

Compass: A Cooperation Model for Personalised and Situation Dependent Services in Mobile Networks

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Compass: A Cooperation Model for Personalised and Situation Dependent Services in Mobile Networks

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Agenda

• Introduction

- The Compass Approach
 - Situation Concept
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Introduction

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Introduction, Motivation

- Motivation:
 - Is the delay of the **UMTS** rollout a result of the lack of “adequate” applications and mobile services?
 - What does “adequate” **mobile (data-) services** look like?
 - How could they be developed **systematically**?
- Solution components:
 - More attractive and **personalised** services
 - Flexible **billing** models
 - **Cooperation**, task and competence sharing
- State of the art:
 - **Cooperation** model (i-mode, Japan & Germany)
 - Situation dependent **web** platform (Hitz et.al., 2002)





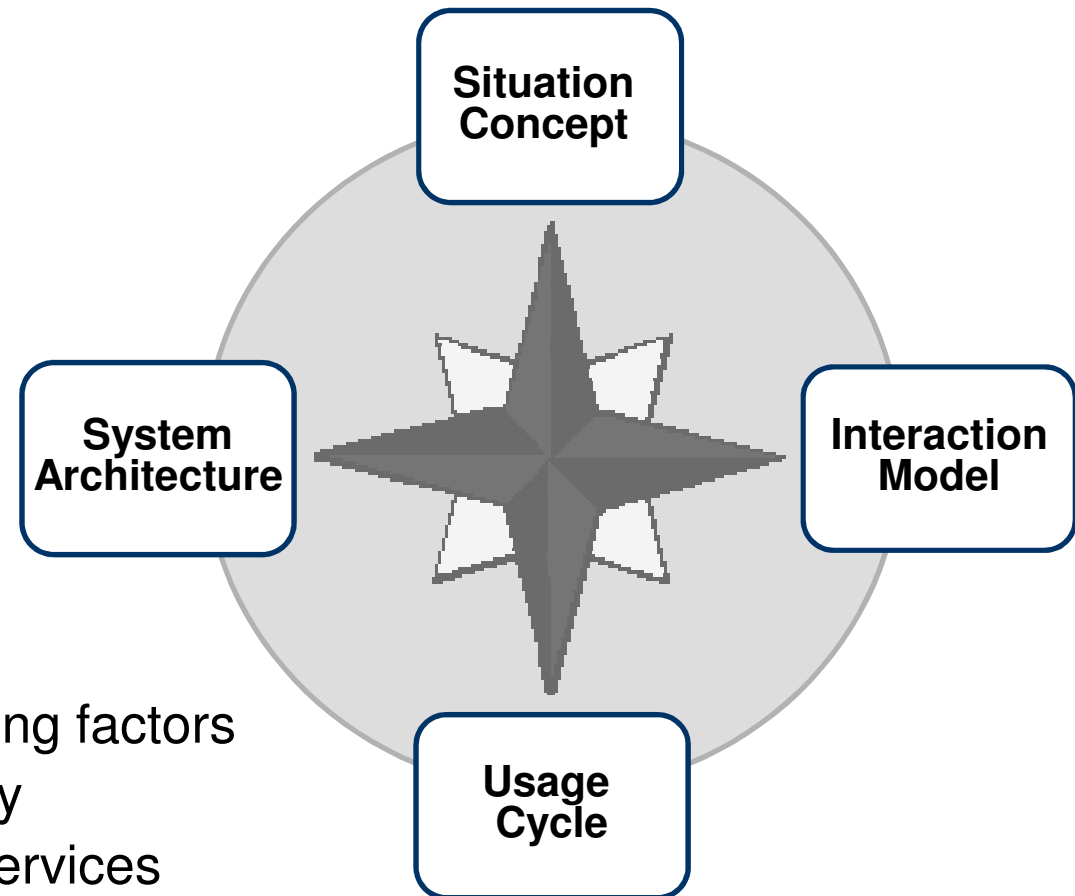
Compass in an Overview

The Compass Approach

Compass:
COoperation
Model for
Personalised
And
Situation dependent
Services

Special features:

- **Balanced view** on the influencing factors
- Focus on situation dependency
- Cooperative development of services
- Comprehensive & integrated approach
- Separation of concept and realisation





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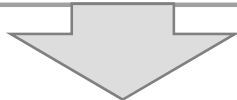




Demarcation & Classification

The Compass Situation Concept

Compass	Hitz et. al. (2002)	Scheer et. al. (2002)	Gessler, Jesse (2000)
- Time	- Time	- Time Context	- Time
- Place	- Position	- Local Context	- Location
- Person	- Terminal Equipment	- Personal Context	- User Context
	- Network Parameter	- Action based Context	- Object Context
			- General Context



***Time, Location and Person* are directly measurable, interpretable and enhanceable with additional information.**





Measuring the Situation Determinants

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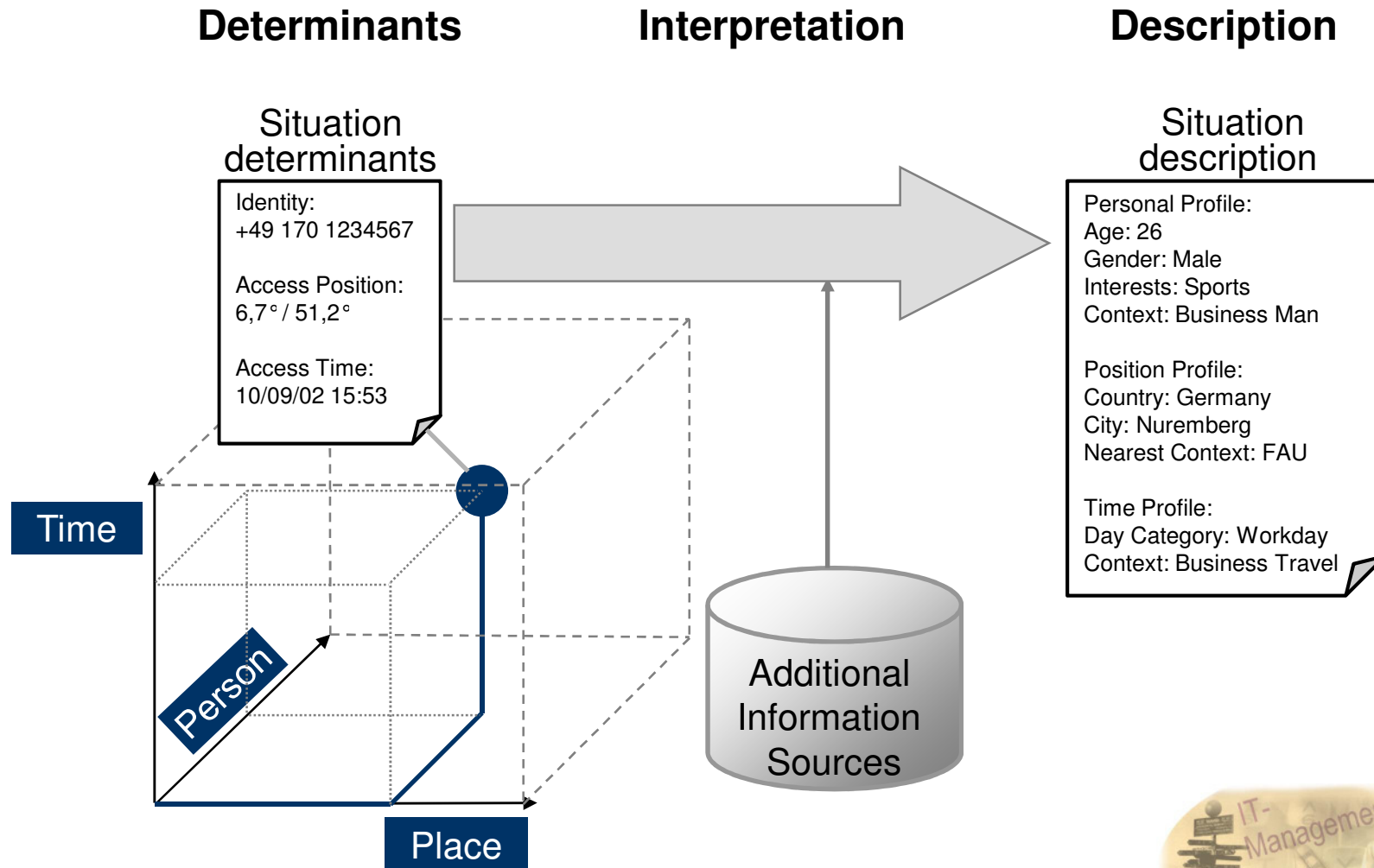
The Compass Situation Concept

- Measuring the Local Time (*Time*)
 - Coordinated Universal Time (UTC)
 - Greenwich Mean Time (**GMT**)
- Determination of the Location (*Place*)
 - Degree of longitude and latitude according to the World Geodetic System – 1984 (**WGS84**)
 - Network based, terminal based
- Identifying the mobile client (*Person*)
 - Mobile Subscriber International Subscriber Directory Number (**MSISDN**)
 - Subscriber Identification Module (**SIM**)
 - System Signalling 7 (**SS7**)-Protocol





The Compass Situation Concept





Interpretation of the Situation Determinants

The Compass Situation Concept

Input

Interpretation

Output

Situation determinants

Identity:
+49 170 1234567

Access Position:
6,7° / 51,2°

Access Time:
10/09/02 15:53



	General Attributes	Personal Attributes
Person	Demographic Databases	Personal Profile (Hobbies, Age, Job, etc.)
Place	Digital Cards, Points of Interest	Location Preferences (Home, Work etc.) and different Routes
Time	Calendar (Events, holidays, etc.)	Personal Calendar (Dates, Business-journeys, holidays etc.)



Situation description

Age: 26
Gender: Male
Interests: Sports
Context: Business Man

Country: Germany
City: Nuremberg
Nearest Site: FAU

Day Category: Workday
Context: Business Travel

Additional Information Sources





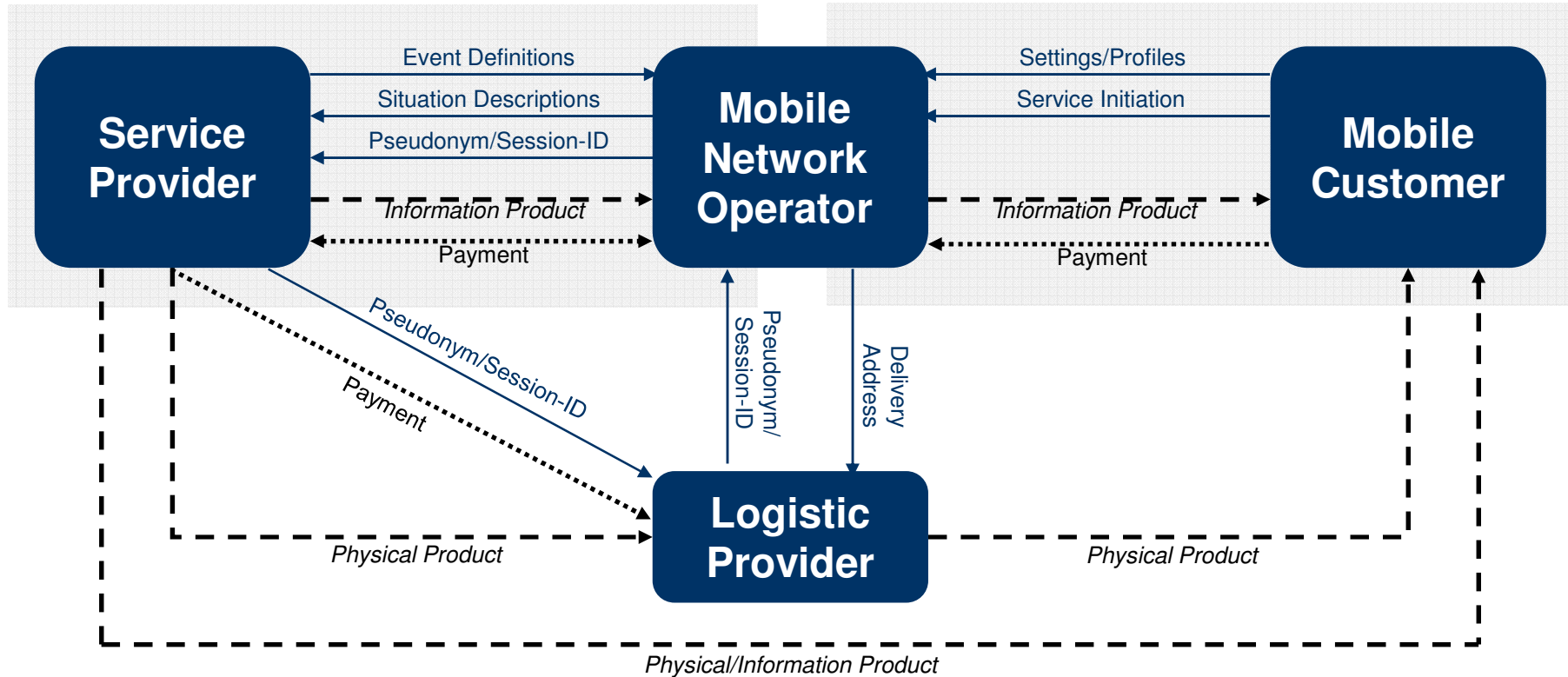
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The Compass Interaction Model



- **Design Criteria:**
 - Cooperation of the involved parties
 - User's anonymity
 - Integration of a broad spectrum of different services





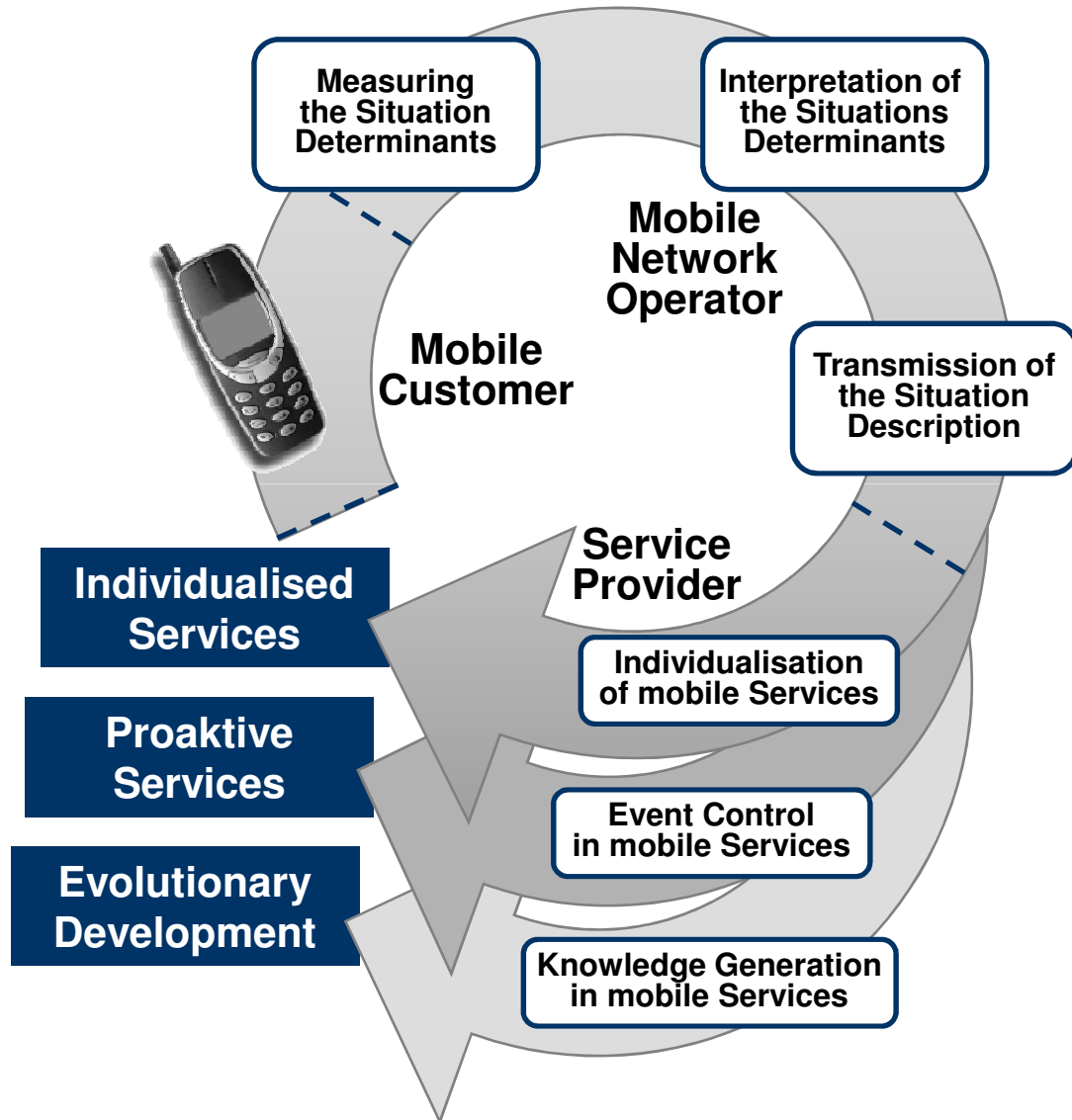
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The Compass Usage Cycle





Adaptation of individualised Services

... according to the *Position*:

- Location Based Services (**LBS**)
- Orientation and shopping assistants

... according to the *Time*:

- Day- and week time
- Holiday
- Leisure, work

... according to the *Person*:

- User's **preferences**
- **Profiles**, preferences, knowledge, interests
- **Behaviour**





Proactive services are mobile (push-) services, that are initiated based on rules.

- Rules in services:
 - Rule **definition** by service provider or/and user
 - Rule **limitation** by mobile network operator or/and user
 - Rule **control** by mobile network operator
 - Rule triggers **event** (proactive service)
- User's control:
 - **Declaration of consent**
 - Protection of **anonymity** to the service provider
 - Rule **control** (build, manage, delete)





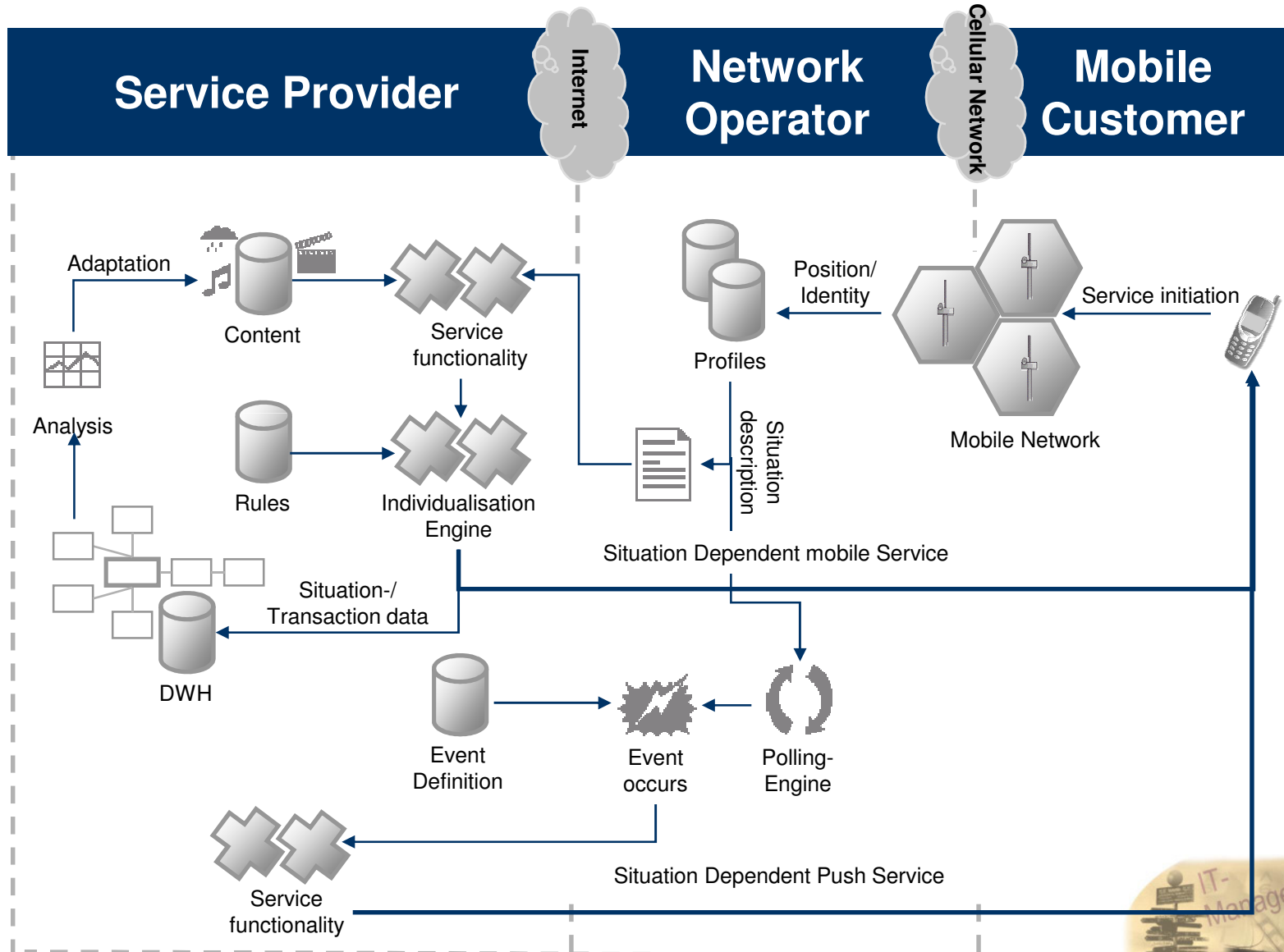
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The Compass System Architecture





Identity Management

Die Compass System Architecture

- Anonymity
 - e.G. **Session-ID**, S-ID per session
 - No personal relationship possible
- Pseudonymity
 - e.G. **nickname** or X-ID
 - Customer can use **many pseudonyms**
 - Recognition without personal relationship
- Identity
 - e.G. **MSISDN**
 - Explicit personal relationship
- Mobile network operator is a Trusted Third Party (**TTP**)





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- ▶ **• Summary and Outlook**





Summary and Outlook

The Compass Approach

- Summary Compass:
 - Methodical framework.
 - Identification of **problems**.
 - Balanced view on major influencing factors.
- Next Steps:
 - Advancement to an **development methodology**.
 - Identification of languages and **standards**.
 - Building **prototypes**.
 - Advancement of **anonymity** and **trust aspects**.

