Challenges in Engineering & Development in a Global Telco

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Comnets, RWTH Aachen
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Overview

1. Introduction
2. Who is SITA?
3. Challenges of a Multi-Cultural Environment
4. Challenges in Engineering & Development
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1. Introduction
My Background

- CTO and VP Engineering & Development (Geneva, '03-...)
- Head of Corporate Strategy (Nuremberg, '02-'03)
- Director Bus. Dev., Products & Marketing (Schwalbach, '01-'02)
- Head of Access Network Development (Eschborn, '98-'01)
- Ph.D. @ Comnets, Aachen University of Technology ('98)
- Diploma in EE @ University of Belgrade ('93)
- Grown up in Ratingen ('71-'85)
- Born in Belgrade ('69)
2. Who is SITA?
SITA's Heritage & Evolution

**Corporate restructuring** (2003)
- Equant Application Services acquired. Now part of SITA INC (Advanced Travel Solutions) (2001)
- SITA reaches strategic agreement with Equant and France Telecom (2000)
- Creation of SITA INC (2000)
- Equant IPO (1998)
- Corporate restructuring* (1995)
- SITA purchases majority interest (70%) in Novus (1993)
- Scitor (now Equant) commences trading (1991)
- Strategic growth study (1987)
- Cargo and Flight Operations systems provided (1983)
- Gabriel shared reservation system available (1974)
- ITS founded (now Equant Integration Services) founded (1971)
- Telegraphic messaging services (1949)

* 1995 Corporate restructuring resulted in the creation of a commercial holding company, now called Equant N.V., into which were placed ITS and Novus, becoming respectively Equant Integration Services and Equant Application Services.

** In 2003's corporate restructuring separate management teams were put into place for SITA SC and SITA INC to enable each entity to focus on its own objectives. A SITA Group function supports the two businesses, providing shared services.
SITA's Products & Services

For airlines, airports, aerospace, travel distribution, governments, cargo and more …

Global communication services integration

Airline operations & AIRCOM services

Airport services

Desktop services: IT infrastructure & outsourcing

Passenger and travel solutions

SITA SC

SITA Inc.

Outsourcing, ASP / hosted applications, e-commerce … And service excellence
SITA SC - Who we are

A team of experts in technology applied to the ATI (Air Transport Industry): "Consult – Integrate – Manage"

A commercially-managed, not for profit organization, founded and wholly-owned by the air transport community

A community of 600 airlines and GDS members, and over 2,000 ATI customers

Local globally, present in 220 countries and territories. 780 staff worldwide – 140 nationalities
3. Challenges of a Multi-Cultural Environment
SITA SC Worldwide

North America
Main office: • Atlanta
Staff: 167

Northern Europe
Main office: • London
Staff: 129

SITA SC HQ
Main office: • Geneva
Staff: 129

Asia Pacific
Main offices: • Singapore • Beijing • Hong Kong • Sydney
Staff: 117

Caribbean & Latin America
Main office: • Mexico
Staff: 49

Southern & Eastern Europe
Main office: • Rome
Staff: 102

Middle East & Africa
Main office: • Beirut
Staff: 89

As of October 31, 2005
SITA SC - Customers Snapshot
"Multi-Kulti" Challenges

Languages
- English is a must, other languages welcome ("IP Everywhere")

@ Work
- Global collaboration: forget politics, ignore religion, what's football?
- Time zones: e.g. meetings vs. conference calls
- Colleagues (re)actions: e.g. eating with wrong hand, kissing

Customers
- Be up to date on global events & news (e.g. TK CIO)

Holidays
- Christmas vs seasons greetings, ...

Travel
- You meet people you know everywhere (if you want or not)
- Become a global "Schnäppchenjäger"
4. Challenges in SITA's Engineering & Development
ED Organization

Branko Bjelajac
CTO (GVA)

Seema Anwar-Akram
Executive Ass. (GVA)

Mansour R.-Mazinani
Network Services Engineering (GVA)

Stephan Guenther
Messaging Engineering (ATL)

Ali Alaie
Applications & Tools Development (GVA)

Daniel De Cruz
Network Planning & Capacity Mgmt (GVA)

Claire Schnee
Network & Integration Services Dev. (PAR)

Olivier Coulmeau
Airport Hubs Services Dev. (NCE)

X. de Carmantrand
Data & Messaging Services Dev. (PAR)

Valery Pialat
Convergence & Voice Services Dev. (GVA)

Joelle Souchu
CCS Development (PAR)

- 70 employees + 40 contr./consult.
- 5 locations (USA, 2xF, CH, IND)
- 15 M$ OpEx / 25 M$ CapEx
- 150+ development projects p.a.
Value added by ED

- **Beyond** technological competencies
- **Converting investments in technology** into
  - Improvements in ATI & customer benefit
  - Competitiveness
  - A secure future for SITA
- **Master conflict** between
  - Pressure to innovate and
  - Need for stable, economical & efficient production
Challenges faced by a ED today

- Knowledge of customer & market expectations
- Value creation more important than choice of technology: “function ahead of system”
- Support of new methodologies & org concepts using value creating networks (collaborative innovation)
- Improvement of the technological strength of SITA coupled with partnering and/or purchase of selected services
- Introduction of open, standardised platforms and interfaces to maintain control over costs & scalability alongside low complexity
- Shift from traditional telco competencies to a mix of skills (incl. IT, telco, finance, business & purchasing)
Generations of Product Development

R&D Productivity Generation Processes

- **Product Strategy and Portfolio Management**
  - Dynamic Portfolio Mgmt
  - Dynamic Pipeline Mgmt
  - Compreh. Financial Mgmt
  - Integrated Product Strategy
  - Idea Mgmt

- **DCM System (Development Chain Management)**

- **Resource Management**
  - Utilization Mgmt
  - Assignment Mgmt
  - Needs Planning Mgmt
  - Transaction Process
  - Resource Requirement Planning
  - Capacity Planning

- **Project Management**
  - Enterprise Project Planning
  - Networked Project Teams
  - Enhanced Phase Reviews
  - Integrated Financial Planning
  - Distributed Program Mgmt
  - Collaborative Development
  - Context-based Knowledge Mgmt

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4.1 Projects & Programs (Examples)

A. BOSS (new Billing & Ordering Support System)
B. Legacy over DSL (new service development)
C. Megaswitch (infrastructure replacement)
D. OSS (new Operational Support Systems)
A. BOSS (Billing & Ordering Support System)
B. Legacy over DSL: Using ISP Services

ALC encapsulated over IP + LAN IP traffic

AX.25, EMTOX, MATIP

Internet

X.25 Host

Host attachment

Airlines Central router
(ALC traffic decapsulation, concentration)
(Optional for MATIP)

SITA/EQUANT
IP VPN (optional)

X.25 terminals

SITA XoT + IPSec router

Customer LAN IP traffic

Airlines
HOST

P1024B/C

ISP DSL CPE

Internet router

IPSec Gateway (Contivity)

Customer IP traffic delivered to VPN

SITA Remote ALC+IPSec router

IPSec tunnel carrying Legacy + IP traffic

IPSec Gateway (Contivity)

Customer IP traffic delivered to VPN

Legacy traffic routed to host over IP

ISP DSL CPE

Internet router

IPSec Gateway (Contivity)

Customer IP traffic delivered to VPN

SITA/EQUANT
IP VPN (optional)

X.25 Host

XoT Gateway
(XoT tunnels concentration)

Customer LAN IP traffic

SITA XoT + IPSec router

X.25 controller

X.25 terminals

X.25 VC

X.25 encapsulated (XoT) over IP + LAN IP traffic

X.25 VC

Legacy traffic routed to host over IP

IPSec tunnel carrying Legacy + IP traffic

Customer LAN IP traffic

SITA Remote ALC+IPSec router

Internet router

IPSec Gateway (Contivity)

Customer IP traffic delivered to VPN

SITA/EQUANT
IP VPN (optional)

X.25 Host

XoT Gateway
(XoT tunnels concentration)

Customer LAN IP traffic

SITA XoT + IPSec router

X.25 controller

X.25 terminals

X.25 VC

X.25 encapsulated (XoT) over IP + LAN IP traffic

X.25 VC
C. The new Megaswitch (MSW)

Protected 2 fiber, diverse path ring providing redundant high-speed/high bandwidth communications for real time data replication.

Fully redundant switch over pair systems provide local high availability.
D. SITA SC's OSS Program

- BOSS
- Siebel TT (SoP)
- SLA Mgmt
- ODS

**BizFlow**
- PS
- WNS
- CTS3

**Technical Resource Information**
- Creation, modification, cessation orders
- Commercial order data (SRF1)
- Technical order information (SRF2)

**Equipment <-> Service**

**Work flows**

**O2S**

**SAFE**

**Technical Inventory**

**AXiOSS**

**Add/Discover Configuration, Activation**

**Provision Smarts/Proviso**

**AdminNet**

**Equant Clarify (Excel)**

**Technical order information**

- Nortel Contivity (IPSec):
  - 600, 1010, 1100, 1700, 2700, 5000

- Perebit (Compression):
  - WX20, WX50, WX80, WX100

- Cisco:
  - 2501, 2621 XM, 8xx, 7206VXR
5. My Recommendations
My "Top 10" Recommendations

1. International background, education & experience helps a lot
2. Diversify your knowledge: e.g. MBA/ExecEdu @ good B-Schools
3. Seek opp's to work asap in Sales, Mktg, Finance or Procurement
4. Develop your leadership & general management skills
5. Build & foster relationships (networking)
6. Deliver tangible results to (internal) customers & promote them
7. Get yourself a mentor (at some stage also a coach)
8. Keep an attractive & stable CV
9. Look for opportunities (without being opportunistic) & take risks
10. Keep asking yourself: "Do I (and my family) really want this?"
Thank you!

Your questions & comments, please.