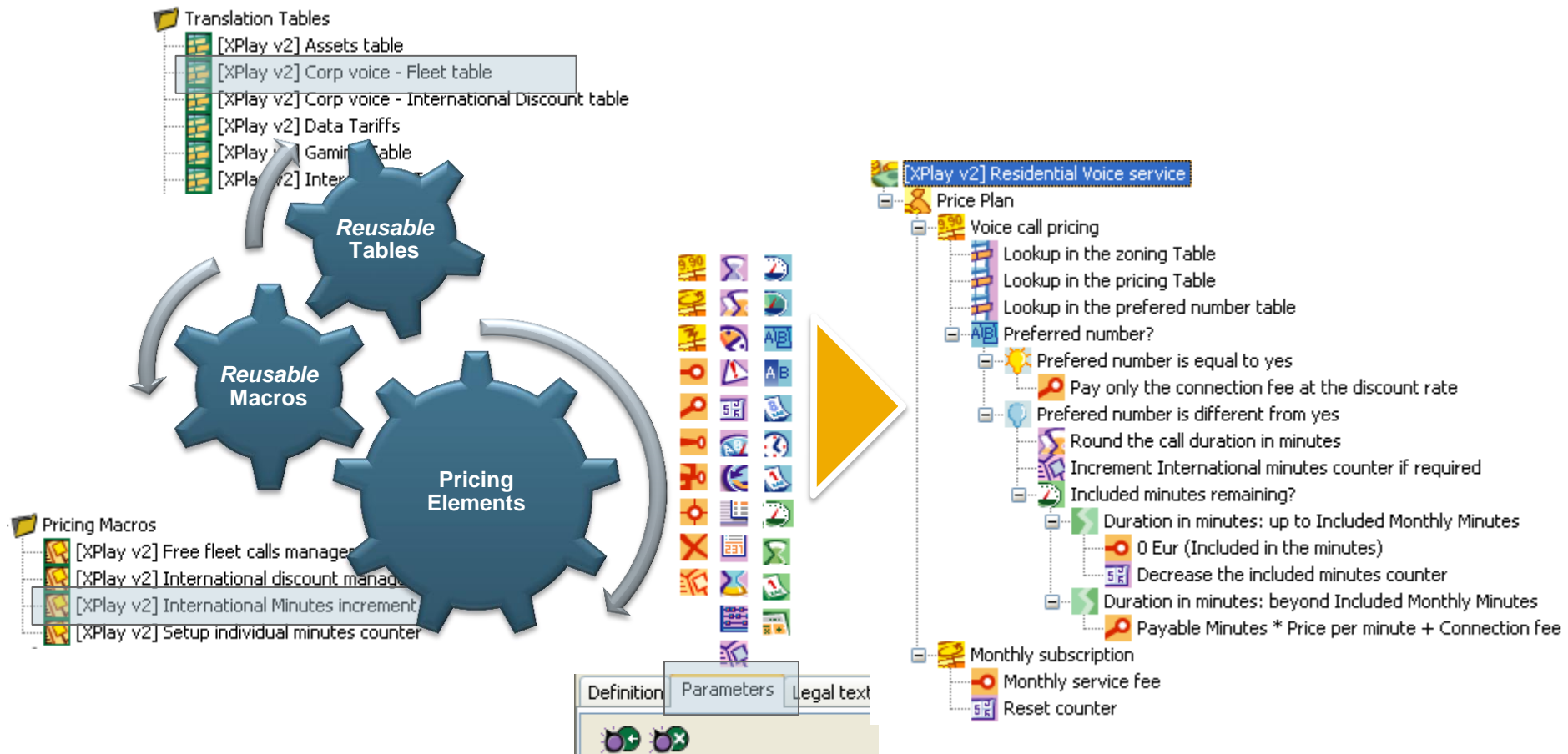- Cross Sell

- Up sell

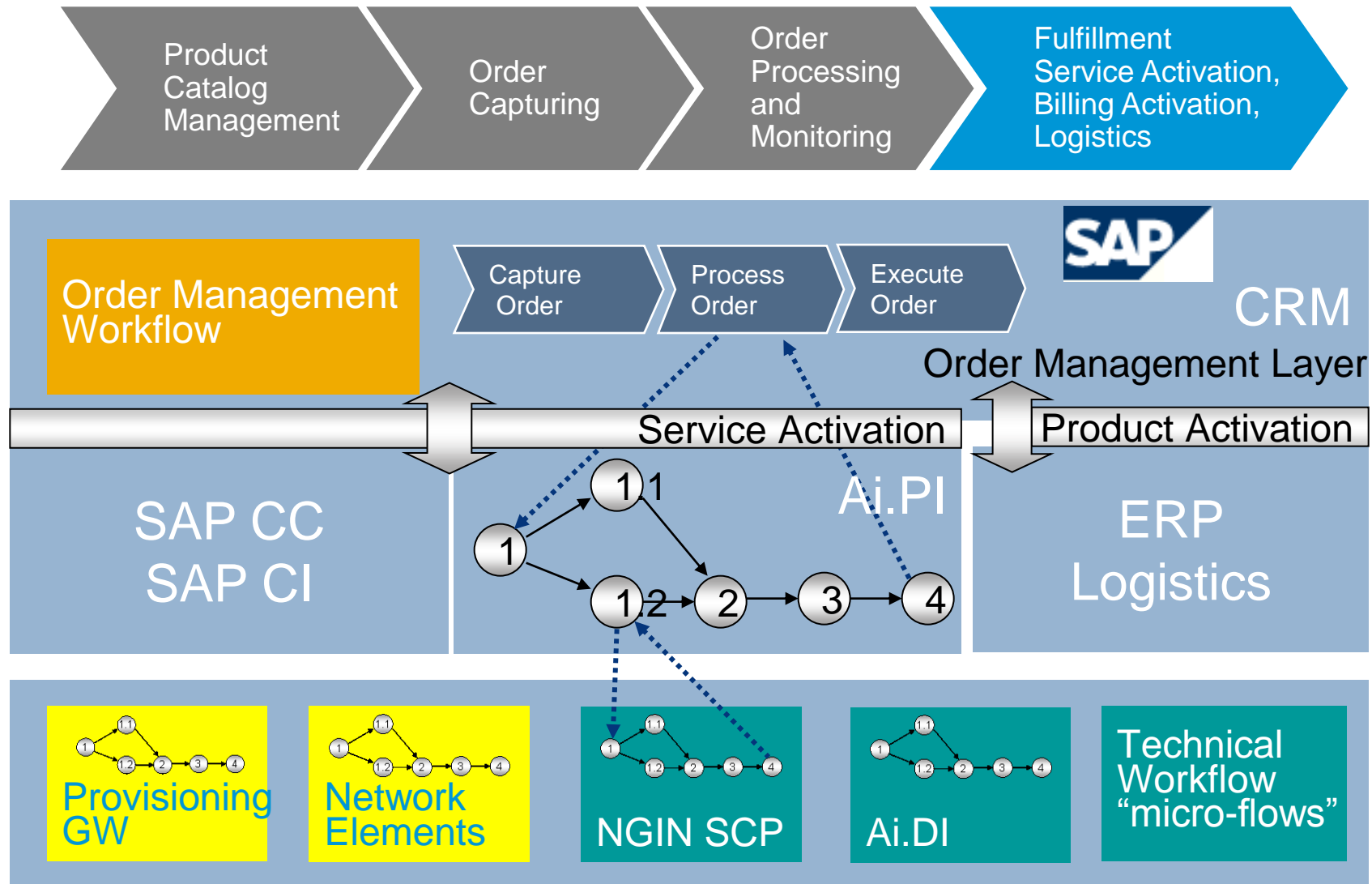- Down Sell
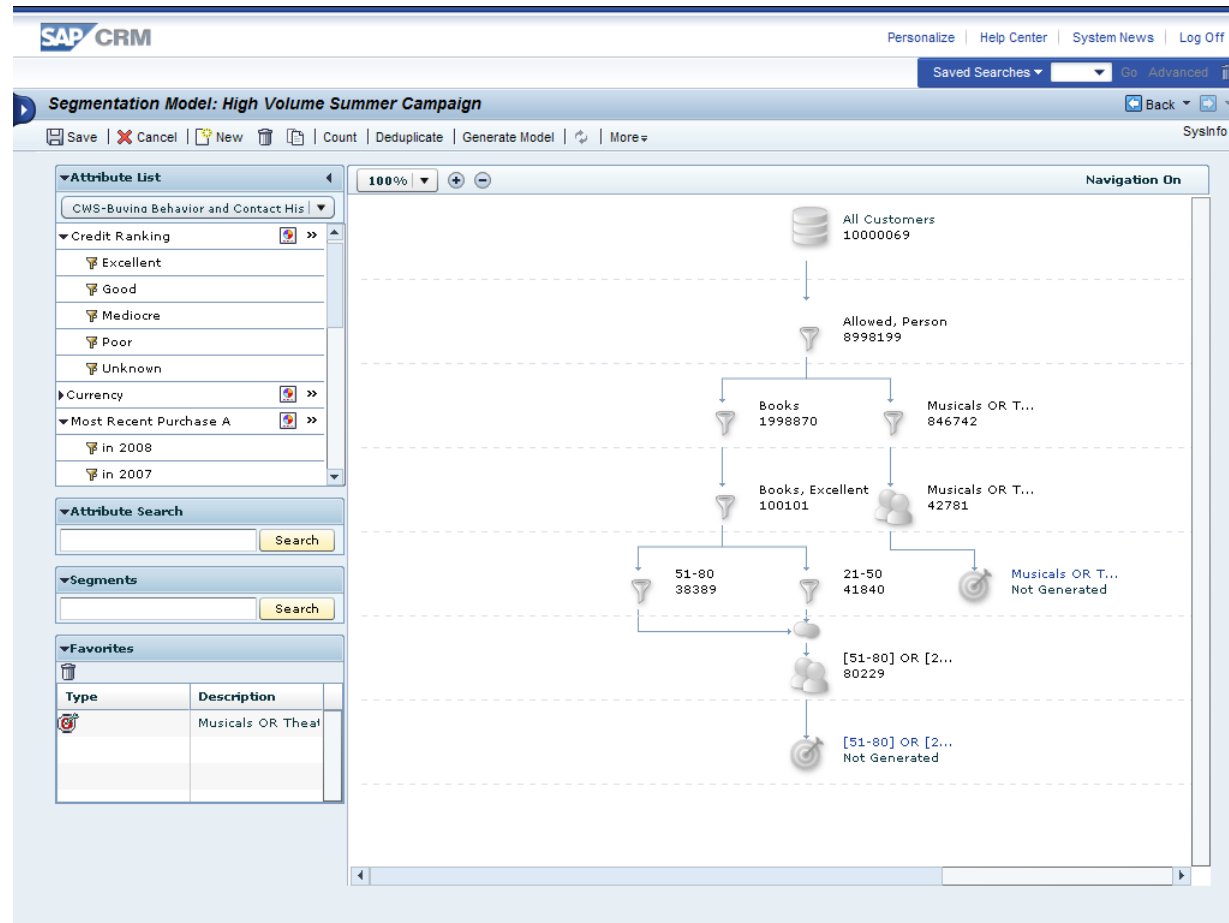
SAP CC Service Provider Product Catalogue

Framework for complex telco service catalogues

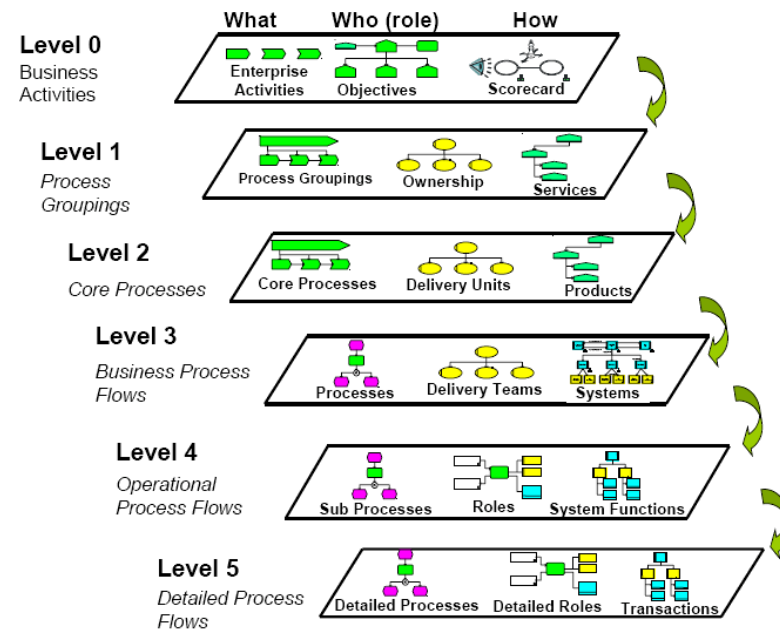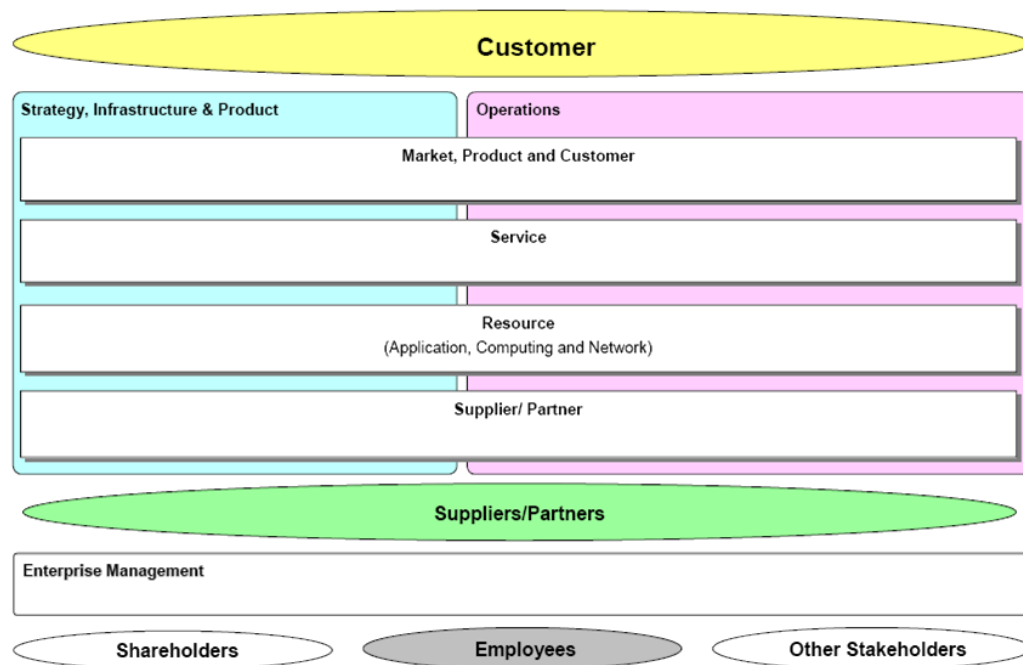Incorporate all experience in catalogue development

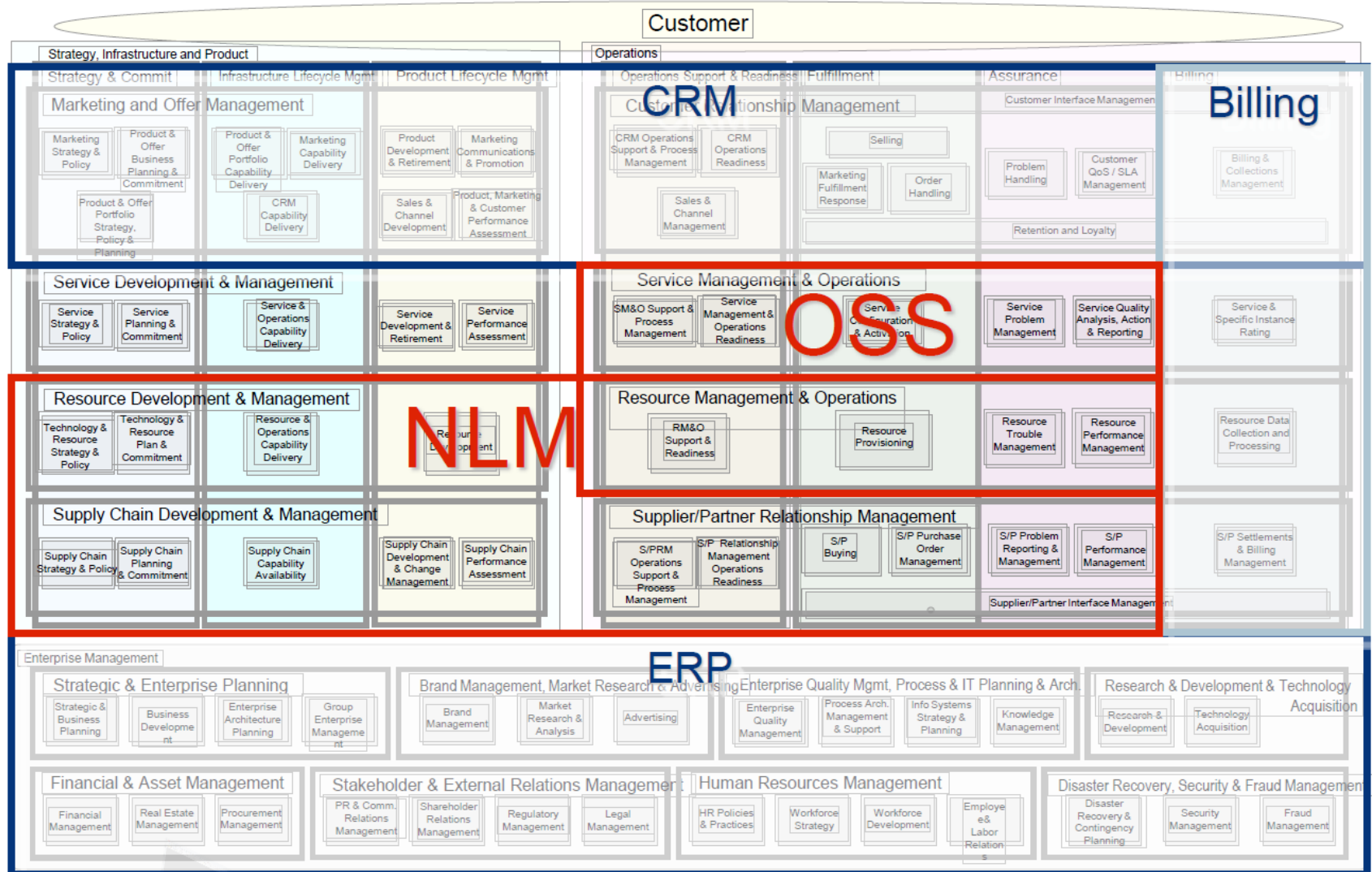Enables faster deployment and implementation of complete catalogue

Service Activation – Fullfillment Integration

Product Catalog Management → Order Capturing → Order Processing and Monitoring → Fulfillment Service Activation, Billing Activation, Logistics

Order Management Workflow

Capture Order → Process Order → Execute Order

SAP

CRM

Order Management Layer

Service Activation   Product Activation

SAP CC
SAP CI

Ai.PI

ERP
Logistics

Provisioning GW

Network Elements

NGIN SCP

Ai.DI

Technical Workflow "micro-flows"

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Service Provider's BSS Stack
Alignment to eTOM Framework

SAP positioning on eTOM

Measuring Applications in SAPS

SAPS (SAP Application Performance Standard)

SAP Application Performance Standard (SAPS) is a hardware-independent unit of measurement that describes the performance of a system configuration in the SAP environment. It is derived from the Sales and Distribution (SD) benchmark, where 100 SAPS is defined as 2,000 fully business processed order line items per hour.

In technical terms, this throughput is achieved by processing 6,000 dialog steps (screen changes), 2,000 postings per hour in the SD Benchmark, or 2,400 SAP transactions.

In the SD benchmark, fully business processed means the full business process of an order line item: creating the order, creating a delivery note for the order, displaying the order, changing the delivery, posting a goods issue, listing orders, and creating an invoice.

S **AP**
A **pplication**
P **erformance**
S **tandard**

- Hardware-independent unit of measurement **SAPS** is derived from Sales & Distribution (SD) Standard Application Benchmark
- Machine capacity is 100 SAPS when with the definition of the SD Standard Application Benchmark it can fully business process 2000 order line items per hour.
- Today servers with 4 processors, 40 cores and 80 threads deliver an average SAPS value of around 75.000 SAPS.

SD Benchmark
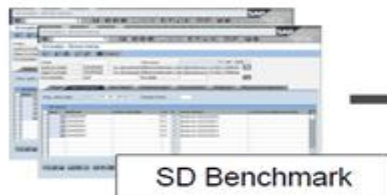
2,000 fully processed order line items/hour**

100 SAPS

** ≙ 6,000 dialog steps *or* 2,400 SAP transactions

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Input Assumptions – CRM Sales example

Table 1: Active Users - Standard Sizing

Clear | Insert

	Element	A/P	TI	Low activity users	Medium activity users	High activity users	Short text
	ACT-USER	A	S				
	OPP-USER	A	S				
	SLS-USER	A	S	8	10	8	

Table 2: Throughput - Standard Sizing

Delete/Clear | Insert | 1 | line(s)

	Element	A/P	TI	Objects *	Items *	% chg.	% dsp.	Mon. *	Arch.	S.t. *	E.t. *	ID	Short text
	CRM-SLSQOT	A	Y						☐	09	18		
	CRM-SLSQOT	P	P						☐	12	13		
	CRM-SLS	A	Y	600.000	2			60	☐	09	18		
	CRM-SLS	P	P	5.000	2				☐	12	13		
	CRM-SLSCON	A	Y						☐	09	18		
	CRM-SLSCON	P	P						☐	12	13		

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Hardware Sizing Output

Overview | SAPS and SCU class | Memory and disk

Active Users Results for SAP Business Solutions

Solution	Release	CPU cat.	SAPS (total)	DB SAPS	App. SAPS (ABAP)	SCU Class
CRM	7.0	S	9.800	1.100	8.700	AAA

Overview | SAPS and SCU class | Memory and disk

Throughput Results for SAP Business Solutions

Solution	Release	CPU cat.	SAPS (total)	DB SAPS	App. SAPS (ABAP)	SCU Class
CRM	7.0	M	29.400	5.500	24.000	AAA

Overview | SAPS and SCU class | Memory and disk

Active Users Results for SAP Business Solutions

Solution	Release	Memory (total, MB)	DB Memory	App. Mem. (ABAP)	DB Disk cat.	DB Disk (GB, total)	I/O Cat.	I/Os per s.
CRM	7.0	22.528	3.072	20.480	XS	339	XS	2.700

Overview | SAPS and SCU class | Memory and disk

Throughput Results for SAP Business Solutions

Solution	Release	Memory (total, MB)	DB Memory	App. Mem. (ABAP)	DB Disk cat.	DB Disk (GB, total)	I/O Cat.	I/Os per s.
CRM	7.0	96.256	17.408	79.872	M	597	L	14.200

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Cisco UCS HW sizing example
SAP Convergent Billing

Server Instance	Availability	Hosts	CPU	RAM GB	HDD GB	Storage
Convergent Billing						
SAP CC Rater, Guider, Dispatcher, Bulkloader, Diameter, Updater, BART, IEC	99,999%	7	2 x CPU quad core (Intel X5675)	32	2 x 146 RAID 1	
SAP CC Core DB (Oracle EE + RAC)	99,999%	2	1 x CPU quad core (Intel X5675)	32	2 x 146 RAID 1	300 GB
SAP CC BART DB (Oracle EE)	Single*	1	2 x CPU quad core (Intel X5675)	32	2 x 146 RAID 1	15 TB
SAP RM-CA / CI App	99,950%	2	2 x CPU quad core (Intel X5675)	32	2 x 146 RAID 1	22 TB
SAP RM-CA / CI DB (Oracle EE)	99,950%	2	1 x CPU quad core (Intel X5675)	32	2 x 146 RAID 1	
SAP PI App & DB (Oracle EE)	99,950%	2	1 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	150 GB
Ai.PI App	99,950%	2	2 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	
Ai.PI DB (Oracle EE)	99,950%	2	1 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	1 TB
Ai.DI	99,999%	3	2 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	2 TB
OpenCloud Rhino	99,999%	4	2 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	
OpenCloud SS7 Front-End	99,999%	2	2 x CPU quad core (Intel X5675)	16	2 x 146 RAID 1	

UCS Components

Nexus Products

UCS Manager
> Embedded in Fabric Switch
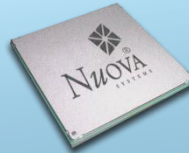
Fabric Switch
> 20 Port 10Gb FCoE
> 40 Port 10Gb FCoE

Nexus 5000 Unified Fabric

Fabric Extender
> Logically part of Fabric Switch
> Inserts into Blade Enclosure

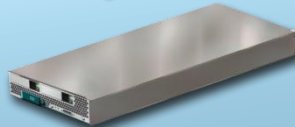**Nexus 2148 Fabric Extender**

Blade Enclosure
> Flexible bay configurations
> Logically part of Fabric Switch

Blade(s)
> Three blade types
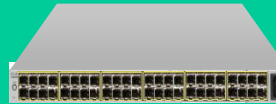> Mix blade types within enclosure

Adapters
> Three adapter options
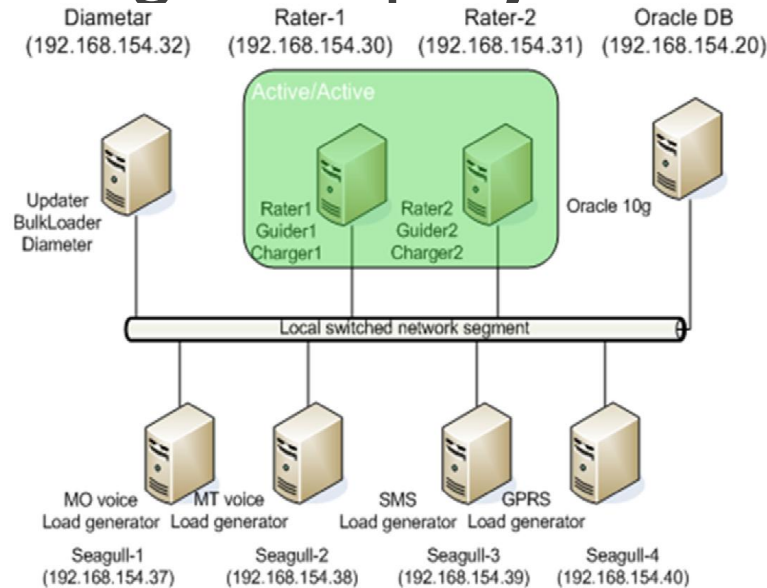> Mix adapters within blade

VM

Nexus 1000V

CNAs with FCOE

Cisco UCS Testing Environment
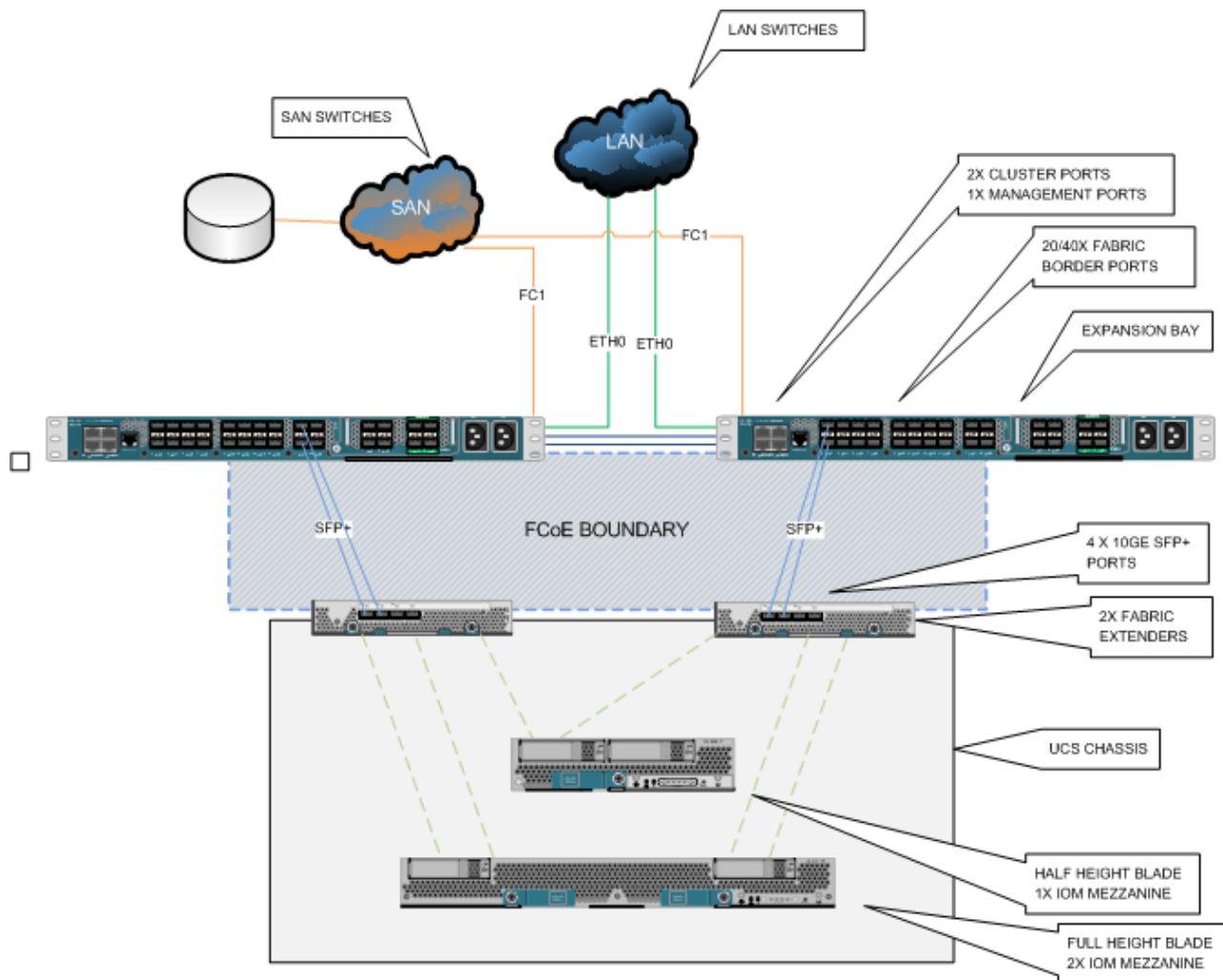
SAP CC Performance Benchmarks in telco Convergence projects

| | Diametar (192.168.154.32) | Rater-1 (192.168.154.30) | Rater-2 (192.168.154.31) | Oracle DB (192.168.154.20) |

PHY-1 (192.168.153.53)	PHY-2 (192.168.153.54)
Configuration:	Configuration:
N20-B6620-1	N20-B6620-1
2x QUAD processor (Inter Xeon X5570 @ 2.93GHz)	2x QUAD processor (Inter Xeon X5570 @ 2.93GHz)
24 GB RAM	24 GB RAM
Virtual Machines hosted:	Virtual Machines hosted:
Seagull 1-4 load generators (up to 2 cores – 1 GB RAM)	Rater-1 VM (up to 4 cores – 10 GB RAM)
Rater-2 VM (up to 4 cores – 10 GB RAM)	Oracle database (up to 4 cores – 8 GB RAM)
Diametar VM (up to 2 cores – 4 GB RAM)	

TPS rate	500	700	900	1200	1500
MO	150	225	300	375	450
MT	150	225	300	375	450
SMS	100	150	200	250	300
GPRS	100	100	100	200	300
TIME	01:40 – 02:00	02:00 – 02:20	02:20 – 02:40	02:40 – 03:00	03:00 – 03:10

Average charging request processing times by type and time (in ms)
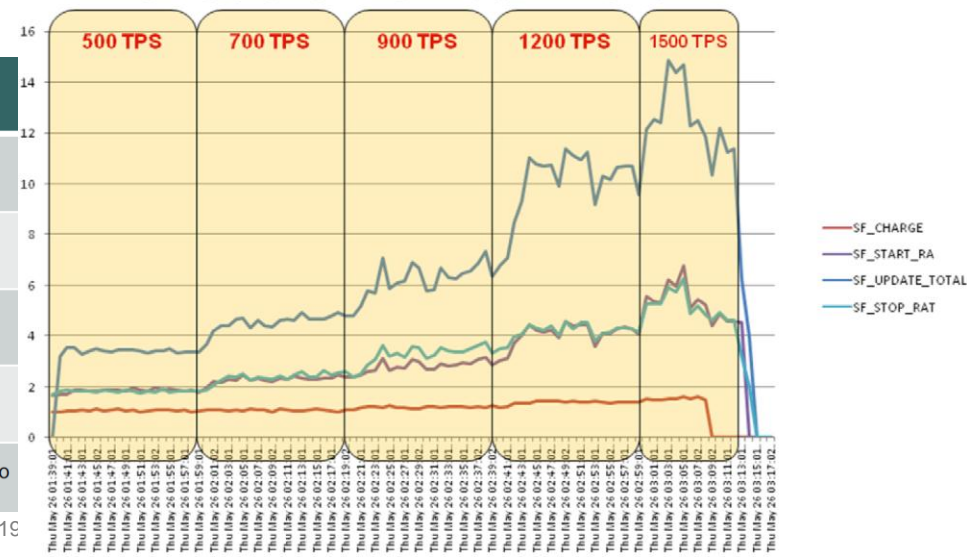
Reality - Information is Exploding within and around Communications Service Providers
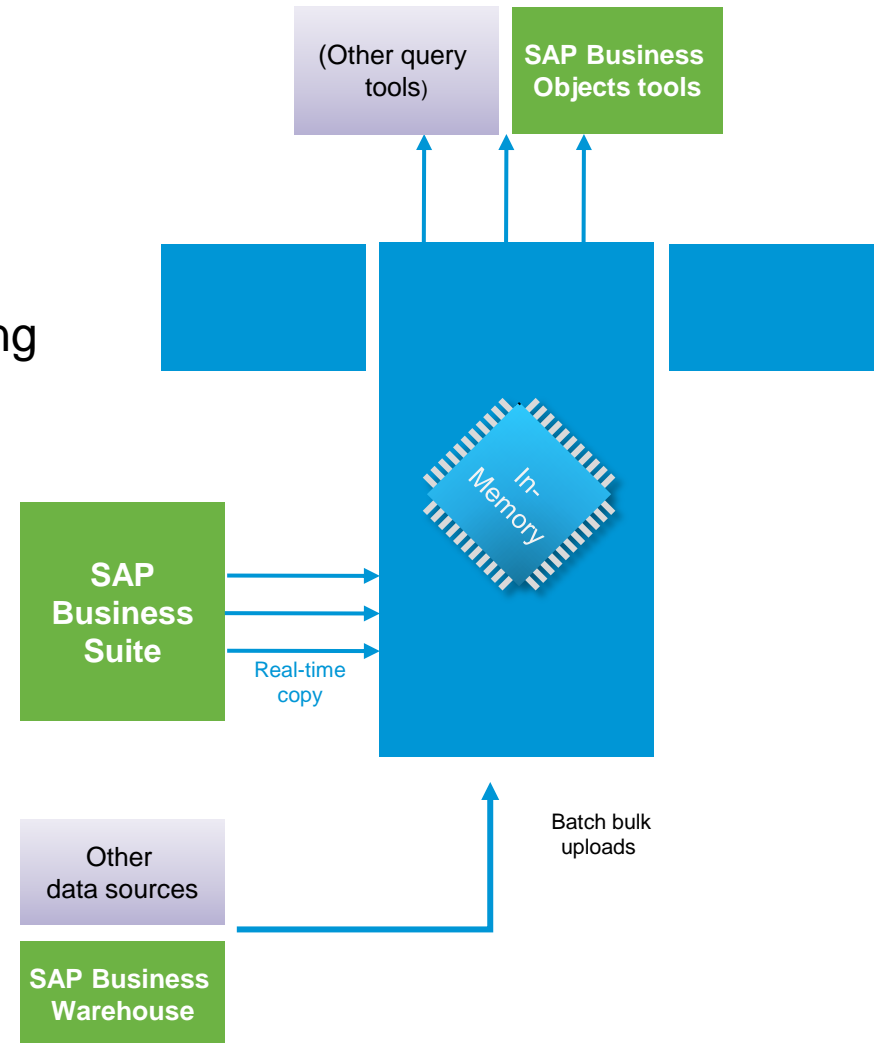

Innovation

Subscriber Data

Location Based Services

M2M

Cloud Computing

Tablets

Social Media

Developer

Facebook

Costs

Speed

Platform-as-a-Service

App Store

4G

Smart Phones

Ecosystem

Customer Service

Margins

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SAP HANA
modern platform for real 'real-time'

What is SAP HANA?

- SAP HANA ™ is a **modern platform** that leverages the power of in-memory computing

- Enables to drive businesses in real-time on an ever increasing massive volume of data

- Can be deployed as an **appliance** or delivered via the **cloud**

(Other query tools)

SAP Business Objects tools

In-Memory

SAP Business Suite

Real-time copy

Other data sources

SAP Business Warehouse

Batch bulk uploads

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SAP HANA for Telecommunications use cases
Sales & Marketing

| Opportunity for the business	In-memory-enabled innovation/SAP HANA use cases	Capability enabled by
• Advanced insights to define, simulate and launch profitable new offers and bundles	Offer Pricing Simulation	Planned Standard
• Near real time information and analysis on new offer performances across all channels and geographies	Offer Performance Management	Custom or Future
• Optimal up-selling and cross-selling results through access to latest usage & consumption in real time/ near-real time	Customer Behavior Analytics	Planned Standard

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SAP HANA at Service Provider
Offer Performance Management accelerated

Offers / Micro-offers
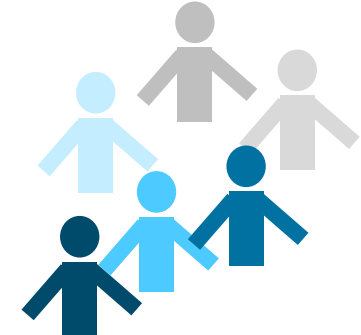
SMS
Call Center
Retail store
Self-Service
Email
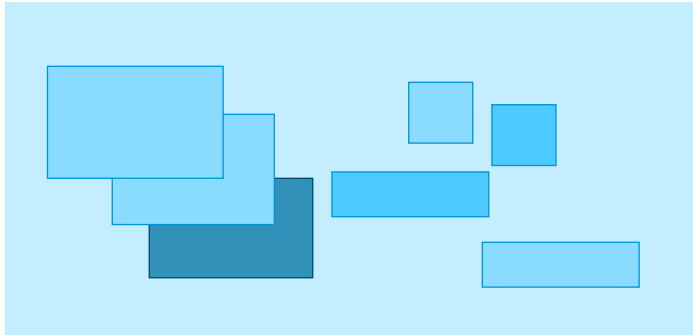
Channels

Customers

Proliferation of **targeted offers/micro-offers** to **21M customers** makes offer performance management increasingly strategic
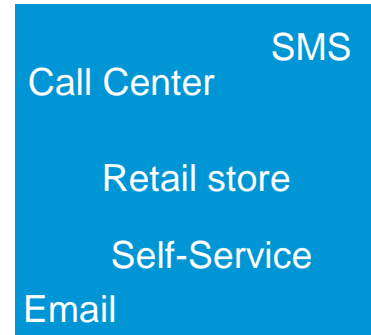
Marketing operations team in need to **quickly analyze** offer uptake, discern patterns and refine offers

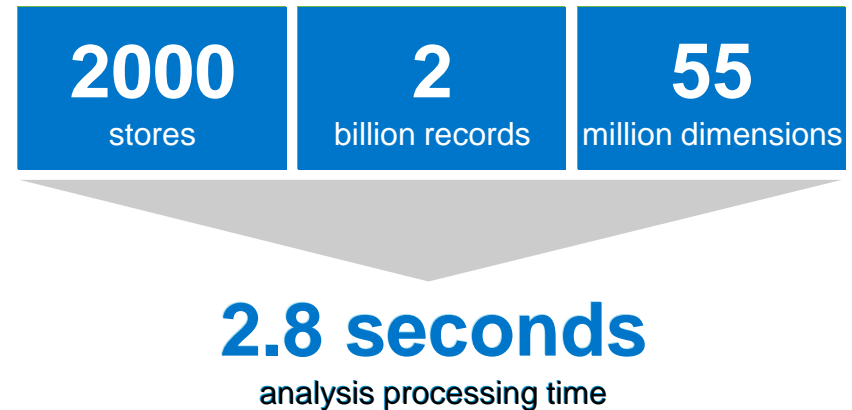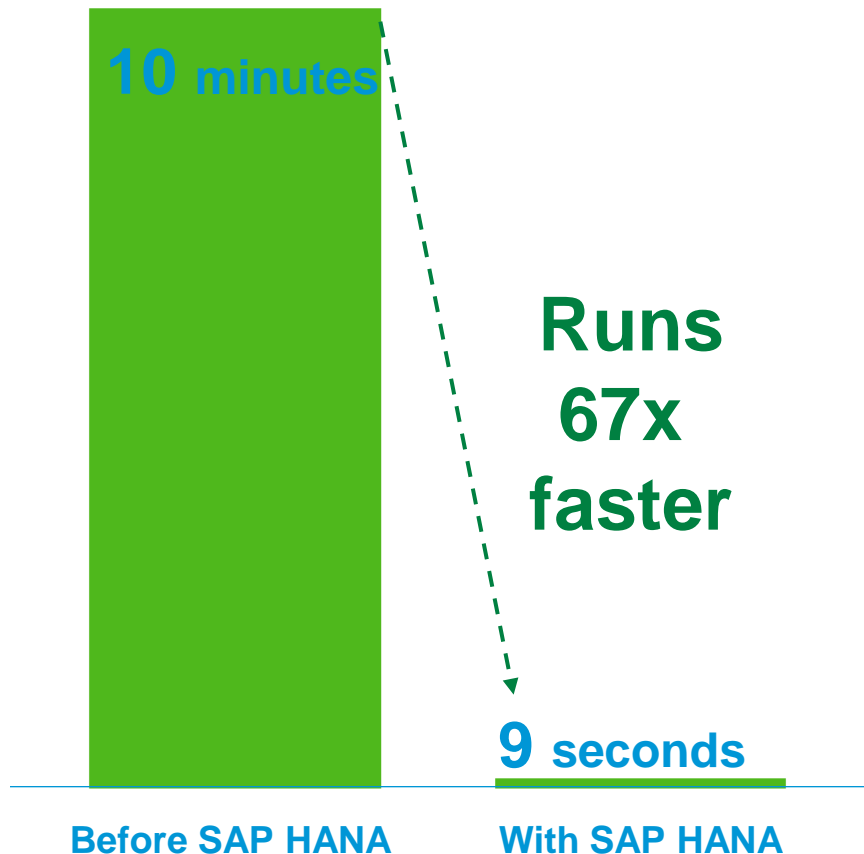Jeff Wiggin — VP Enterprise Systems Development T-Mobile

SAP HANA Deployment
Rapid insight with full detailed data for rich analysis

" 50x improvement in the performance of analytics: **We can recalibrate offers in the market place in one day** that took a week using our existing solutions. "

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SAP HANA in Action
Sample Query Performance in Telecommunications

10 minutes

Runs 67x faster

9 seconds

Before SAP HANA

With SAP HANA

2000	2	55
stores	billion records	million dimensions

2.8 seconds

analysis processing time

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Cisco SAP (HANA) A(p/l)liance

- Cisco's leadership in network intelligence

- SAP's leadership in vertical business transformation

- Cisco Unified Computing System with EMC Storage for SAP HANA - defined set of hardware and software that serves as an integrated infrastructure stack:

  - Cisco UCS High-performance Blade Servers

  - Cisco UCS Fabric Interconnect

  - Cisco Nexus 5000 Switches

  - EMC VNX5300 Storage

- with a single Cisco UCS platform, a SAP HANA appliance can be scaled to 48 computing nodes, with 24 TB of memory or 192 TB of uncompressed data

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Thank you.

Altima d.o.o.
&
Mrežne tehnologije VERSO d.o.o.

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