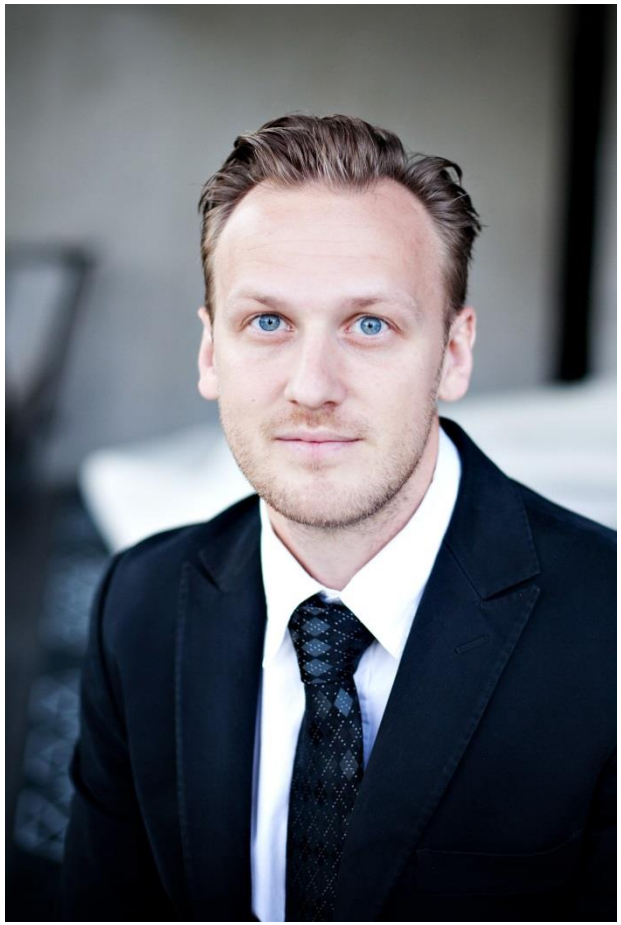
INTEGRATION AND USAGE OF A MIDDLEWARE @ SWAROVSKI IT

BASICS AND CHALLANGES

SWAROVSKI

PRESENTATION
FH KUFSTEIN

24TH OF JUNE 2016 BY PER ANDRÉ



ABOUT PER ANDRÉ

ORIGIN: Stockholm, Sweden

EDUCATION: B.SC. in Informatics@University of Örebro, Sweden 2002.

EMPLOYERS: Phion, Swarovski IT

EXPERIENCE: Integration Developer 2004-2008

Team Leader EAI 2008-2012

Group Leader EAI 2013-2016

LARGE PROJECTS: XI Setup Project, SAP Rollout, EDI, SOA, ESB, Migration Project to central Middleware, Retail Integration and Rollout, Integration of Workday, Integration decentral Warehouse.

TECHNICAL EXPERTICE: Data integration in BI, Extraction ERP, BAPI, IDOC, ABAP, Java, XSLT, XML...

AD Enterprise Application Integration

Manager

Per **Andre**

Members

Birgit **Breitenlechner**

Johannes **Gruber**

Bernhard **Gutwenger**

Elias **Huter**

Matthias **Lechner**

Gerold **Rainer**

Isabell **Schriebl**

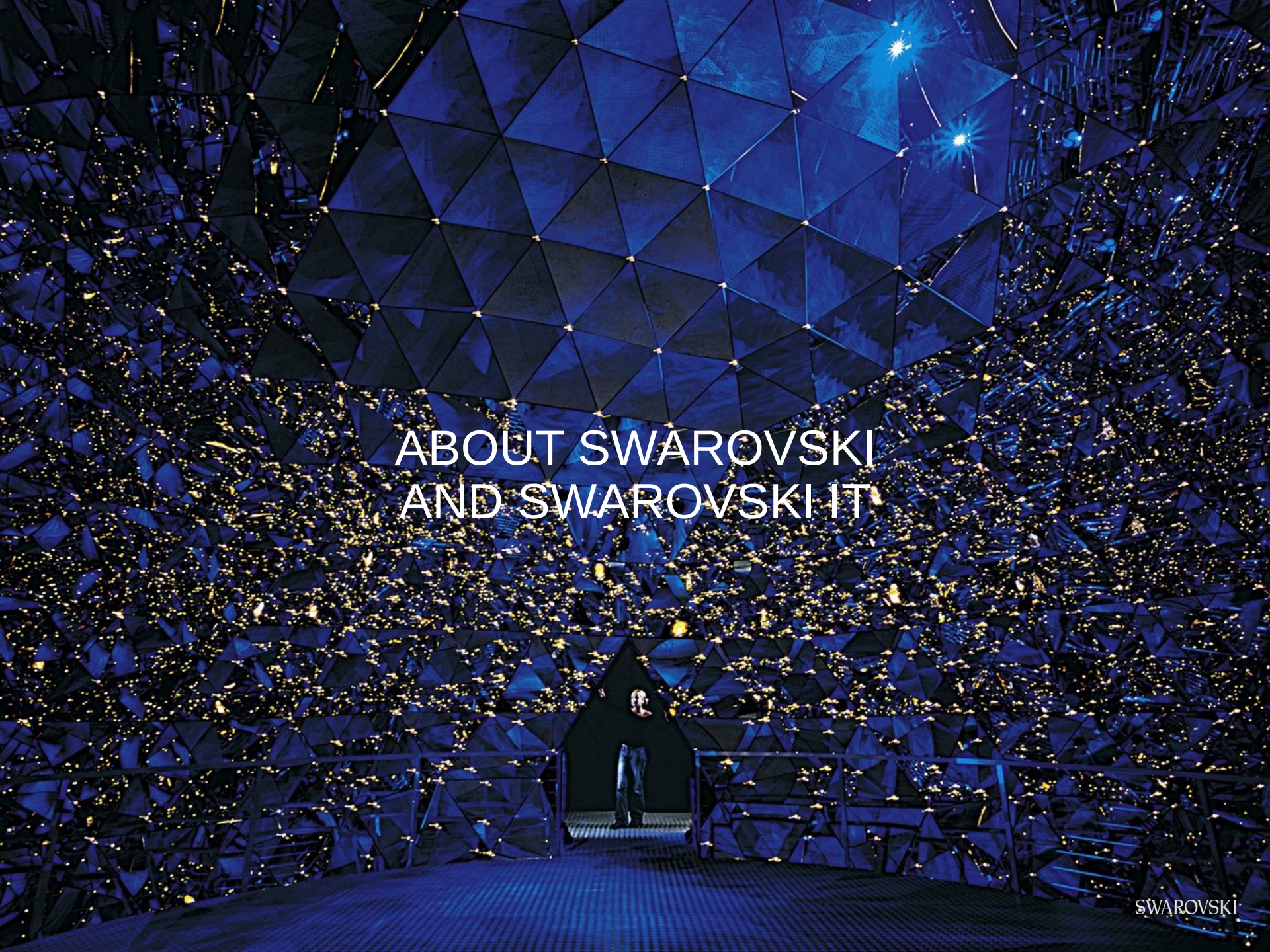
Matthias **Wanner**

Enterprice Application Integration (EAI)

Internal Staff - 8 Persons

External Staff - 3 Persons

Development in the wohle life cycle of a integration.


ABOUT SWAROVSKI
AND SWAROVSKI IT
SWAROVSKI

Who we are

Swarovski Crystal Business

… designs, manufactures, and sells jewelry and high-quality crystal, genuine gemstones, created stones, and finished products such as accessories and lighting solutions

… has production locations in 8 countries

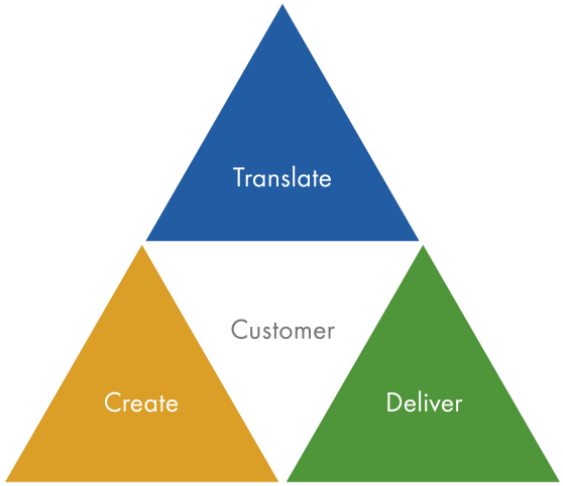
… products are sold in ~170 countries

KEY FACTS 2015

- Revenue: Euro 2,6 billion
- Number of employees: approx. 26.000
- Total number of stores worldwide: approx. 2.680
- Number of stores operated by Swarovski: approx. 1.380
- Number of partner-operated stores: approx. 1.300

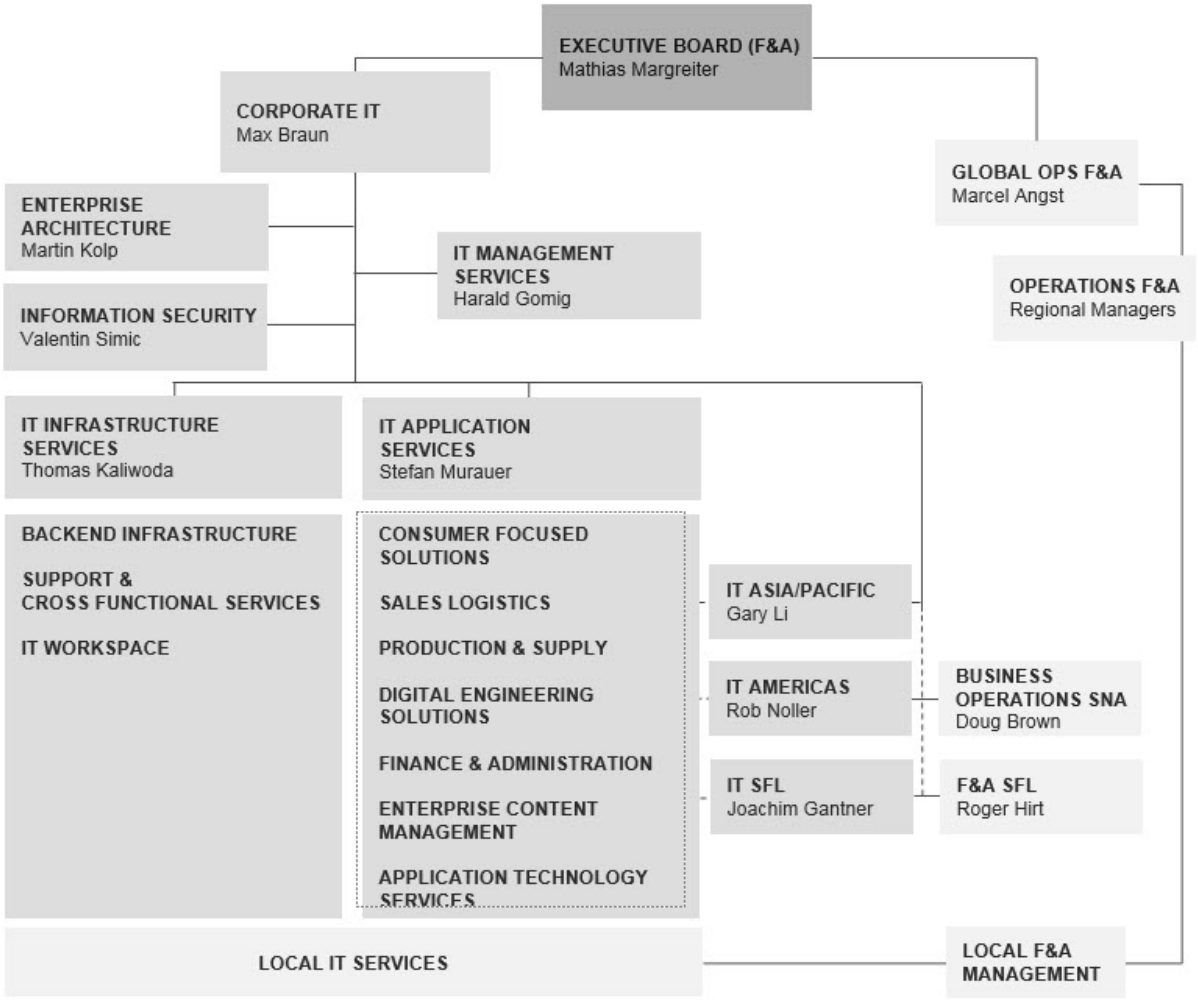
IT CONTRIBUTION

How IT helps to Succeed



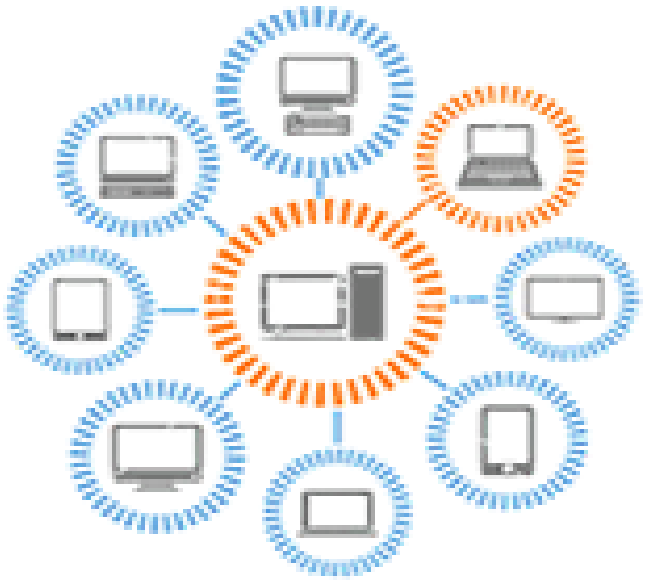
- As **Competence Partner** we **translate** your needs and we **create** IT Services to ‘Enhance and Grow the Business’.
- As **Service Partner** we **deliver** defined IT services with focus on reliability and cost efficiency supporting to ‘Run the Business’.

CORPORATE IT



…a global Organization, 419 CorpIT employees worldwide (+ 86 incl. Local IT)


WHAT IS INTEGRATION
SWAROVSKI

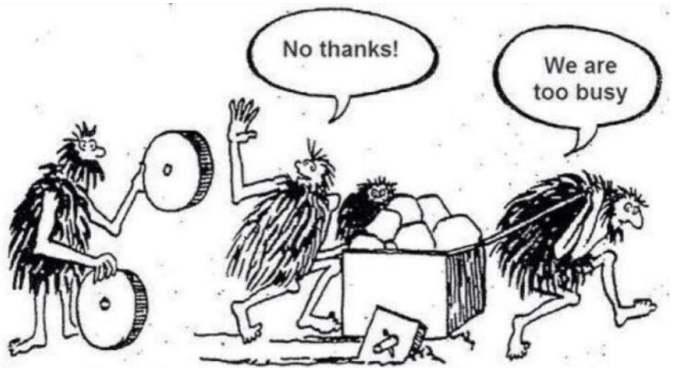


Definition of Integration

"making independently designed applications, data, services

and other IT resources, work together.„ - Gartner

“systems integration is the process of linking together different computing systems and software applications physically or functionally” – Wikipedia (University of Georgia)



(Accenture,2002)

High

Business Value of Integration

Low

Complexity of Integration

High

Data Transport

I´m moving data...

Data Integration

...to synchronize my systems...

Application Integration

...leverageing functionality in my applications...

Process Integration

...to create new process and services to support my business needs...

Collaboration

...combining the application, data and human resources in my enterprise and trading partners...

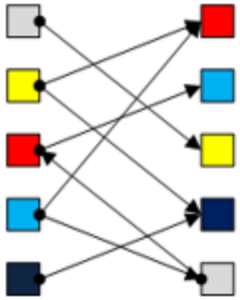
Ubiquitous Integration

...anywhere, anytime, and through any standard means.

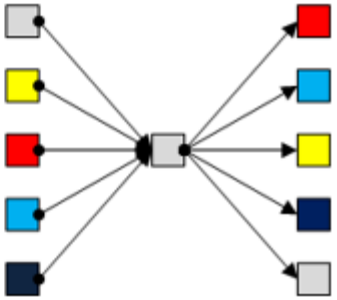

MEDIATED COMMUNICATION
WITH SAP PROCESS
ORCHESTRATION
SWAROVSKI

What is Mediated Communication?

Integration Nightmare



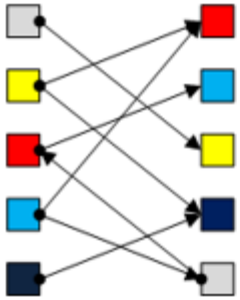
Mediated Communication



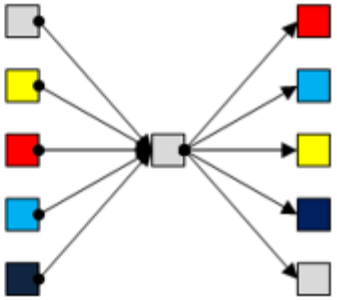
- Information exchange indirectly through a mediator
- Message Oriented Middleware (MoM) – Swarovski uses SAP Process Orchestration (PO)
- Loose coupling of communication from a service

Why Mediate Communication?

Integration Nightmare



Mediated Communication

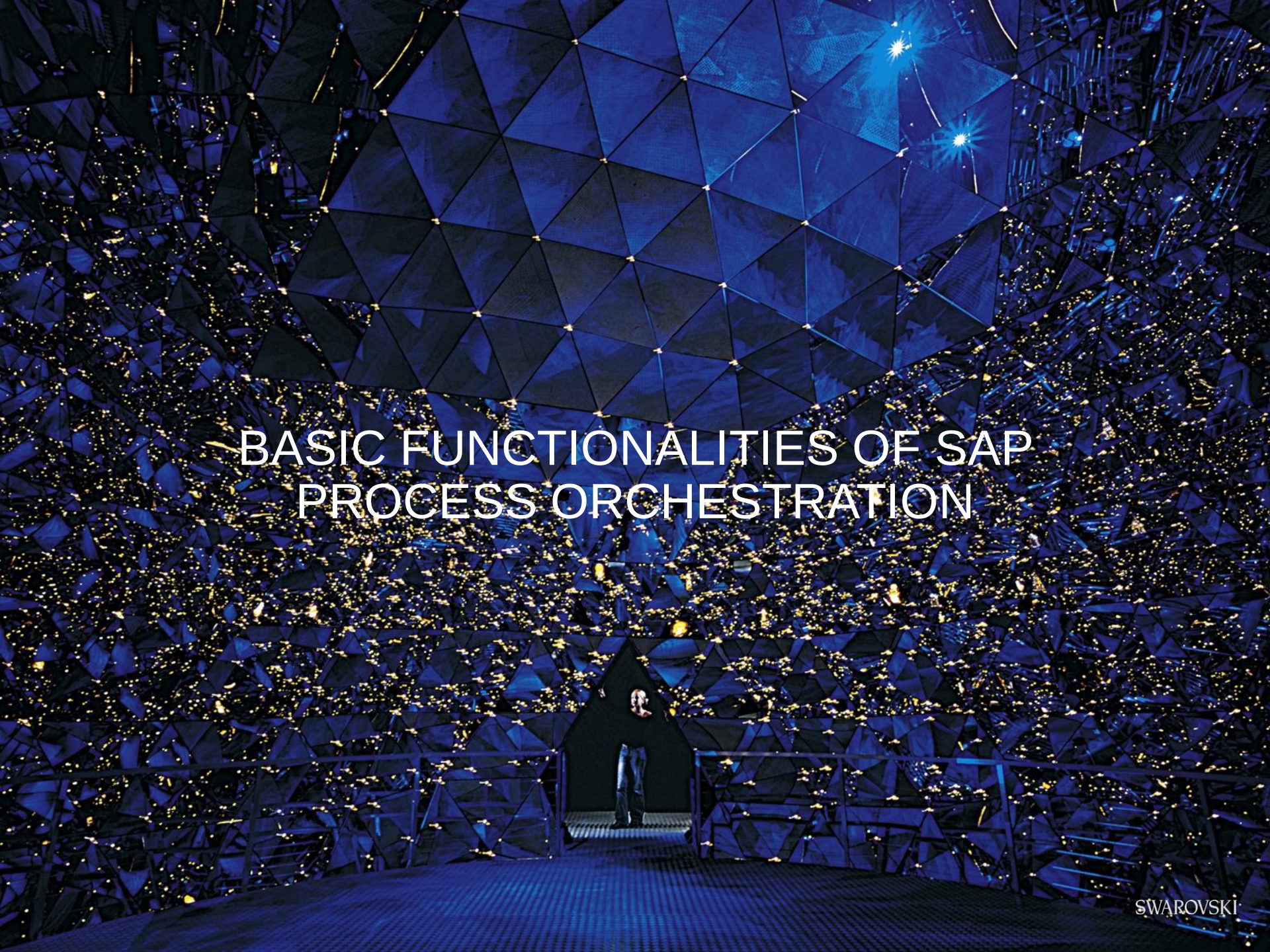


- Make business applications more agile and scalable
- Improve manageability of implementation and operation of service interfaces
- Provides possibilty for reusability of service interfaces
- Toolbox for various communication through adapters

What is Service Oriented Architecture (SOA)?

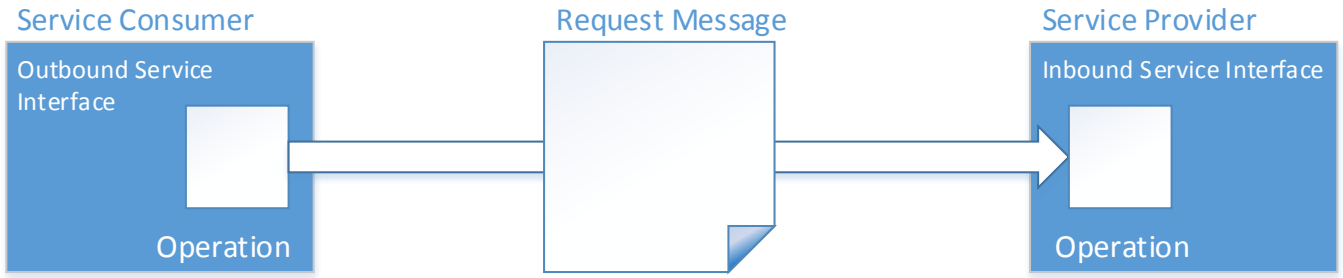
-What is a service and what is it used for?

-http://www.youtube.com/watch?v=A3_QlYJRVvk

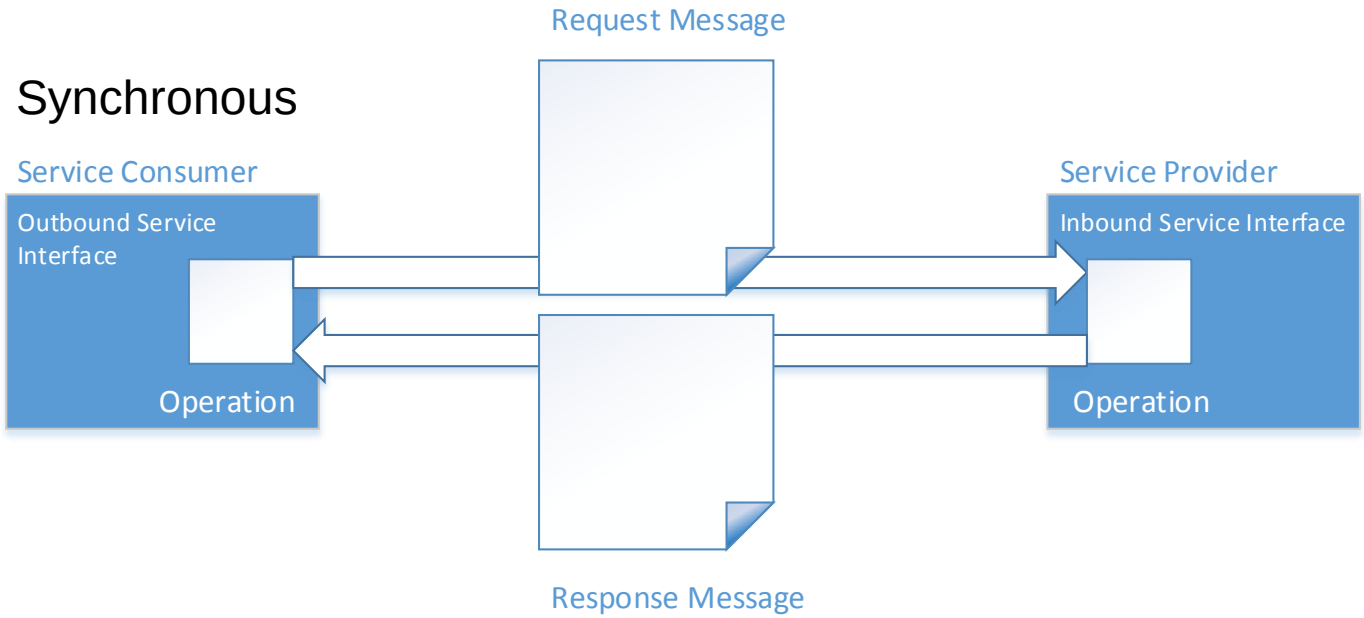

BASIC FUNCTIONALITIES OF SAP
PROCESS ORCHESTRATION
SWAROVSKI

Service Interfaces and Messages

Asynchronous



Synchronous

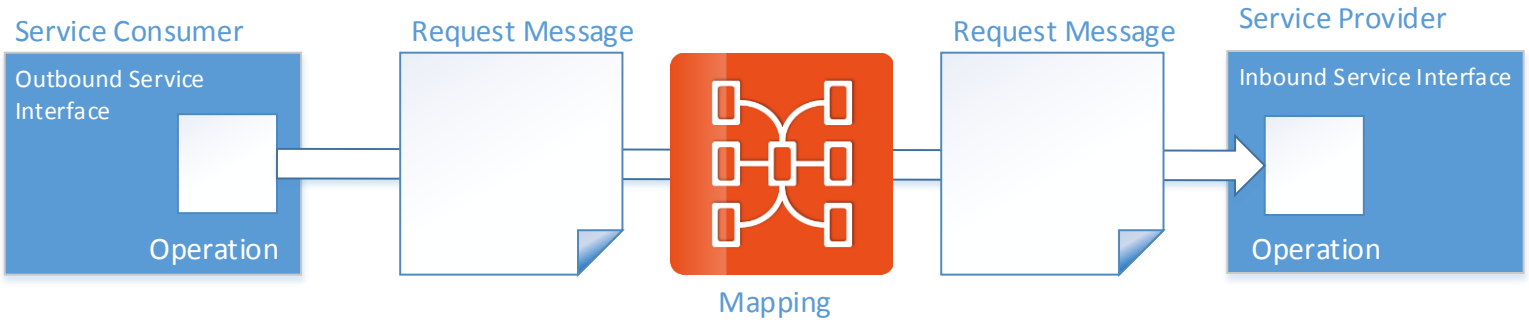


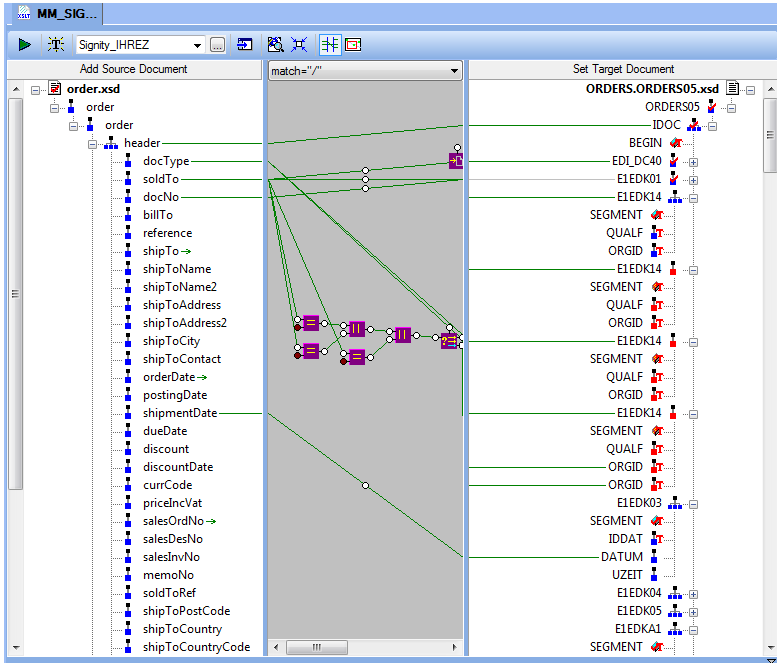
Service Interface is a set of functions provided or used by a service and are based on WSDL.

Each Service Interface can have one or more **operations**, which make use of a **message**.

Service interfaces has either a **synchronous** and a **asynchronous** mode.

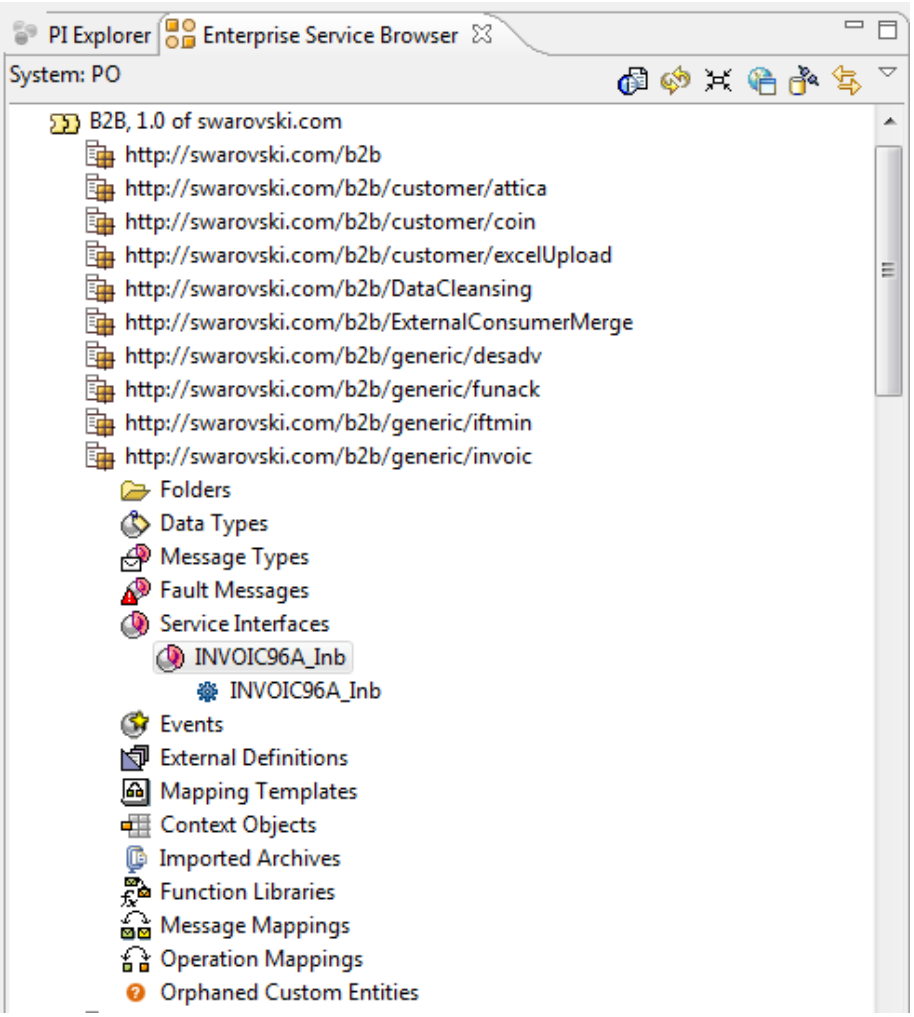
Message Mappings





Transformation between different structured messages

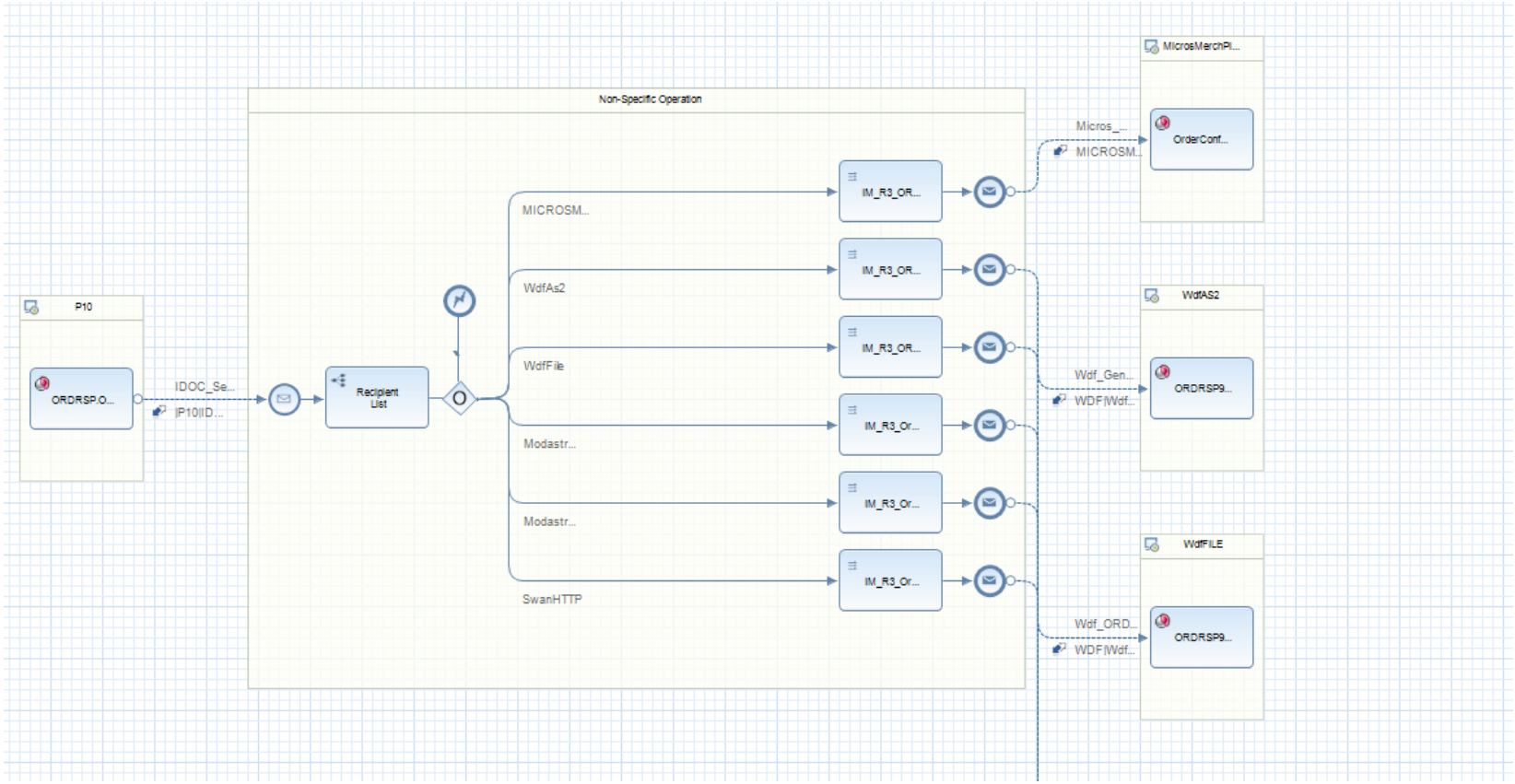
Swarovski uses mainly XSLT but also Java mappings.



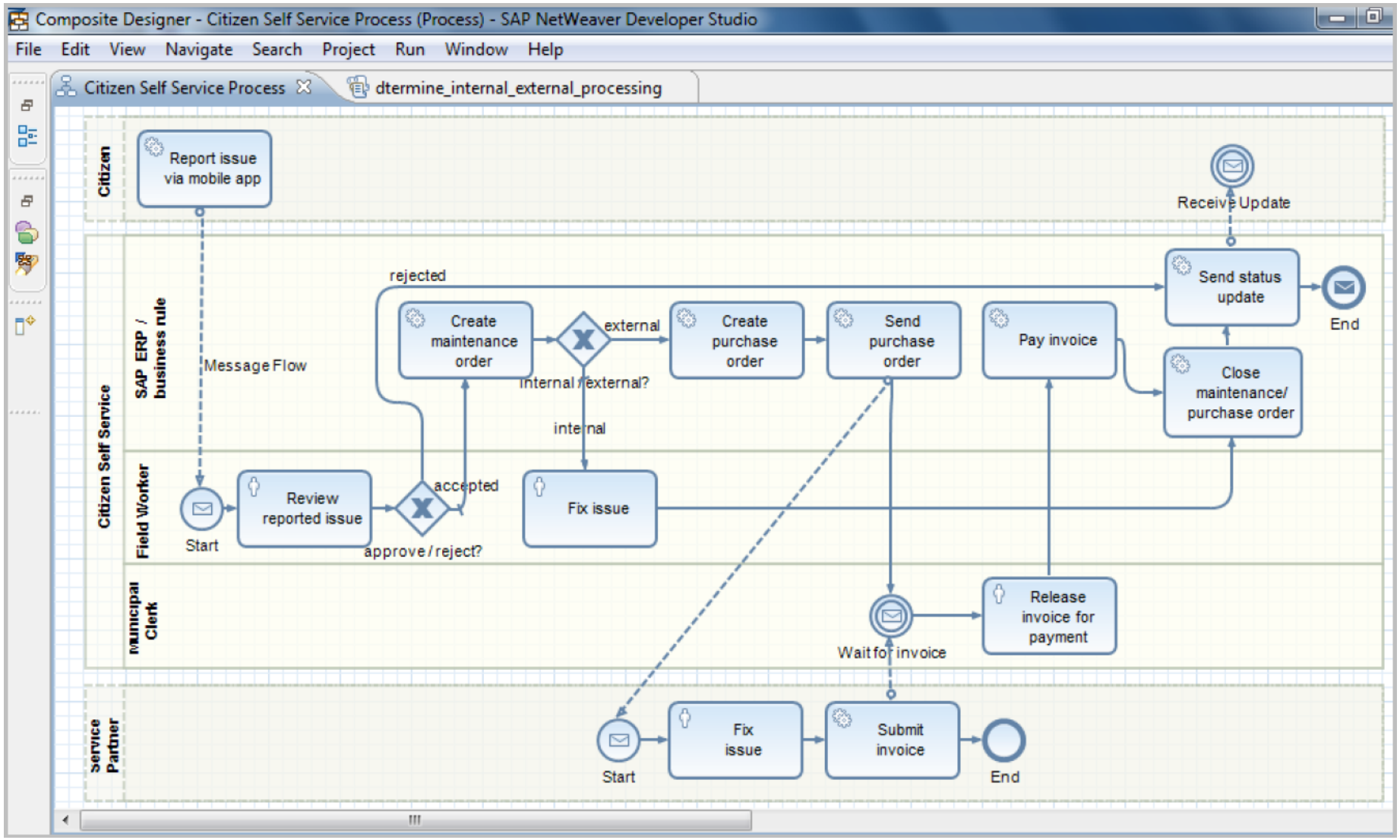
Enterprise Service Repository

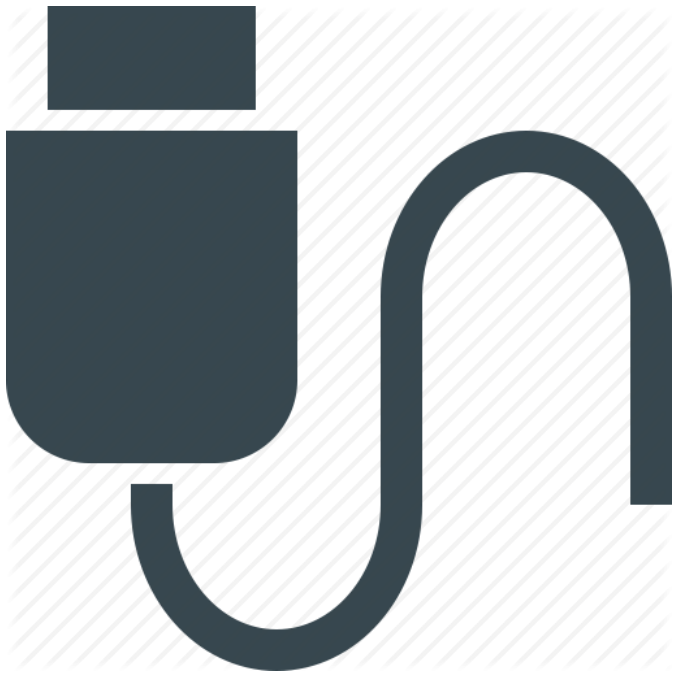
All designed objects are saved in the Enterprise Service Repository (ESR). All objects are organized in software components and products.

Integration Flows (iFlow) - Routing



BPM


Composite Designer - Citizen Self Service Process (Process) - SAP NetWeaver Developer Studio
File Edit View Navigate Search Project Run Window Help
Citizen Self Service Process
dtermine_internal_external_processing
Citizen
Report issue via mobile app
Receive Update
Citizen Self Service
SAP ERP / business rule
Message Flow
rejected
Create maintenance order
external
internal / external?
internal
Create purchase order
Send purchase order
Pay invoice
Send status update
End
Close maintenance/ purchase order
Field Worker
Start
Review reported issue
accepted
approve / reject?
Fix issue
Municipal Clerk
Wait for invoice
Release invoice for payment
Service Partner
Start
Fix issue
Submit invoice
End

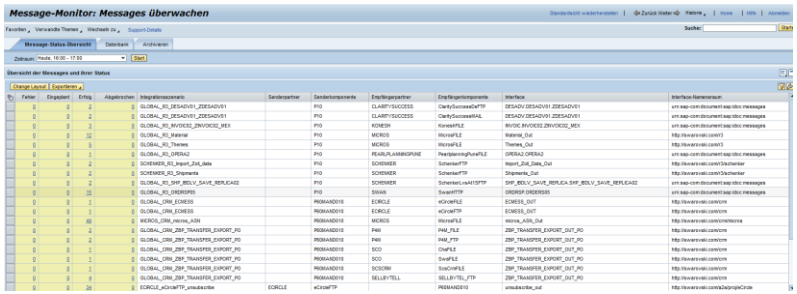


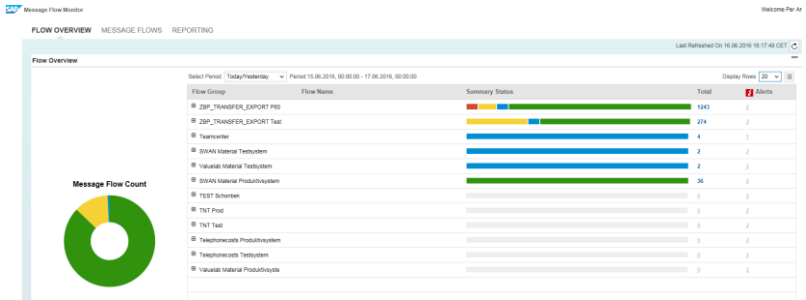
Adapters – How messages are exchanged

- There are many different ways to exchange data.

SAP Process Orchestration supports a number of Adapters: RFC, SAP Business Connector, File/FTP, JDBC, JMS, SOAP, Marketplace, Mail, RNIF, CDIX, IDoc, HTTP, ...

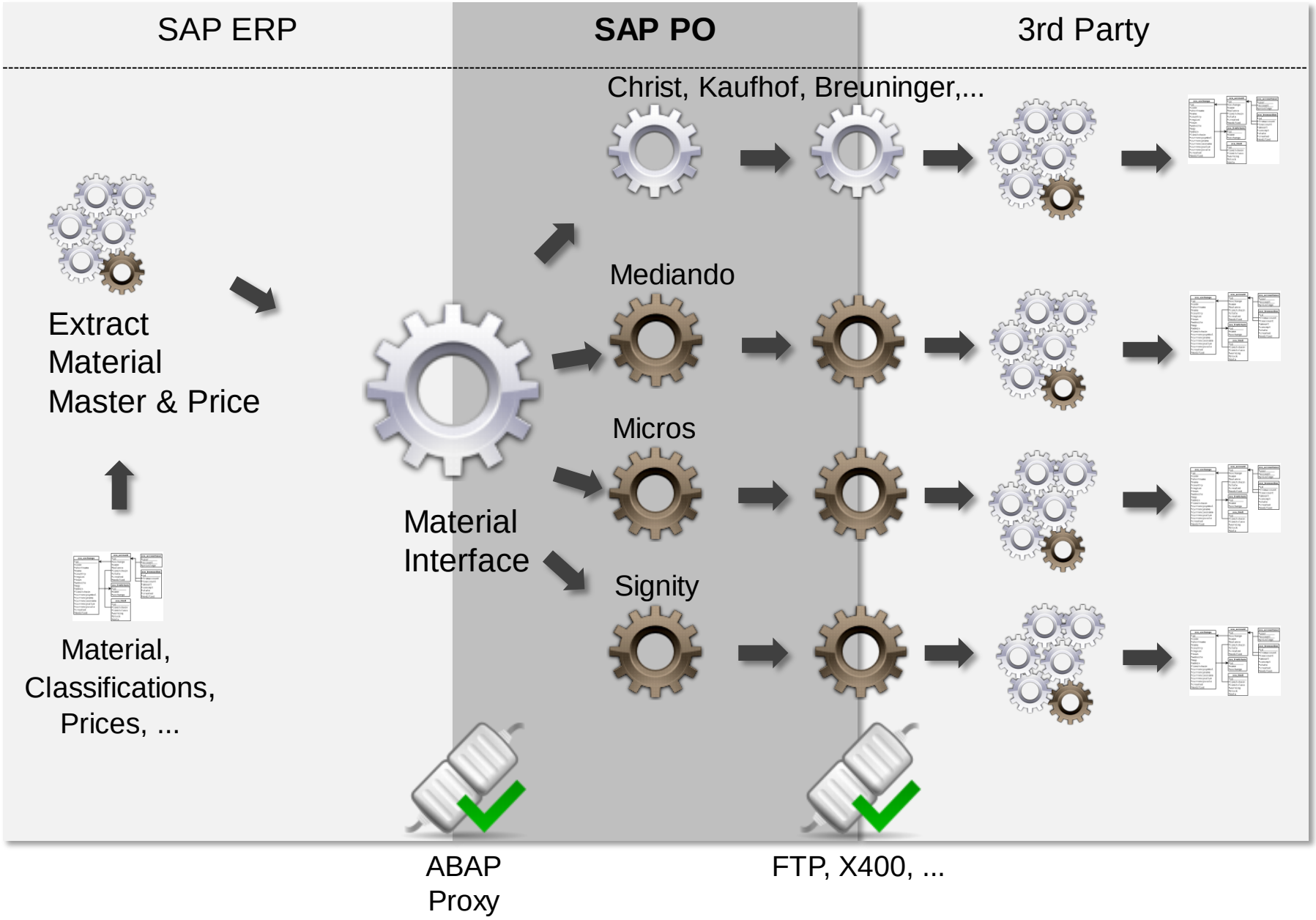
Operating a Middleware@Swarovski



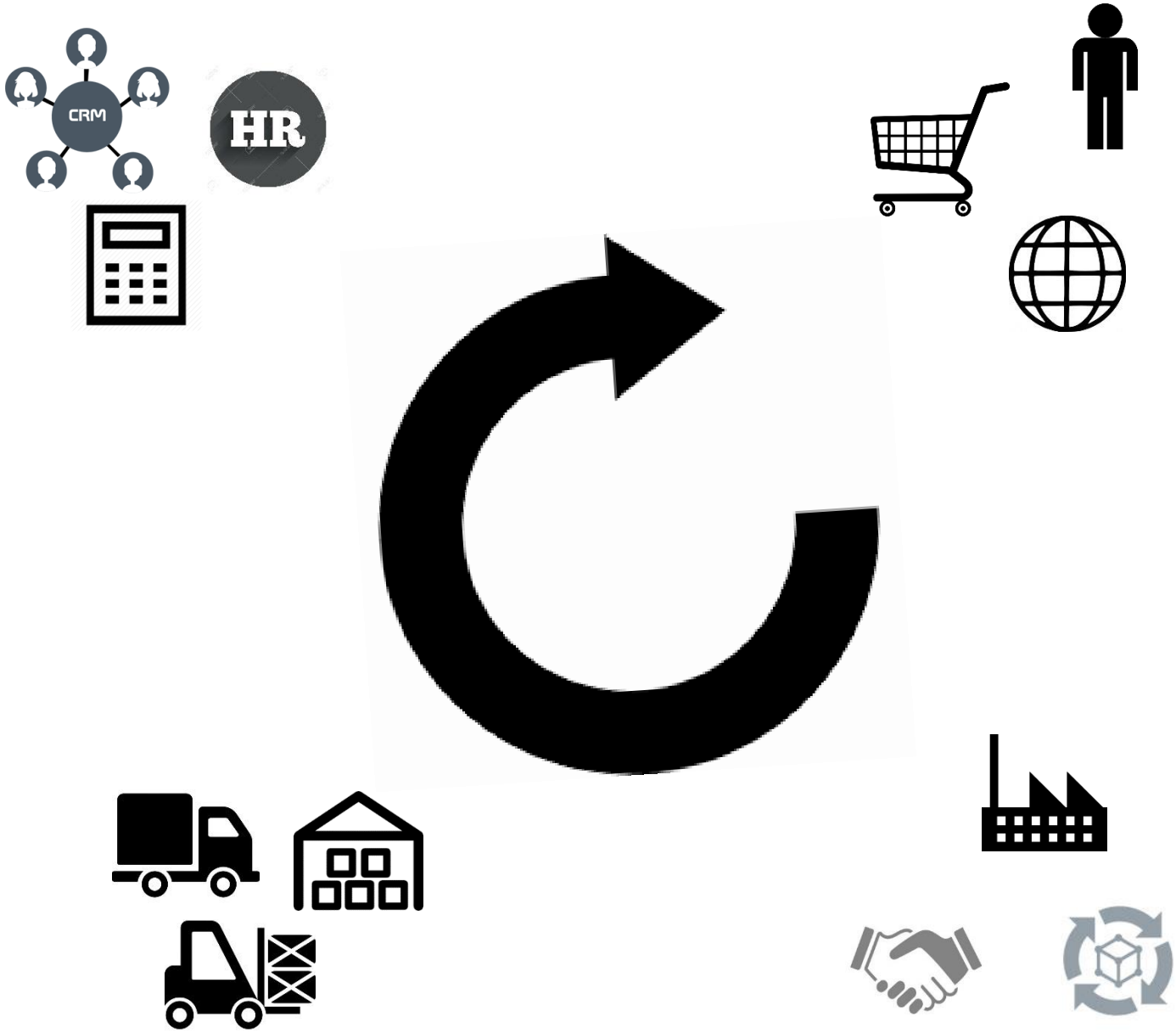


Various Monitors delivered upon installation. Swarovski Uses mainly runtime workbench, message Flow Monitoring and PIMON in Solution manager.

SWAROVSKI


SAP ERP
SAP PO
3rd Party
Christ, Kaufhof, Breuninger,...
Mediando
Micros
Signity
Extract
Material
Master & Price
Material
Interface
Material,
Classifications,
Prices, ...
ABAP
Proxy
FTP, X400, ...


CHALLANGES
IN INTEGRATION PROJECTS
- HOW DOES INTEGRATION WORK
SWAROVSKI


CRM
HR

How process integration works

1. Business Process

2. Business Process enriched with technical aspects

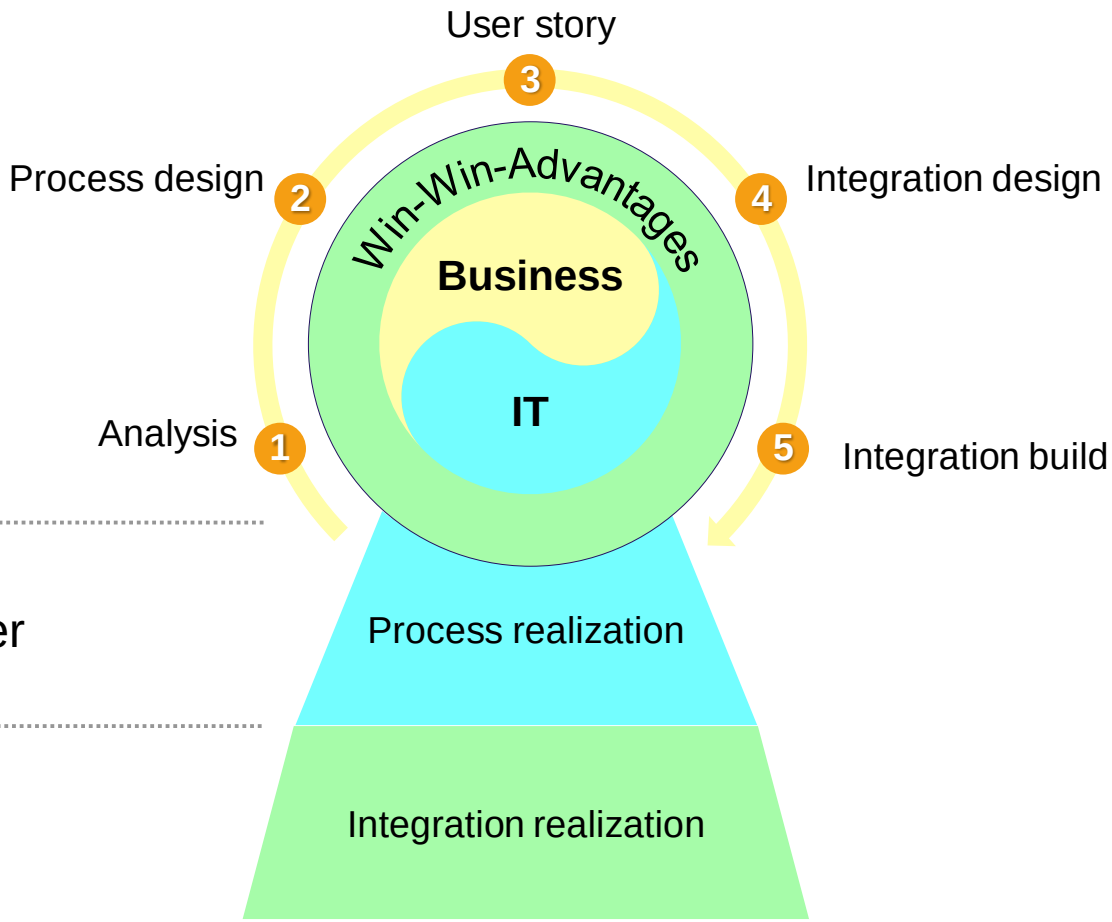
3. Integration of Systems

“The process of process integration…“

Process Layer

Application Layer

System Layer



Major Challanges in Integration

- Integration can become complex mostly when
  - Not properly engineered (requirements unclear, process not considered)
  - Systems do not always offer sufficient way to integrate
- Most integration done at Swarovski are fairly simple.
- Only EDI are following standardized formats and transfer methods.
- Modern systems provide a wide verity of communication methods and formats. Necessary to define own best practices and standards to be used.


SUMMARY & QUESTIONS
SWAROVSKI

Summary

- Introduction to Swarovski
- What is an middleware?
- Major functionalities of a middleware
- Challanges in Integration

Questions?

Thank you!

SWAROVSKI