HOLISTIC VIEW ON ENTERPRISE MOBILITY MANAGEMENT.

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DEUTSCHE TELEKOM - PROFILE

CUSTOMERS & MARKETS

CUSTOMERS
- >151 m mobile customers
- >30 m fixed-network customers/
  >17 m broadband customers
- Approx. 6.1 m TV customers
- Some 1.6 m managed workplace systems

MARKETS
- Present in 50 countries
- Germany, Europe and the USA: with own infrastructure
- T-Systems: global presence & alliances via partners

FACTS & FIGURES

TELEKOM IN FIGURES, 2014
- Revenue € 62.7 bn
- Adjusted EBITDA € 17.4 bn
- Free cash flow € 4.6 bn
- Among the top 100 worldwide
  (#105, Fortune500 list)

EMPLOYEES & RESPONSIBILITY
- Employees worldwide 228,000
- 8,900 trainees and cooperative degree students in Germany
- Pioneer of social issues (climate protection, data privacy, diversity, etc.)

Source: DT 2014 annual report/TMUS annual report to shareholders 2014
T-SYSTEMS IS ONE OF THREE DIVISIONS OF DEUTSCHE TELEKOM

T-Systems
T-Systems delivers ICT solutions for major corporations and public-sector organizations worldwide.

Telekom Deutschland
The Telekom subsidiaries provide products and services for the fixed network, mobile communications, IPTV, online and cloud services in Europe.

T-Mobile
T-Mobile offers cell-phone solutions in the Netherlands, Austria, the Czech Republic and the USA.

T-Systems – Global SAP capabilities
- >3,900 SAP resources on a global scale
- Global Delivery Network SI
  (11 countries, strong freelancer network > 400 FL)
- Strong industry expertise in Telco, Auto, Public and Health (BaiO Healthcare ~100)
- SAP Global Service Provider
- Several Alliances and Certifications

KEY FACTS & FIGURES
GDU SAP TECHNOLOGY SERVICES

DYNAMIC HANA on DCS3.0 platform as HANA Enterprise Cloud Partner

SAP Plug on the DYNAMIC CLOUD PLATFORM
launched in April 2014.

3.5 MIO USERS are using our Systems productively.

Running more than 5600 SIDS on more than 56.7 MIO SAPS

In 2014 we decreased our high incidents by 77%

Biggest HANA Installation with 8 TB OF MEMORY

Serving over 400 CUSTOMERS around the globe

BEST IN CLASS, LEADER
with PAC and GARTNER

Biggest single SAP System with 850,000 SAPS

LIFE IS FOR SHARING.
T-SYSTEMS – DEUTSCHE TELEKOM’S SUBSIDIARY FOR MAJOR CORPORATIONS

8,6 BILLION €  REVENUE
0,8 BILLION €  EBITDA
47,762  EMPLOYEES

Information technology and telecommunications services in all industries:
automotive, finance, transport, retail & public sec

Pionier in cloud computing
Corporate customers, multinational corporations & public sector

Financial figures taken from DT’s 2014 annual report
May 2015
WHY ARE WE HERE?

AS DEUTSCHE TELEKOM: **MOBILITY IS OUR DNA**

AS T-SYSTEMS WE COMBINE IT AND TELECOMUNICATIONS KNOW-HOW
MOBILITY RULES
How can I use mobile technologies in an intelligent way to increase productivity and efficiency in my company?
OPTIONS FOR MOBILE PRODUCTIVITY

Mobile Productivity

- establish new business models and processes
- Optimize and simplify existing business processes
B2C: EXAMPLE NEW BUSINESS PROCESSES
B2C/B2BC: VIRTUAL STORE

- Tesco virtual store
- Südkorea Seonreung subway station
- 500 most wanted products on wallpaper
- Scanning with special app
- Delivery service, when order is posted before 12 am
- +130% Revenue in Online Sales
- Most popular shopping app in Korea
- >1 Mio Downloads
B2C: VIRAL COUPONING

- Coupons directly sent to mobile devices
- Viral distribution: forwarding increases discount
- Highly used
- Proximity marketing/Geotargeting/push-notification
- Very good service perception
- Very attractive for the customer
- More revenue for the engaged companies
- Individual customer contact
- Munich airport
New sales channel for insurance companies
- Short-time insurance for cars, Health, sports, family
- Dynamic health insurance (dependend on the country)
- Easy contracting
B2E: EXAMPLE SIMPLIFYING EXISTING BUSINESS PROCESSES
MOBILE PRODUCTIVITY B2E?

Leverage points

- Avoid idle times
- Reduce paper based processes
- Mobilize workflows
- Enable Collaboration
- Avoid media breaks
- Enable document access
- Support knowledge worker
EFFECTS OF MOBILISATION

➡️ Mobility: investment in ICT/ direct effects in core business

Revenues

Overall costs

2 - 7 % ICT Kosten

Core business processes

Mobilize core business processes

increase revenues and/or reduce overall costs
**BUSINESS CASE: „MOBILER AUSSEN DIENST“ WITH SAP SYCLO**

### OLD SOLUTION
- Sensitive hardware
- Complex handling
- Paper-based orders
- Daily report, driver's log not automated
- Separate inventory management

### NEW SOLUTION
- Rugged hardware
- Integrated SAP CS and MM (Syclo)
- Automated daily report
- Electronic log book
- CS Order management
- Dynamic route optimization
- Mobile printing

### PRODUCTIVITY GAIN

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily time savings</td>
<td>of around <strong>30 MINUTES PER EMPLOYEE</strong></td>
</tr>
<tr>
<td>With 2,000 employees</td>
<td>more than <strong>28,000 DAYS</strong> per year</td>
</tr>
<tr>
<td>Corresponds to an efficiency gain of</td>
<td><strong>€ 15 MILLION PER YEAR</strong></td>
</tr>
</tbody>
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**T ▪▪▪ LIFE IS FOR SHARING.**
THE ROAD TO MOBILE PRODUCTIVITY
ENTERPRISE MOBILITY

WHAT DO I NEED?

- Which processes?
- Who?
- What for?
- What do I need?
- Devices?
- Online?
- Offline?
- BYOD?
- Data volume?
- Motivation
- Screens?
- App termination?
- B2E/B2B/B2C?
- Hybrid?
- Security?
- Security?
- Cache?
- Native?
- Standard-Apps?
- Architecture?
- Native?
- Native?
- Hybrid?
- Hybrid?
- Security?
- Security?
- App termination?
- Effects in the backend systems?
- App termination?
- Effects in the backend systems?
- B2E/B2B/B2C?
- BYOD?
- Data volume?
MOBILE ENTERPRISE - COMPONENTS

- Mobile Productivity
- Mobile Infrastructure
- Mobile Access

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Security</th>
<th>Sourcing</th>
<th>Services</th>
</tr>
</thead>
</table>

LIFE IS FOR SHARING.
MOBILE ENTERPRISE - COMPONENTS

Mobile Productivity
- Business processes
- Content, collaboration
- Apps, Consulting, Integration

Mobile Infrastructure
- Hardware, Infrastructure, MDM
- Mobile Middleware, e.g. SAP SMP

Mobile Access
- Access, voice/data tariffs, TEM, ...
- Networks, WLAN
THE ROAD TO MOBILE PRODUCTIVITY

Mobile Strategy
- General conditions
- Influencing IT projects
- Selection of devices
- OS
- Use cases/Quick Wins
- Security concept
- Governance
- Strategy
- Roadmap

Mobile Infrastructure
- Hardware purchasing
- Device management
- Middleware
- Rollout devices, SIMs
- Enrollment in MDM
- Policies
- PIM

Mobile Productivity
- Apps
- Appstores
- Mobile processes
- Workflows
- Content
- Collaboration
- (VR, ...)
- New Business

Value add with all devices!

Secure and stable infrastructure!

Clear scope and clear roadmap!
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Clear scope and clear roadmap!
Mobile Application Strategy
Using mobile applications in the enterprise

Mobile Technology Strategy
Using mobile devices in the enterprise

Mobile Device and Application Management
Managing and operating mobile devices and applications

Mobile Service Operations and Governance
Management- and governance for mobile services
T-SYSTEMS/DETECON: MOBILITY CONSULTING

Experton Market Insight
Mobile Enterprise Vendor Benchmark - Deutschland
- Mobility Consulting, Large Accounts, Dienstleister -

Quelle: Experton Group, März 2014
## Mobile Infrastructure
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**Secure and stable infrastructure!**
**Value add with all devices!**

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Clear scope and clear roadmap!
MOBILE INFRASTRUCTURE

MEAP: Mobile Enterprise Application Platform
e.g. SAP Mobile Platform

MDM: Mobile Device Management

Applications/ Business Processes

Hardware

Access infrastructure
DEVICEMANAGEMENT/SECURITY APPROACHES

- **Unmanaged Connection**
  - **Mobile Device Management (MDM)**
  - **App Wrapping/Containerization**
  - **Device-driven solutions (e.g. Samsung Knox)**
  - **Special solutions (BOSNET, SimKo, Mobile Encryption App, ...)**

Security level
MOBILE ENCRYPTION APP
SECURE VOICE AND DATA ENCRYPTION

Easy to roll out within the company:
- Solution can be rolled out via public App Stores and provisioning links
- App-based, optimized for low threshold installation in large-scale device fleets

Efficient solution:
- Low bandwidth requirement (4.8kbit/s)
- Works with GPRS, EDGE, 3G, WiFi, satellite coverage

Wide range of smartphones supported:
- Android<sup>1</sup>
- iOS<sup>2</sup>
- Windows Phone<sup>3</sup>

<sup>1</sup> Android 4.x  |  <sup>2</sup> iOS 7 and higher  |  <sup>3</sup> Windows Phone 10

Users must have a relevant mobile service contract with a VoIP provider to use the app.
MOBILE SECURITY
RISKS ALONG THE ENTIRE MOBILE INFRASTRUCTURE

1. Private use endangers the company
2. Data falls into criminal hands
3. Uncontrolled app behavior
4. Unsecured company network access
5. Data & voice transmission can be tapped
6. Operating systems with back doors
7. Unsecured backend integration
hacker attacks on smartphones are fact: see www.sicherheitstacho.eu
MOBILE DEVICE MANAGEMENT

MDM products

Delivery model

YOUR OPTIMAL MDM SOLUTION

SAP Afaria

BlackBerry

AirWatch

Good Mobile

SAMBA!

unmanaged
on premise

managed
on premise

SaaS

AO
hosted

Individual Services

Consulting
MOBILE WORKPLACE SERVICES (MOWS). COMPREHENSIVE SERVICES.

Device Lifecycle Management
- Logistics, pool devices, fix, warranty handling...
- SLA, UHD, Patches, Incident man., Reporting...
- Consulting, Roadmap Strategy
- Installation
- Configuration and enrollment

Managed End-to-End Services
- Service Desk / User-Help-Desk
- Catalog- and Order Management
- Service Delivery Management
- Client Engineering
- Remote Trouble Shooting
- User Management
- Administration
- Software Support
- ...

Multi-OS Support for maximum flexibility
- E-Mail/PIM
- VPN Integration
- Testing Services
- HW Supply
- Asset Management
- Reporting
- Logistic Services
- Enterprise Apps
- Security Policies Enforcement
- Remote Management
- Software Distribution & Management
- FMC & UC
- Self-Service
- Mobile Printing
- Break & Fix Services
- etc.

LIFE IS FOR SHARING.
**APPLIKATIONSMINFRASTRUKTUR**

**OHNE MOBILE MIDDLEWARE**

- Exponentiell steigender Wartungs- und Managementaufwand
- Sicherheit schwieriger zu gewährleisten
- Roll-out-Prozesse (z.B. Updates) erschwert

**MIT MOBILE MIDDLEWARE**

- Sicherstellung von Security Standards
- Klar definierte Schnittstellen
- Online-/Offline-Fähigkeit
- Multi-Plattform-Support

**MOBILE MIDDLEWARE**
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T-SYSTEMS‘ APP FACTORY

Global Mobile App Factory ©

Organizational Unit

- Standards & Guidelines
  - Governance
  - Design Guidelines
  - Coding Guidelines
  - Security Guidelines
  - Certification Processes
  - Testing framework

- Agile Process Model
  - SCRUM
  - Efficient approach for min. time-to-market
  - Flexibility and feedback on design
  - Certified developer

- Technical Framework
  - Mobile enterprise architecture
  - Gen. module library
  - Code libraries
  - Infrastructure & tools
  - Developer Platforms

- Flexible Delivery Model
  - Mixed teams
  - onsite/offsite
  - offshore/nearshore
  - Large partner network
  - Full delivery responsibility

Consulting Framework

App Factory as consulting offering
T-SYSTEMS‘ APP FACTORY
MOBILITY SUPPORT FOR THE ENTIRE LIFECYCLE

Global Mobile AppFactory

Plan

Consulting
Mobile Strategy
Mobile Technology
Mobile Architecture
Mobile Processes

Concepts
Use Cases
Storybooks
Integration
Security

Build

App Development
Native Apps
Hybrid / Cross platform apps
HTML5 Web Apps
Mobile SDKs

Customizing
Product Apps
Solution Apps
Middleware Customizing
Backend Customizing

Integration
Landscape Setup
Backend integration
Testing
Code Review Certification

Run

Roll-Out
App Distribution
Training
Roll-Out support
Initiate Onboarding

Operations
Application Life Cycle
App Operations
Middleware Operations
Device Management
MOBILE ENTERPRISE: INTEGRATIONS-KNOW-HOW

Devices

Mobile Middleware

Backend

Out-of-the-box apps

Individual apps

Mobile Know How
- Consulting Mobile Solution
- Mobile Solution Architects
- Client (Mobile) Developers
- Mobile Technology Consultants
- Security Experts
- Mobile Middleware Experts

Backend Know-How
- Consultants
- Architect
- Technology Admin
- Developer

SAP/BI/CRM/

Mobile Gateway
MOBILE ENTERPRISE - COMPONENTS

- Mobile Productivity
- Mobile Infrastructure
- Mobile Access

- Strategy
- Security
- Sourcing
- Services
THANK YOU!
T-SYSTEMS – DEUTSCHE TELEKOM’S SUBSIDIARY FOR MAJOR CORPORATIONS
A GLOBAL PLAYER WITH GLOBAL RESOURCES

INTERNATIONAL PRESENCE
OFFICES IN OVER 20 COUNTRIES, GLOBAL DELIVERY CAPABILITY

FOCUS
LARGE CORPORATIONS, MULTI-NATIONAL COMPANIES, PUBLIC SECTOR AND HEALTHCARE ORGANIZATIONS

MARKET POSITION
NO. 1 ICT PROVIDER IN GERMANY
NO. 2 SYSTEMS INTEGRATION IN GERMANY
NO. 2 MANUFACTURING IN EMEA

REVENUE
€9.5 BILLION*
*2013 FIGURES

EMPLOYEES
APPROX. 50 000 (27 000 IN GERMANY, 23 000 OUTSIDE GERMANY)*
*2013 FIGURES
WHY T-SYSTEMS?

References

110,000 full managed devices
B2B and B2C references

One Stop Shopping
Public Cloud Services
Privat Cloud Services
Integration
Business Consulting

Vendor Benchmark Experton
2 times Leader Mobile Enterprise 2014

M2M platforms accredited
Mobility Test Center
SAP Certified Mobile Operator

Technologiepartner

SAP
BlackBerry
Microsoft
VMware
Salesforce
MobileIron
IBM
Samsung

Experton Mobile Enterprise Vendor Benchmark
Mobility Consulting Dienstleister

Telecom
T-Systems

Experton Mobile Enterprise Vendor Benchmark
Mobile Device Management Dienstleister
Enterprise, Deutschland (2014)

Managed Workplace Dienstleister