SESAM – Services Standards for the Automotive: Federation Services.

Business Scenarios Leveraging Federation Services Standards
for the Automotive Industry.

Wolfgang Jodl

BMW Group

SESAM.
Agenda.

- The BMW Group

- Challenges for the Automotive Industry

- Business scenarios using Federation Services

- Technical Aspects and Influences of Federation Services

- Classification of Federation Scenarios – Federation Patterns

- Discussion

BMW Group.
Premium Brands BMW, MINI and Rolls-Royce.

BMW Group.
Company Information.

	2007	2006	2005
BMW Group workforce	107,539	106,575	105,798
BMW Group revenues (in Mio. €)	56,018	48,999	46,656
BMW Group car deliveries	1,500,678	1,373,970	1,327,992
BMW Group profit (in Mio. €)	3,873	4,124	3,287

BMW Group.
IT Community.

Facts

▸ 3 GDCs (Americas/Asia/EMEA)

▸ 13 locations on all continents

▸ Approx. 3,000 employees

▸ 80,000 clients, 40% Notebooks

▸ More than 6,000 servers

▸ 3 mainframe installations

▸ Thousands of (web-)applications

▸ 3 main portals (B2B, B2D, B2E)

▸ Several federated/trusted
 local portal solutions

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Challenges.

Business processes and relationships are changing fast:

- Trend towards Cooperations

  - Enormous efforts for developing new components (e.g. engines)
  - Trend towards Components-based assembly & development
  - Flexible usage of On-Demand capacities

- Fast integration of Mergers & Acquisitions

  - Time-To: fast integration into existing Infrastructure/Processes
  - In the past, this was mainly focused on integrating infrastructures, now it is a question of process integration (what it should be).

- Flexibility & Cost reduction

  - Fast service integration is a major topic
  - SAAS promises flexibility without too tight integration

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Challenges & Consequences.

IT must be flexible and adaptive towards new business needs.

- User-centric process chain integration with external partners, Online Services, or SAAS providers
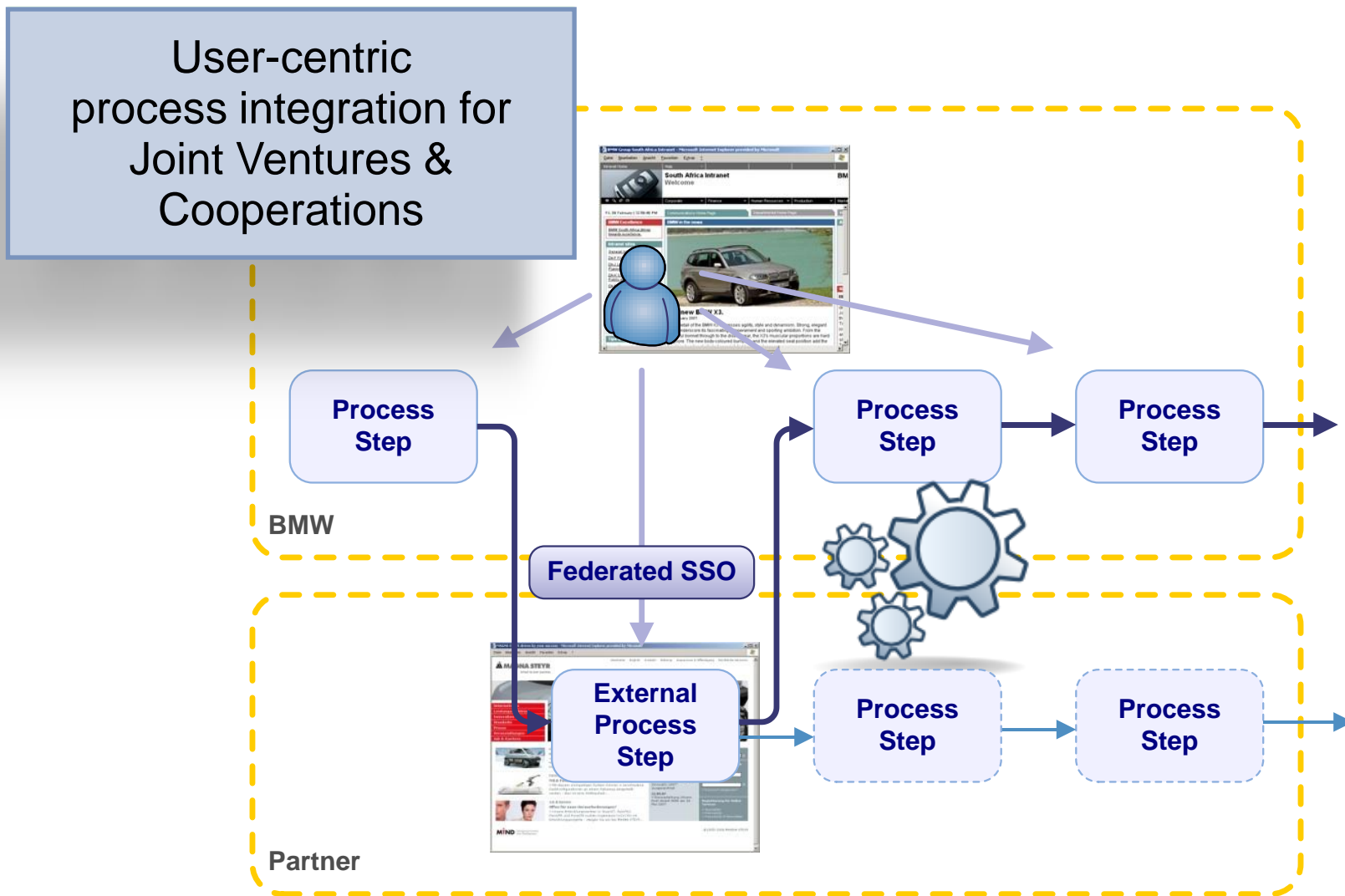
- Trend towards SAAS (software-As-A-Service) models

⇨ All of those challenges result in process-oriented integration of various systems, across different companies:

- Collaborative engineering, design, development and manufacturing
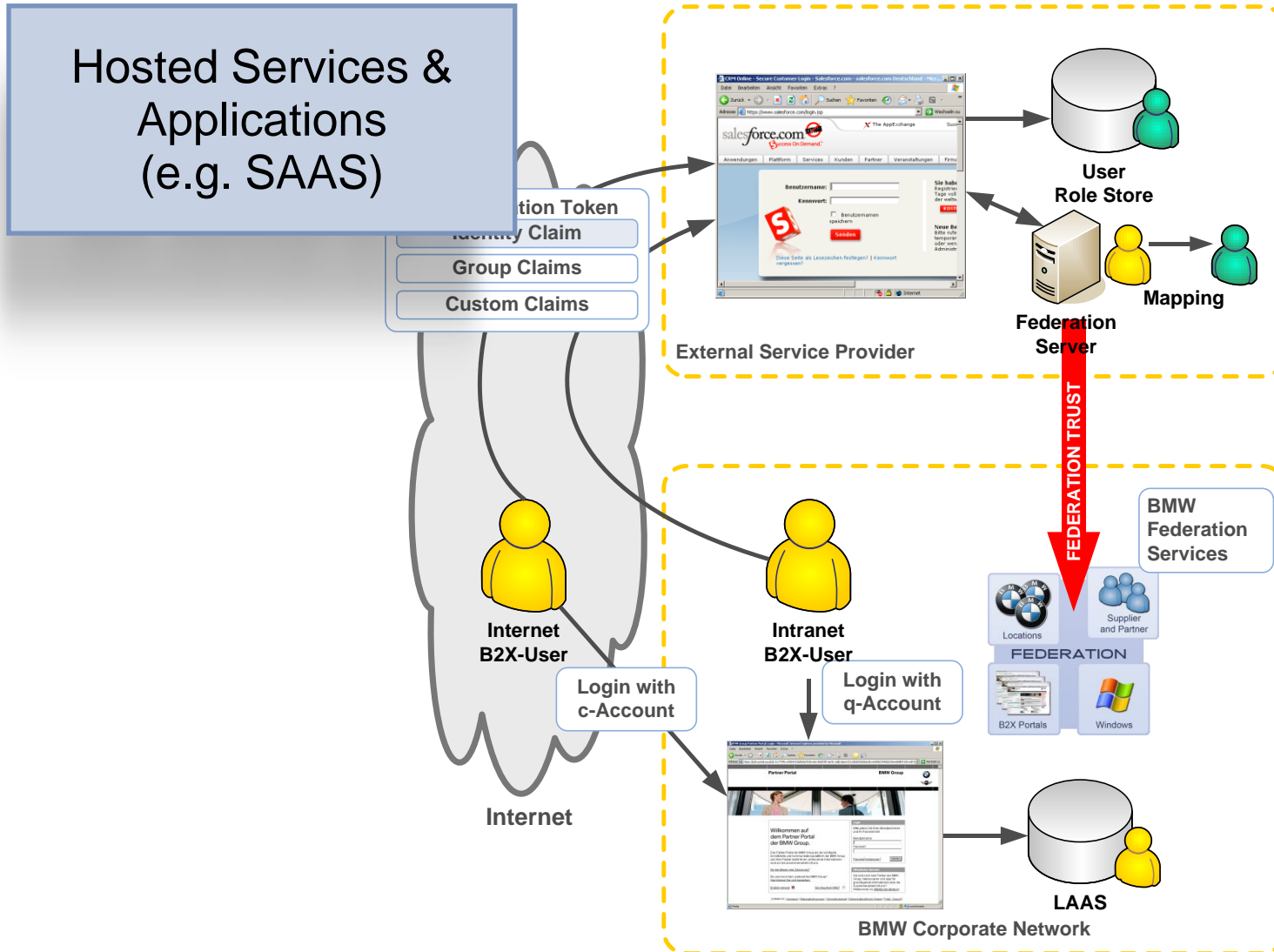- X-As-A-Service Models
- Flexible Customer services
- …

⇨ Federation can help solving the user-centric process & application integration challenge.
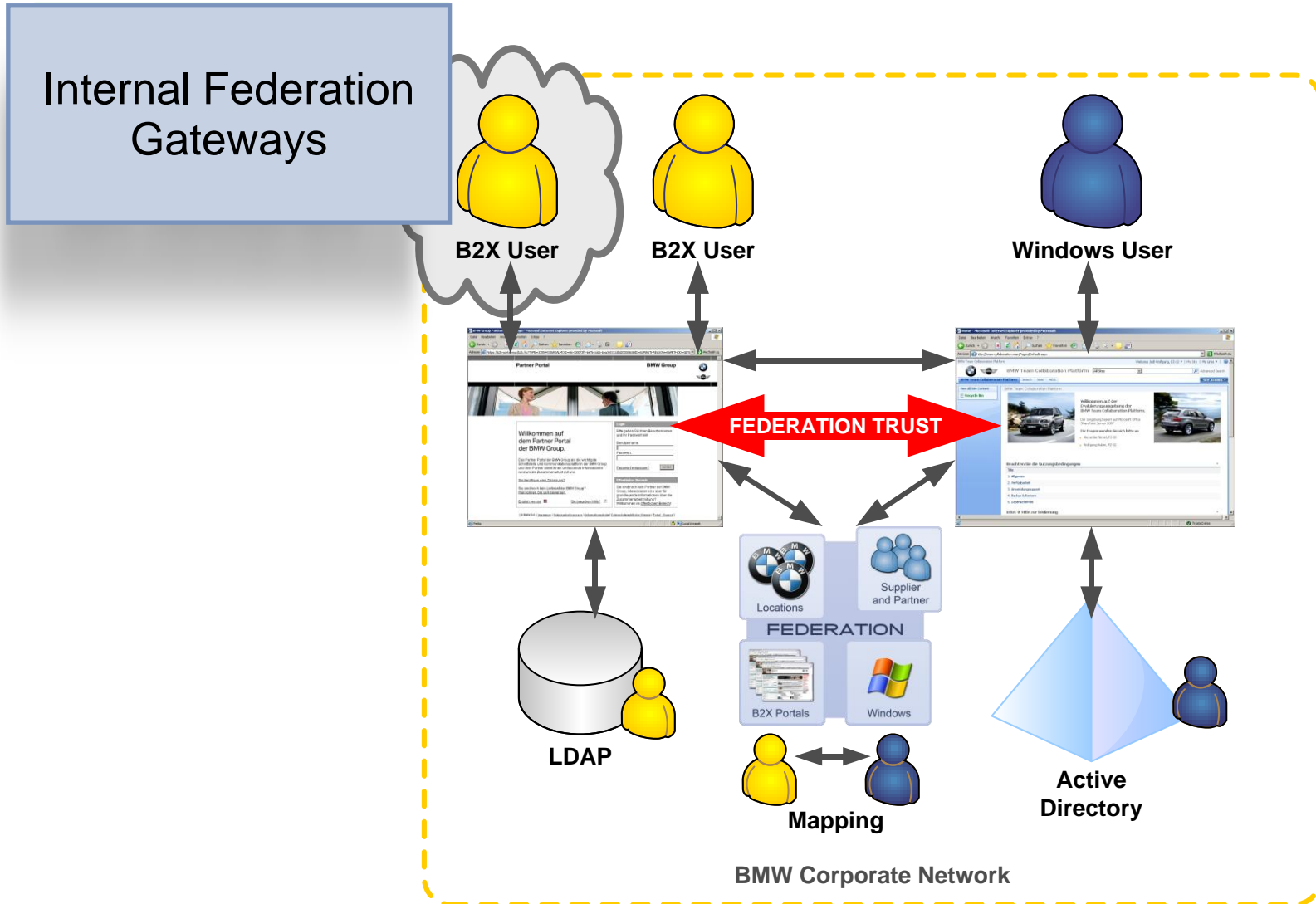
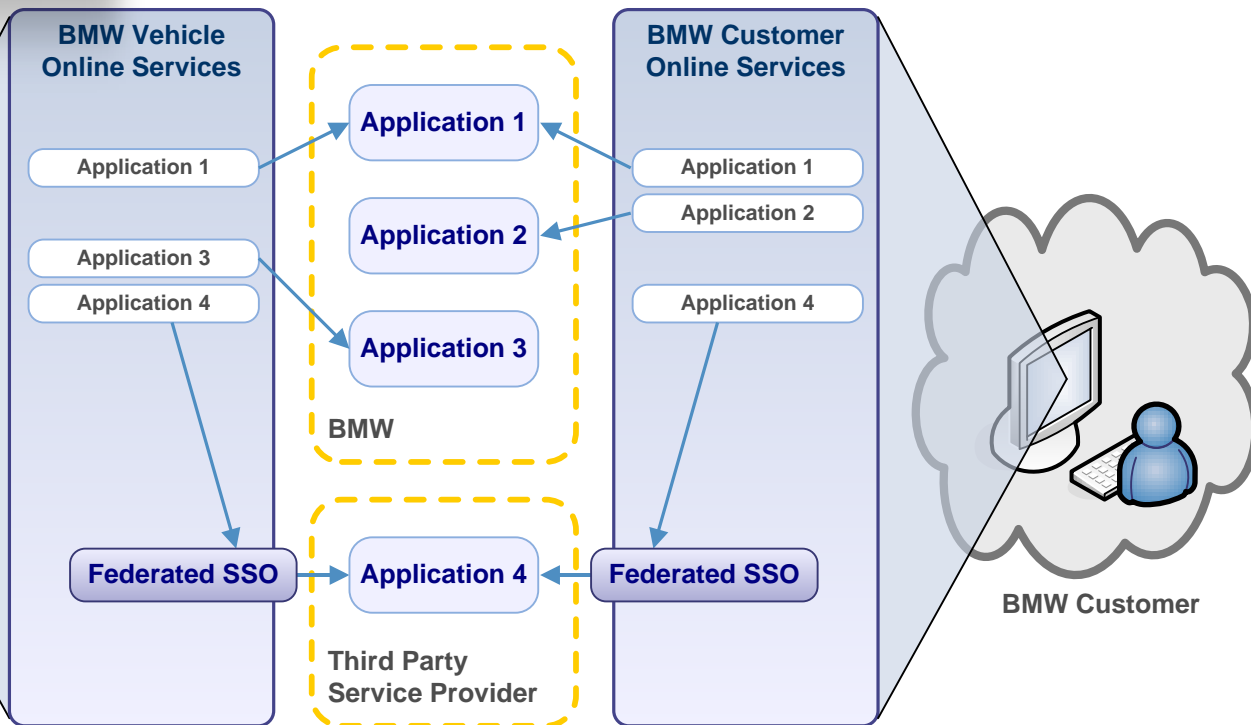# SESAM.
Federation Business Scenarios.

User-centric process integration for Joint Ventures & Cooperations

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Process Step

Process Step

Process Step

Federated SSO

Partner

External Process Step

Process Step

Process Step

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Federation Business Scenarios.

Hosted Services & Applications (e.g. SAAS)

...tion Token
Identity Claim
Group Claims
Custom Claims

User Role Store

Federation Server

Mapping

External Service Provider

FEDERATION TRUST

BMW Federation Services

Locations

Supplier and Partner

FEDERATION

B2X Portals

Windows

Internet B2X-User

Intranet B2X-User

Login with c-Account

Login with q-Account

Internet

LAAS

BMW Corporate Network

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Federation Business Scenarios.

Internal Federation Gateways

B2X User

B2X User

Windows User

FEDERATION TRUST

LDAP

FEDERATION

Locations

Supplier and Partner

B2X Portals

Windows

Mapping

Active Directory

BMW Corporate Network

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Federation Business Scenarios.

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"Federation Services" in Everyday Life.
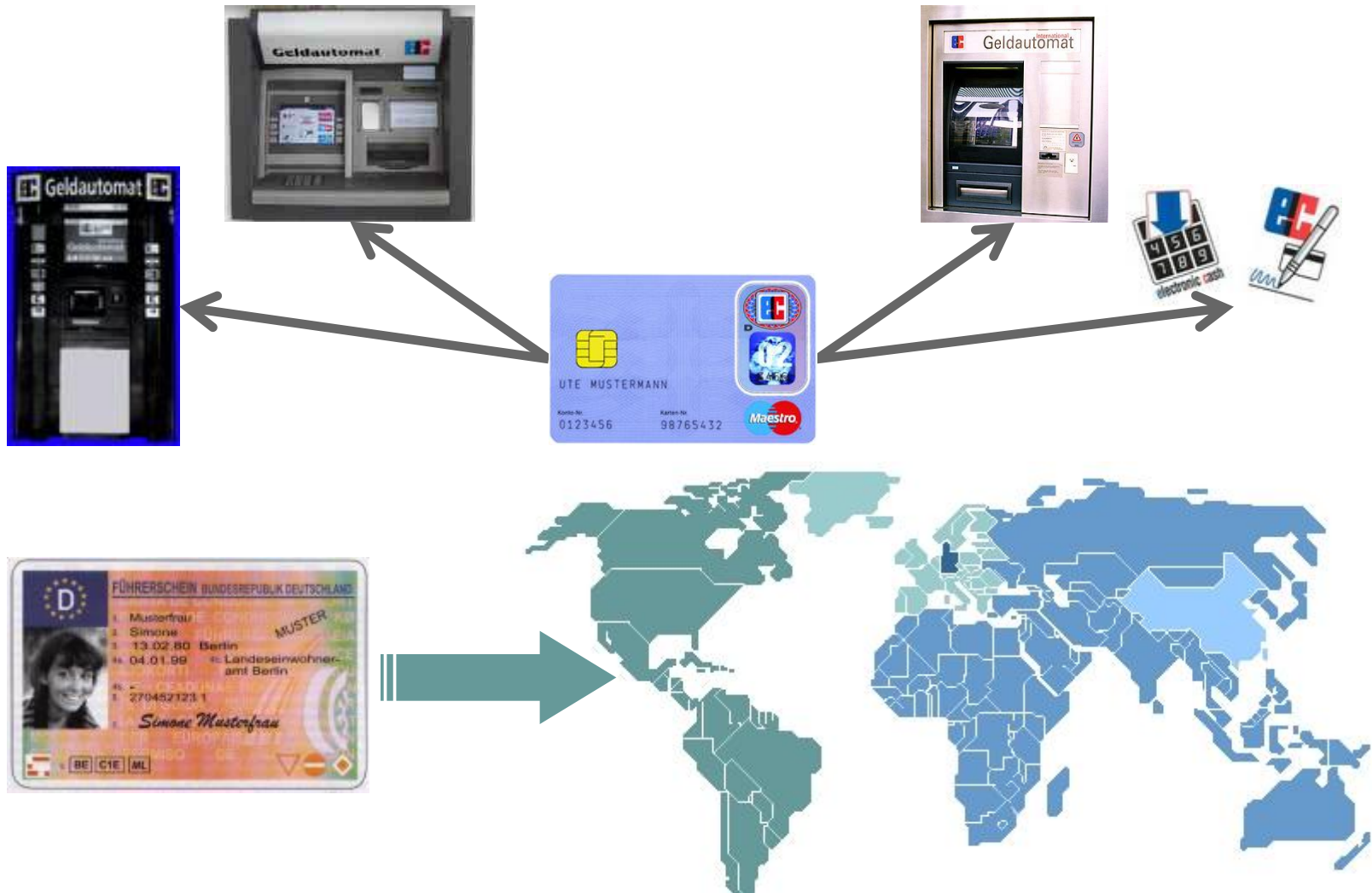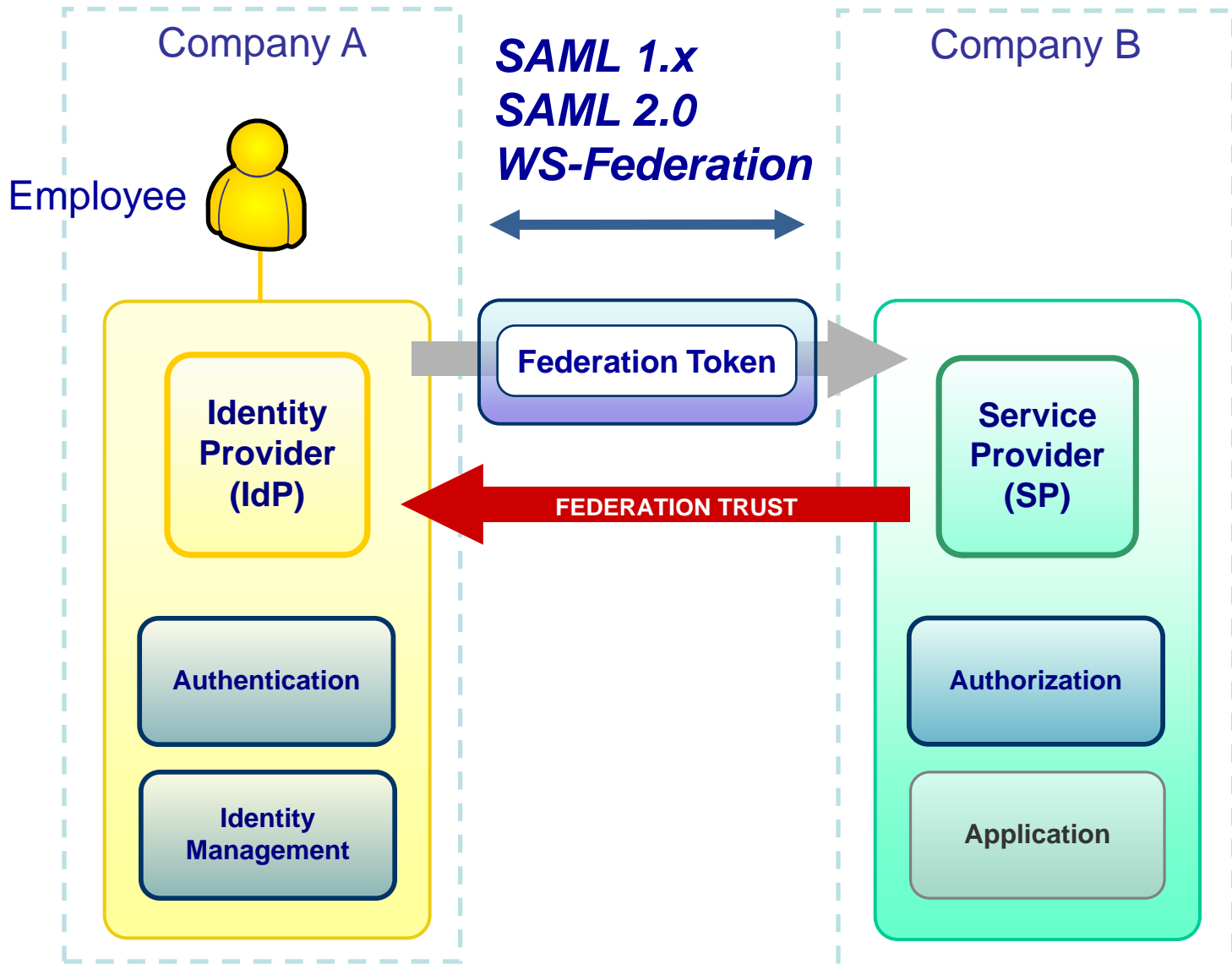
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Speaker Change.

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Federation Services.

Company A

Company B

SAML 1.x
SAML 2.0
WS-Federation

Employee

Federation Token

Identity Provider (IdP)

Service Provider (SP)

FEDERATION TRUST

**Authentication**

Authorization

Identity Management

Application

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Federation Deployment Scenarios.

- **Single IdP to single SP**
- Cooperation
- Joint-Ventures
- SSO Integration of different security infrastructures

- **Many IdP to single SP**
- Collaboration Platforms
- SAAS Platforms

- **Single IdP to many SP**
- Portal Integration of external Services
- External hosted Applications

- **Real Life Deployments**
- Mixed infrastructures with different federation products and protocols
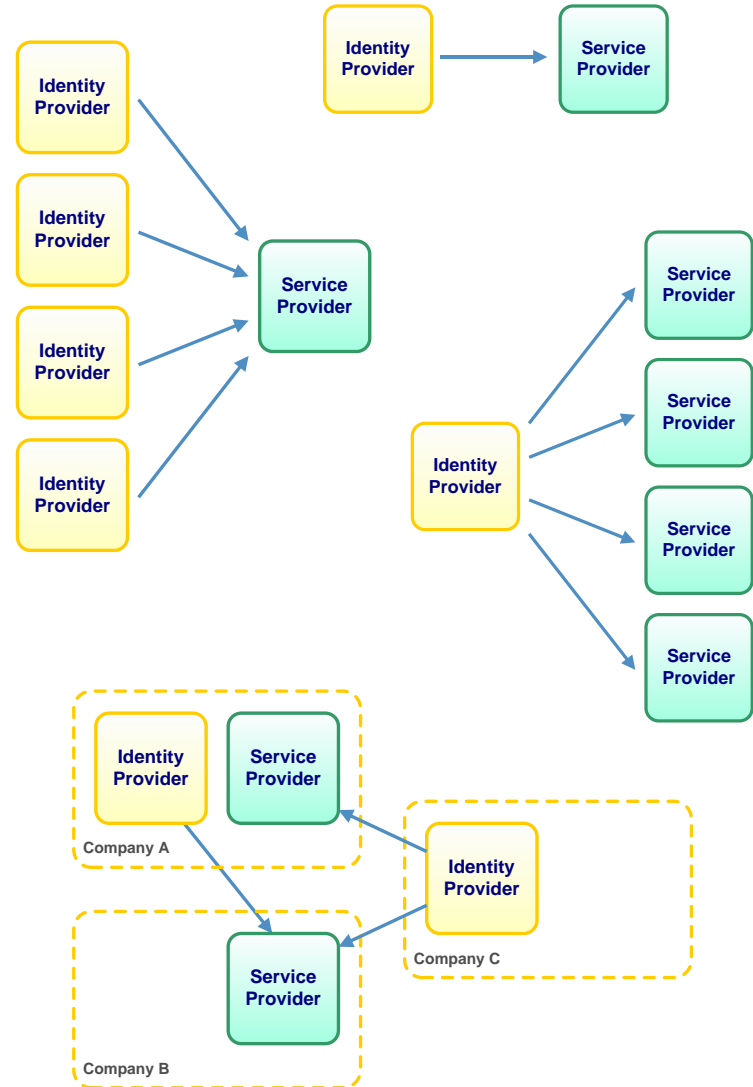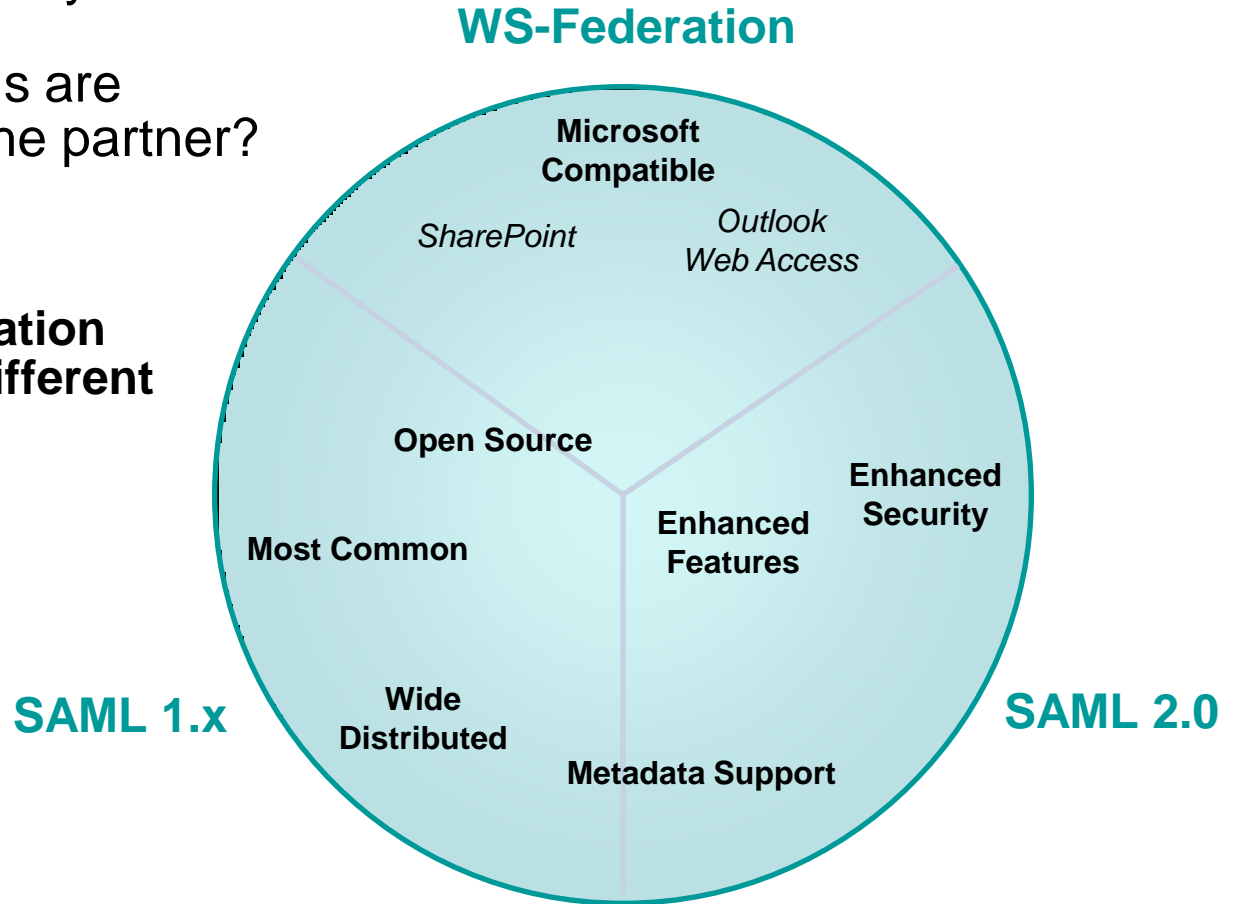
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Requirements and Federation Protocols.

■What are the requirements?
What fits best for your needs?

■What protocols are
supported by the partner?

**Different Federation
Protocols for different
requirements**

WS-Federation

**Microsoft
Compatible**

SharePoint   *Outlook
Web Access*

Open Source

**Enhanced
Security**

Most Common   **Enhanced
Features**

SAML 1.x

**Wide
Distributed**

SAML 2.0

Metadata Support

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Impact on IdM & Supporting Processes.

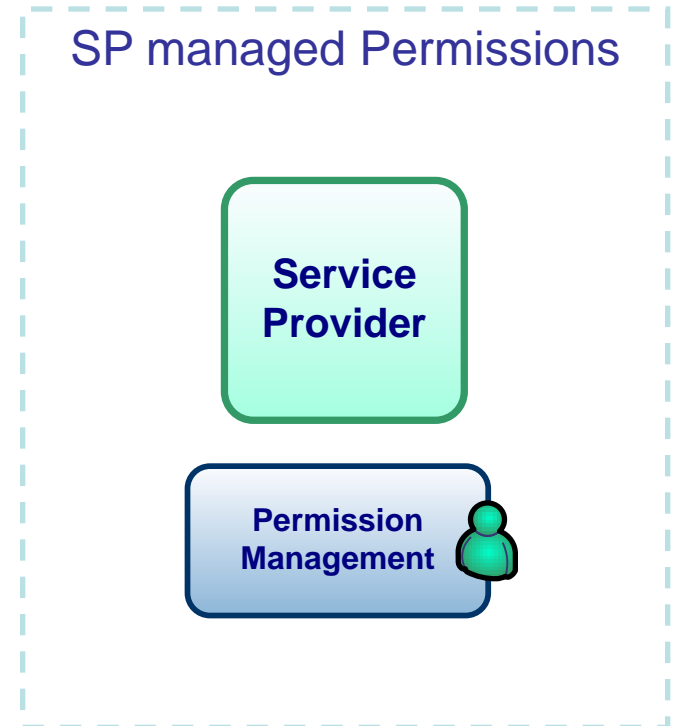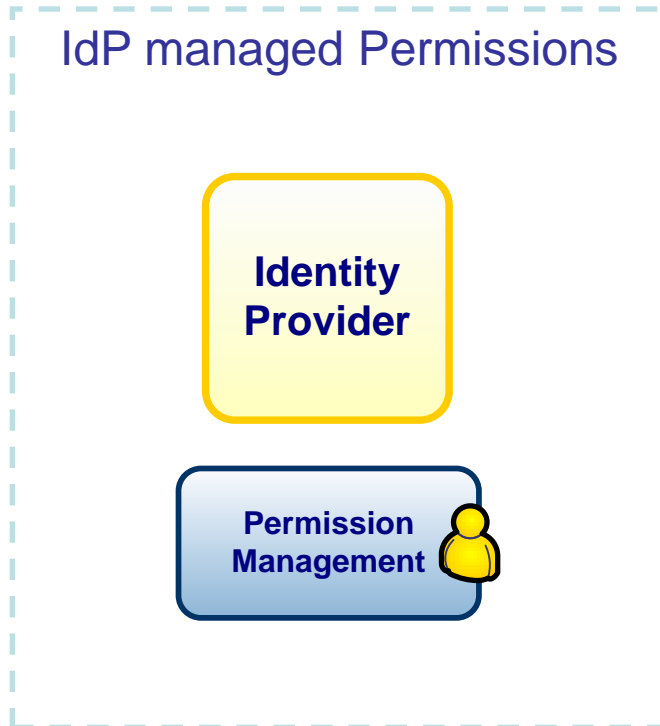- Identity Management

- Application Integration

- Permission Management

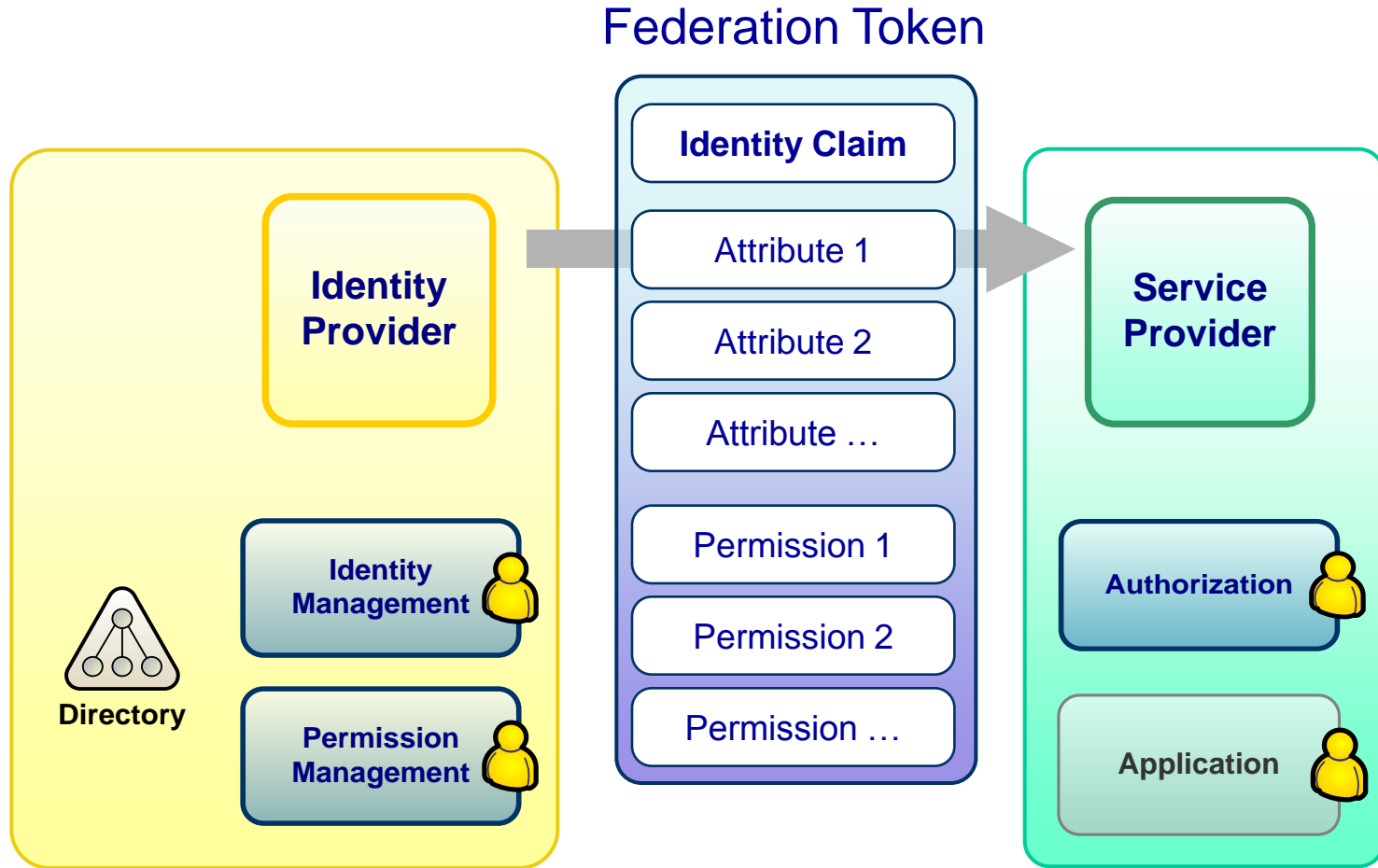- User Helpdesk

- Incident Management

- Auditing

- …

Requires…

Standardizations for
Federation Integration

for efficient
federation
deployments
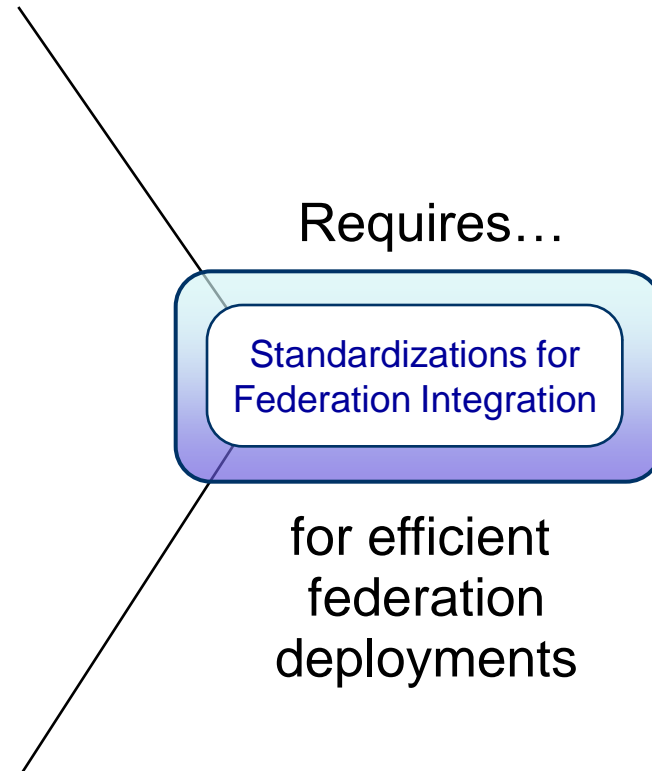
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Federation Patterns.

- Standardization with Patterns

IdP managed Permissions

Identity Provider

Permission Management

SP managed Permissions

Service Provider

Permission Management

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IdP managed Permissions.

Federation Token

Identity Claim

Attribute 1

Attribute 2

Attribute …

Permission 1

Permission 2

Permission …

Identity Provider

Identity Management

Permission Management

Directory

Service Provider

Authorization

Application

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IdP managed Permissions.

Permissions transferred with Federation Token

Impact on IdP side:
- Permissions management for SP applications
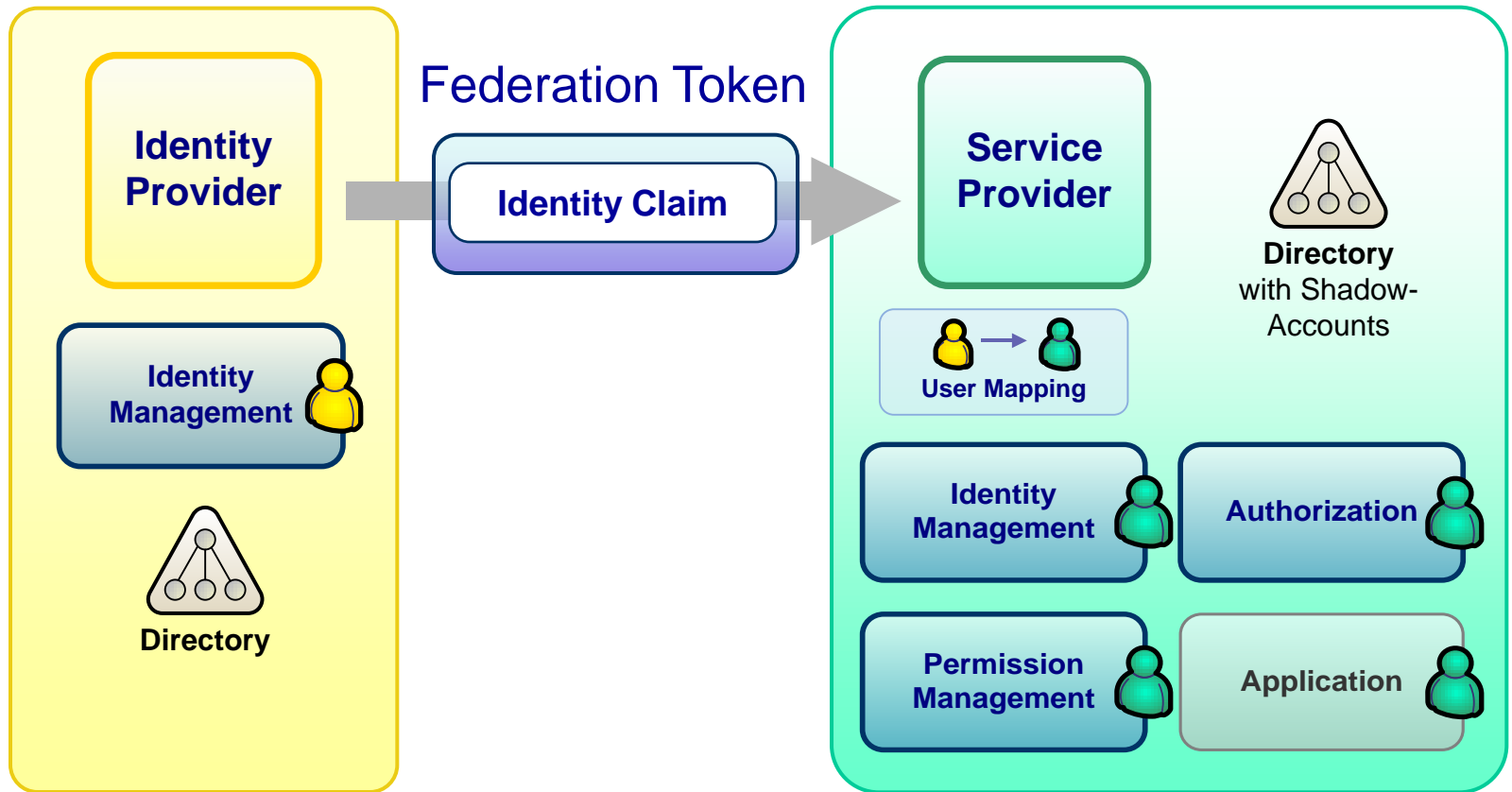
Impact on SP side:
- No external accounts needed
- Requires strong trust relationship to IdP
- EAM infrastructure must handle federated user sessions

Typical scenario:
- External hosted Applications

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SP managed Permissions.

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SP managed Permissions.

Permissions are attached to Shadow Accounts at SP side

Impact on IdP side:
- Only Identity Claim is transferred with Federation Token

Impact on SP side:
- Requires Shadow-Account on SP side
- Permission management at Shadow-Account
- Identity Claim is mapped to Shadow-Account
- How to map identities: Account Mapping, Account Linking, Pseudonym Linking, …

Typical scenario:
- Confidential Collaboration Platforms

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Other Federation Challenges.

- Legal Issues and Requirements

    - Service Quality Contracts
    - Security Policies

- Organizational Issues

    - Support Responsibilities and Incident Management
    - Monitoring of Federation Services
    - How to organize incident management in federation deployments? → Different SLAs/Timezones, …

- Technical Issues

    - How to transport authentication type/level (e.g. strong authentication)?
    - Session Handling (SSO, SLO, Timeouts)
    - How to ensure privacy? (Pseudonyms, Encryption)

SESAM.
BMW Federation Engagements & Projects.

- SESAM is also an official project at the Odette (www.odette.org). SESAM is about:

  - making Federation Services **useful** for the Automotive Industry.
  - agreeing on names, trust, and organisational and legal best practices.

- VTS "Virtual Team Spaces":

  - Integrating internal portals with different security infrastructures and different identity stores.

- External Hosted Dealer Applications

  - Integrating external applications into existing dealer portal, without tight application integration.

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