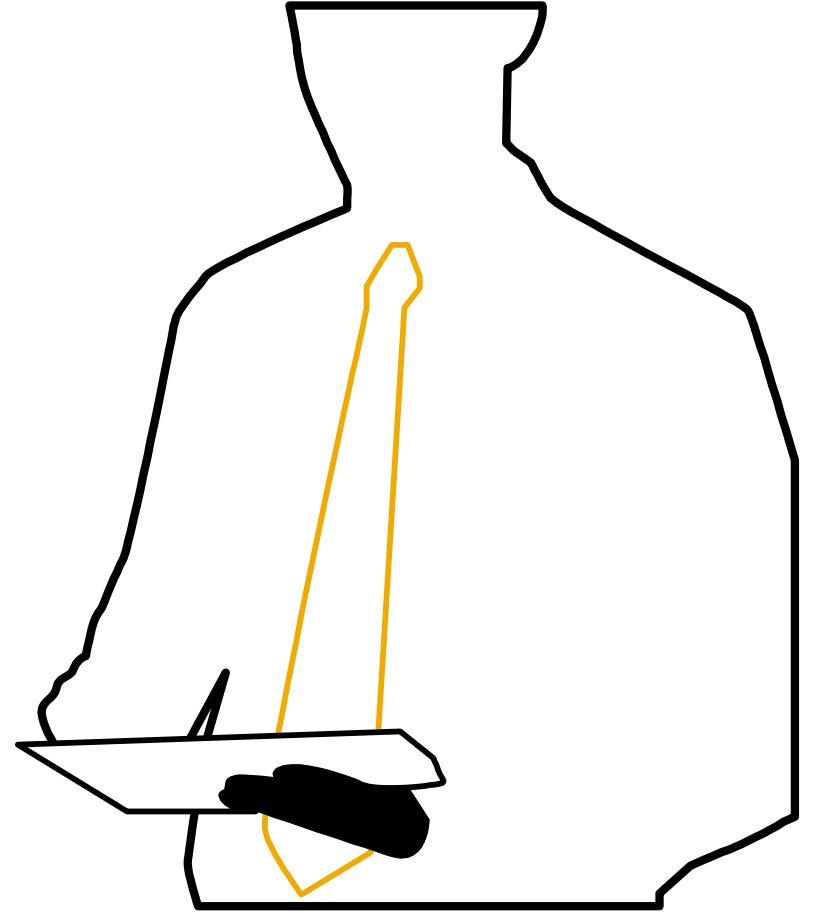# Job Management
in SAP Solution Manager

Agenda

- **Introduction**

- **Job Governance**

- **Job Scheduling**

- **Job Monitoring**

- **Job Reporting**

Public   2

Introduction

Typical Situation…Questions

I have found job "WDS_TRQ" in the system. What is it doing? Who is the owner? What if it cancels?

Everybody here is scheduling jobs in our SAP systems. How can I control this?

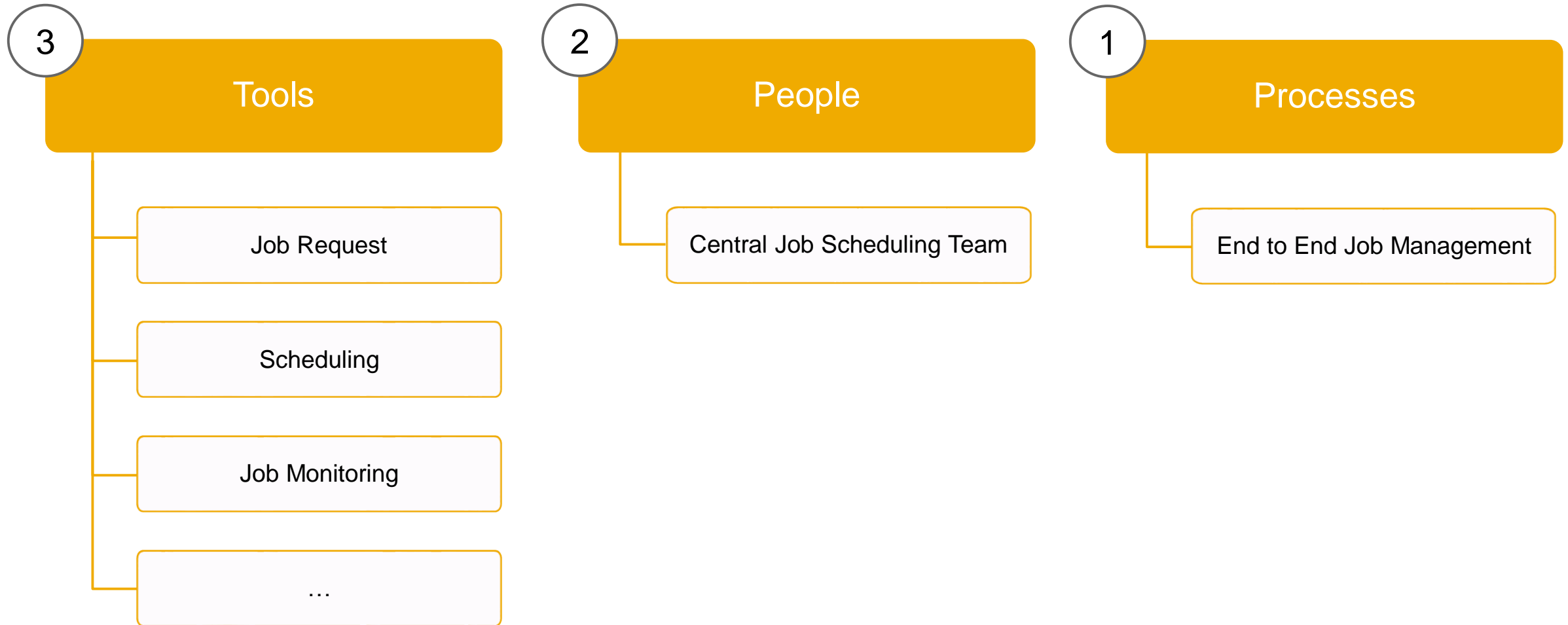The sales order processing has failed and nobody noticed. How can I be informed if this happens again?

Job Management is…

… an end-to-end operations standard provided by SAP for:

- Requesting, changing or deleting jobs

- Documenting jobs

- Scheduling jobs

- Monitoring and alerting

- Job Reporting

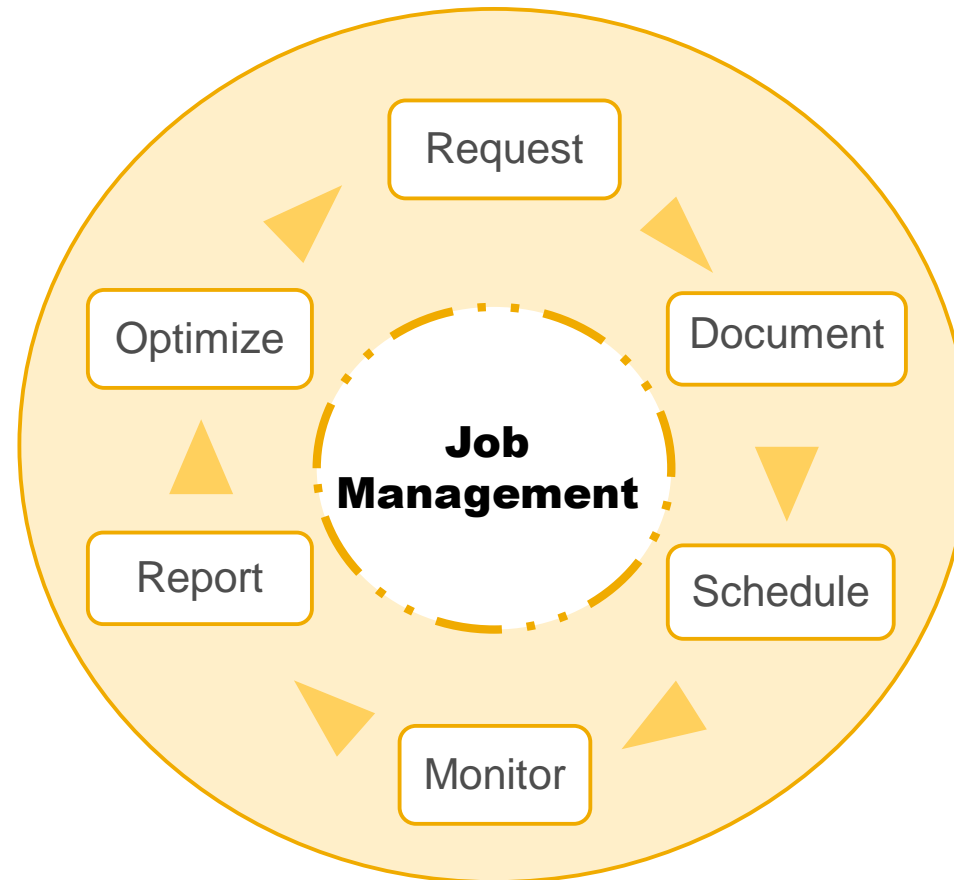# Different Aspects of Job Management

3

Tools

Job Request

Scheduling

Job Monitoring

…

2

People

Central Job Scheduling Team

1

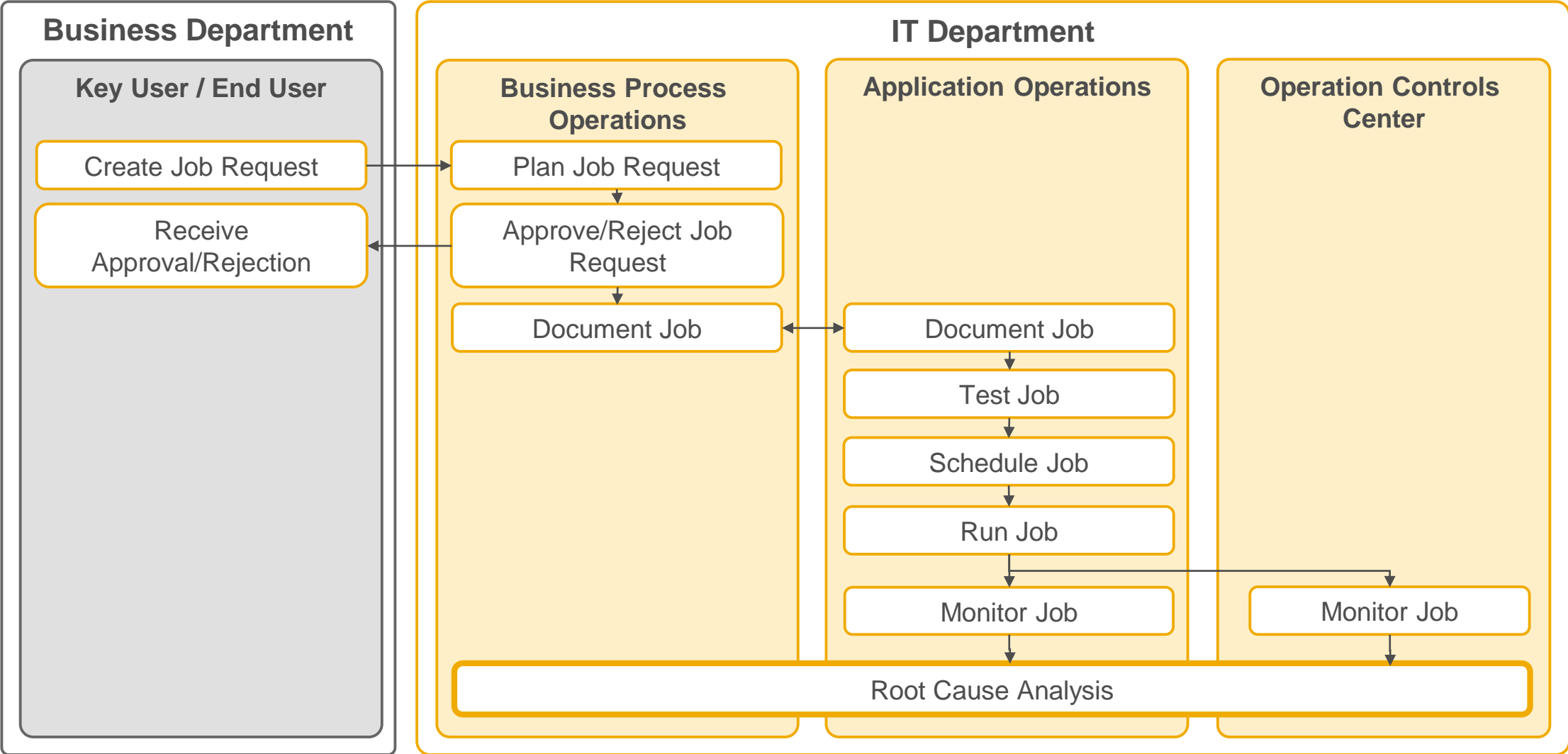**Processes**

End to End Job Management

Job Management End-to-End Process

Manage all parts of the E2E process in one work center in SAP Solution Manager!

Job Management – Process View

Business Department

IT Department

Key User / End User

- Create Job Request
- Receive Approval/Rejection

Business Process Operations

- Plan Job Request
- Approve/Reject Job Request
- Document Job

Application Operations

- Document Job
- Test Job
- Schedule Job
- Run Job
- Monitor Job

Operation Controls Center

- Monitor Job

Root Cause Analysis

Typical Situation…Answers

The **"Job Documentation"** stores all job relevant information like job description, contact persons, attachments and more.

The **"Job Request"** is used in a formal process to request the scheduling of jobs. This process includes approval, documentation and monitoring setup for the job.

"Job Monitoring" allows you to monitor jobs in your whole SAP landscape! Use metrics like status, duration, start- & end delay and more!

What are the benefits of using Job Management?

|			
Visibility	**Job Documentation**	Standardized Documentation	Single Source of Truth
		Avoid outdated Jobs	All Job related Data
Efficiency	**Scheduling SAP BPA**	Automate job processing	Event driven scenarios
		Cross System Scheduling	Control end user jobs
Supervision	**Job Monitoring**	Ensure job completion	Alerts & Notification
		Link to business processes	Numerous Metrics
Governance	**Job Request**	Standardized Request Form	ChaRM Integration
		Formal Process	ITSM Integration
Clean-Up	**Health Check**	Observe workload distribution	Identify old jobs
		Avoid unnecessary jobs	Identify job related issues

Job Governance: Requesting Jobs

Job Management
Process View
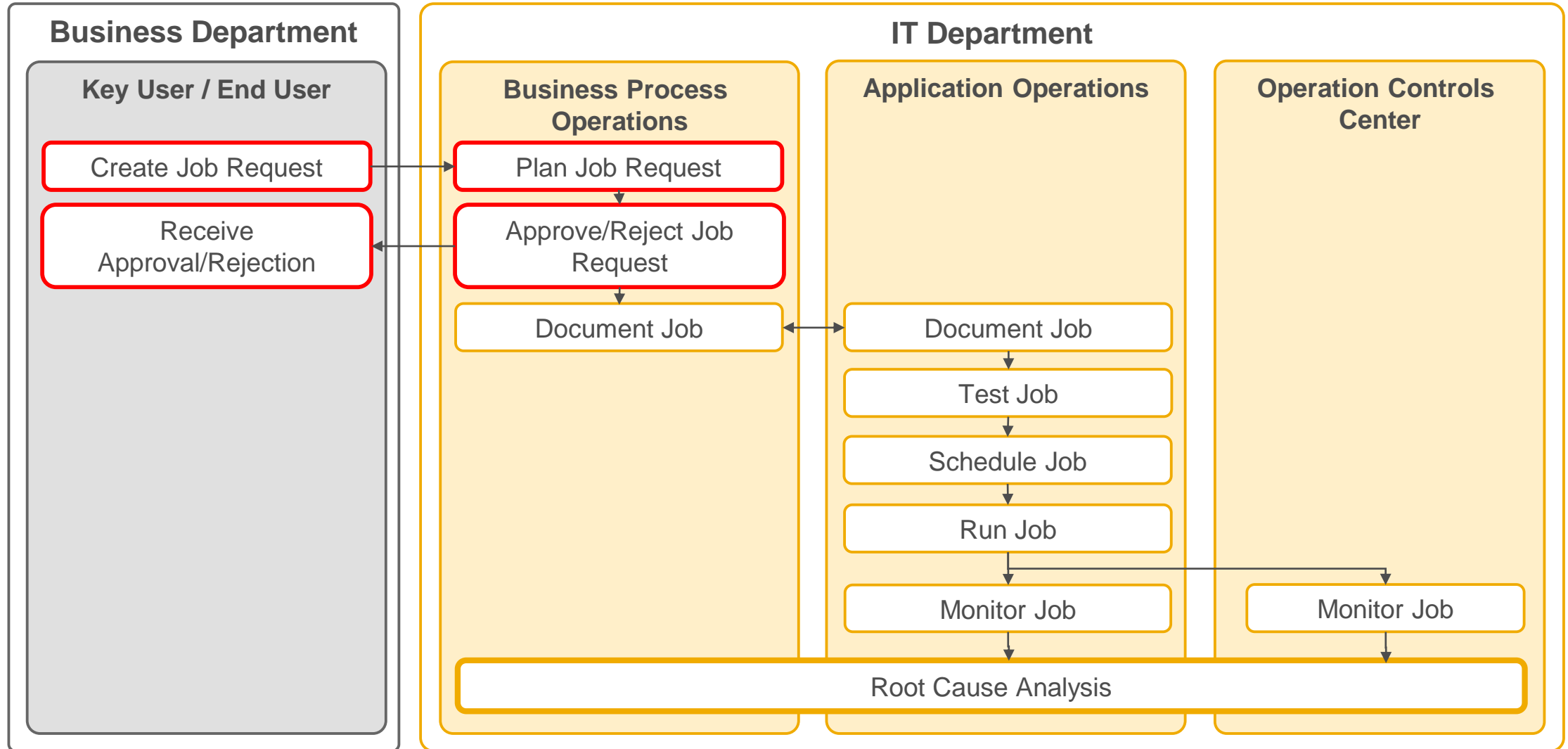
Job Request Process – Work Flow
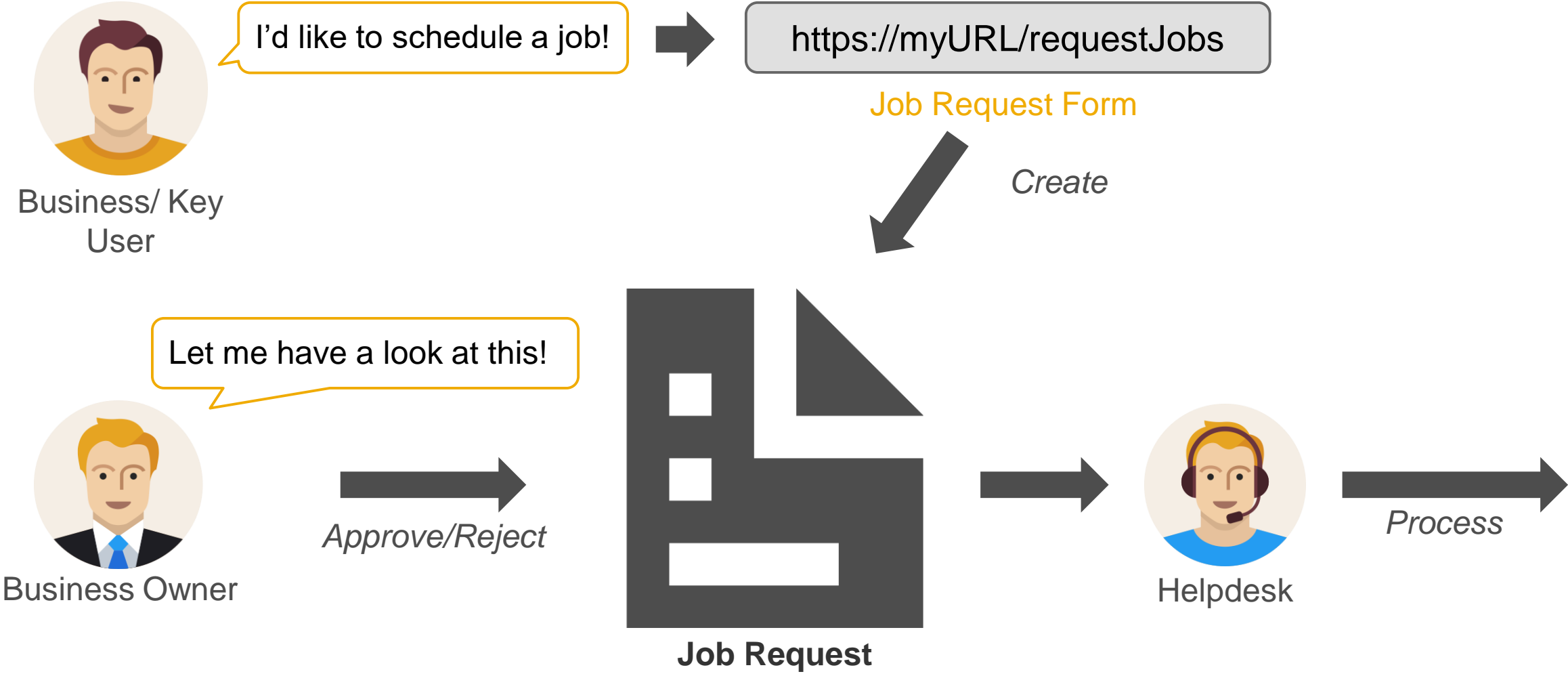
Job Request – Motivation

- **Do not let end-users schedule periodic jobs**

- **Minimize vulnerability of systems**

- **Maximize control and transparency**

- **Introduce a clear, easy-to-understand formal process**

- **Provide end-users with web link to request jobs**

- **Central job management for all systems**

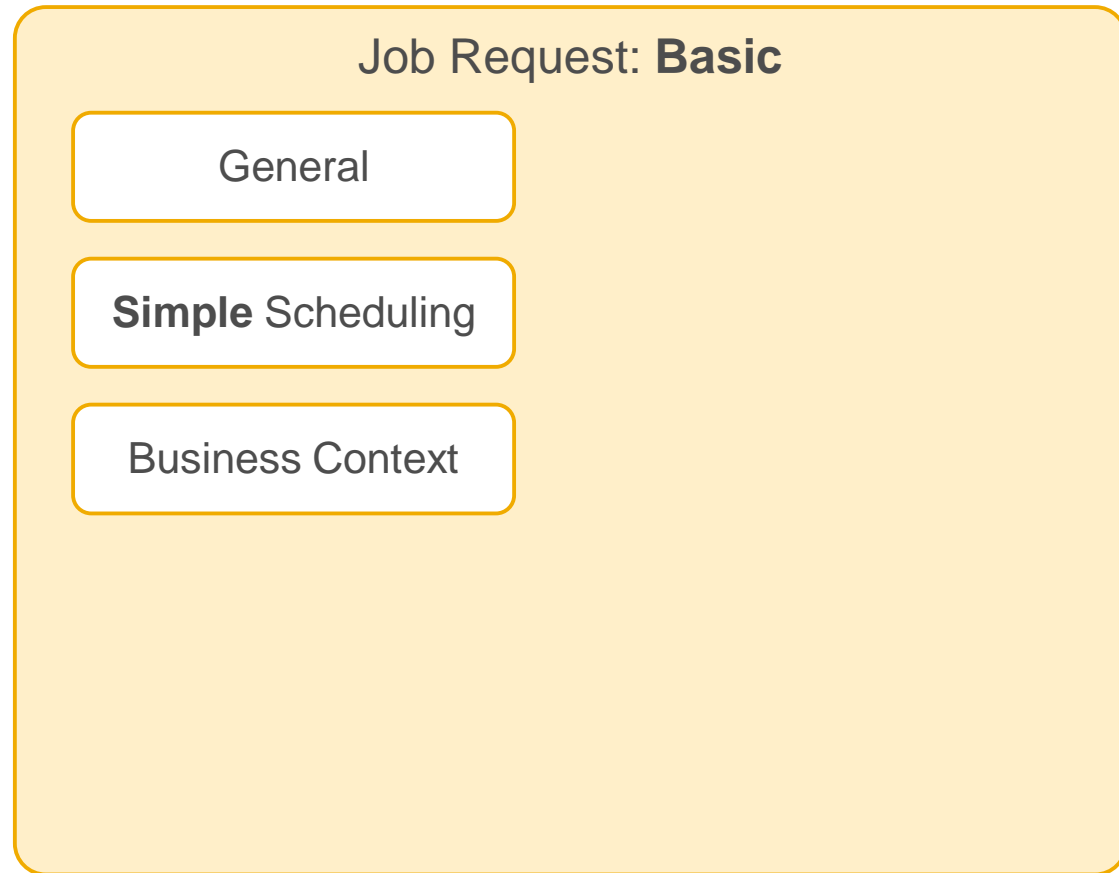- **Integration into Job Management End-to-End Process**
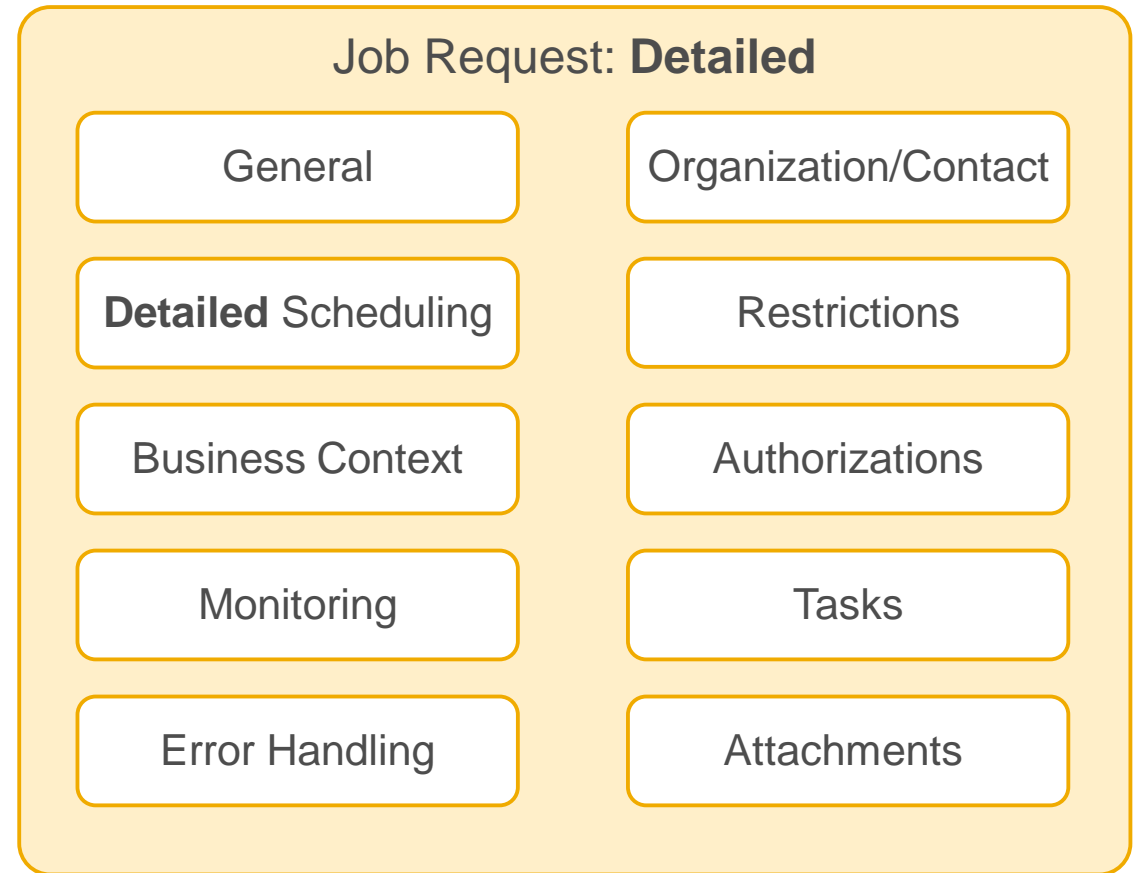
Job Request – Features

- **Job Request Web Form, which can be provided via web link**

- **Request the creation of jobs**

- **Request for editing existing jobs**

- **Request deletion of existing jobs**

- **Integration with Job Documentation**

- **Customizable**

- **Two types of job requests for different audiences**

Request: Add Job

Two different Types of Job Request: Basic vs. Detailed

Job Request: **Basic**

General
Simple Scheduling
Business Context

Job Request: **Detailed**

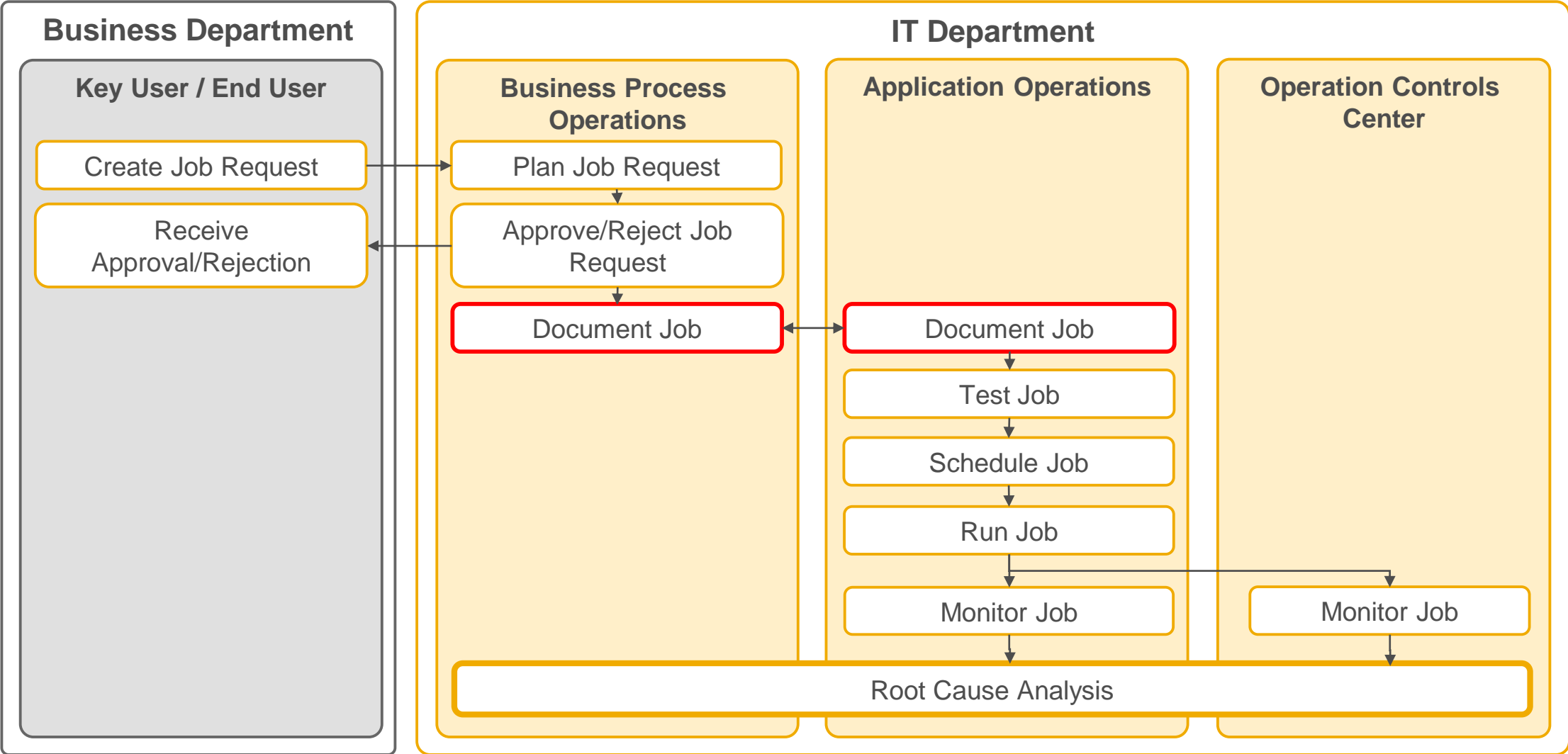| General	Organization/Contact
Detailed Scheduling	Restrictions
Business Context	Authorizations
Monitoring	Tasks
Error Handling	Attachments

Target Audience: **Business User**

Target Audience: **Technical User**

Job Governance:
Job Documentation

Job Management – Process View

Business Department

Key User / End User

Create Job Request

Receive Approval/Rejection

IT Department

Business Process Operations

Plan Job Request

Approve/Reject Job Request

Document Job

Application Operations

Document Job

Test Job

Schedule Job

Run Job

Monitor Job

Operation Controls Center

Monitor Job

Root Cause Analysis

Job Documentation Workflow with Job Request

I'd like to schedule an **ABAP** job!

Business User

Create

Approved Request

Information Transfer

Documentation

Process

IT Operator

General Information

Scheduling

System Configuration

Error Handling

Monitoring

Contact Persons

Attachements

Change Log
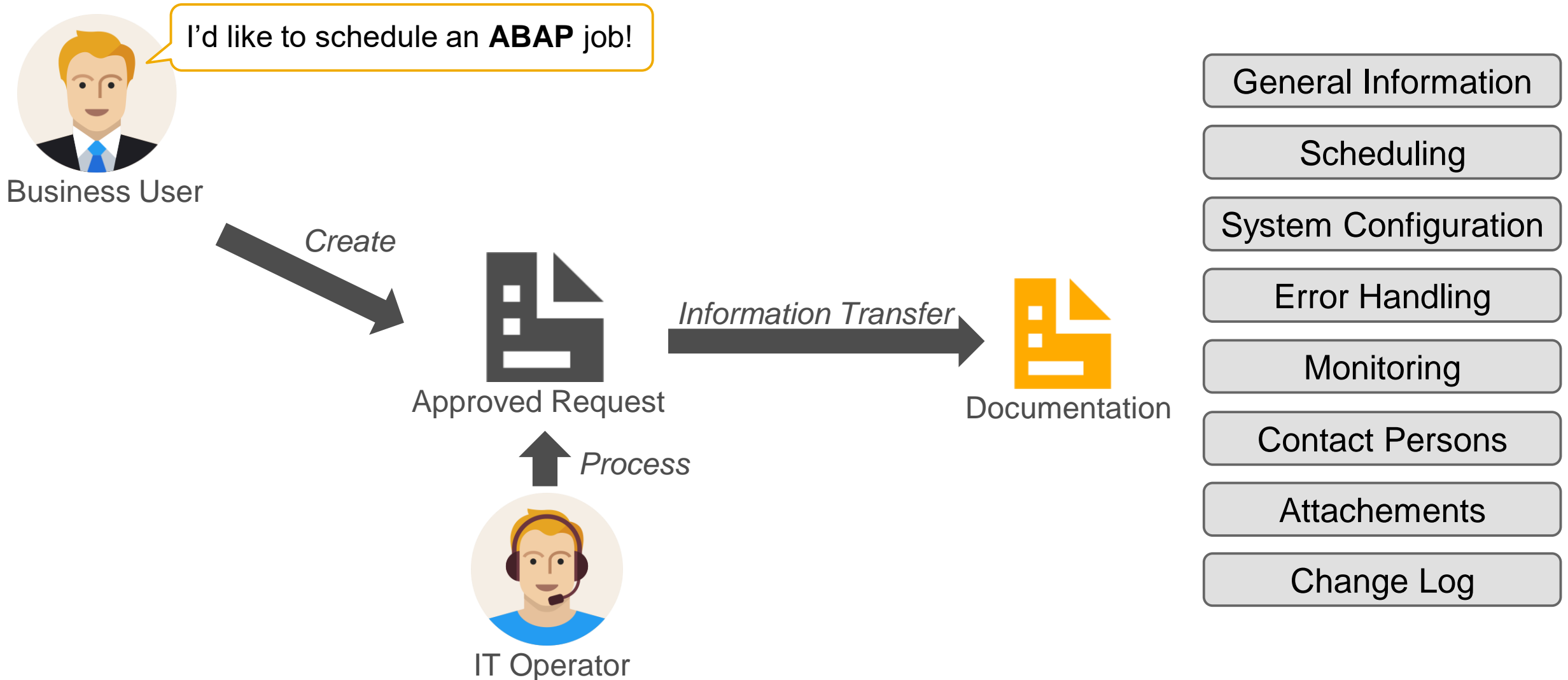
Job Documentation – Motivation

- **Central place to document jobs from all SAP systems**

- **Provide IT users with easy access to relevant information, e.g. react upon job failure**

- **Contain all useful information such as contact persons or business process context**

- **Ability to schedule jobs out of documentation**

- **Ability to setup monitoring out of documentation**
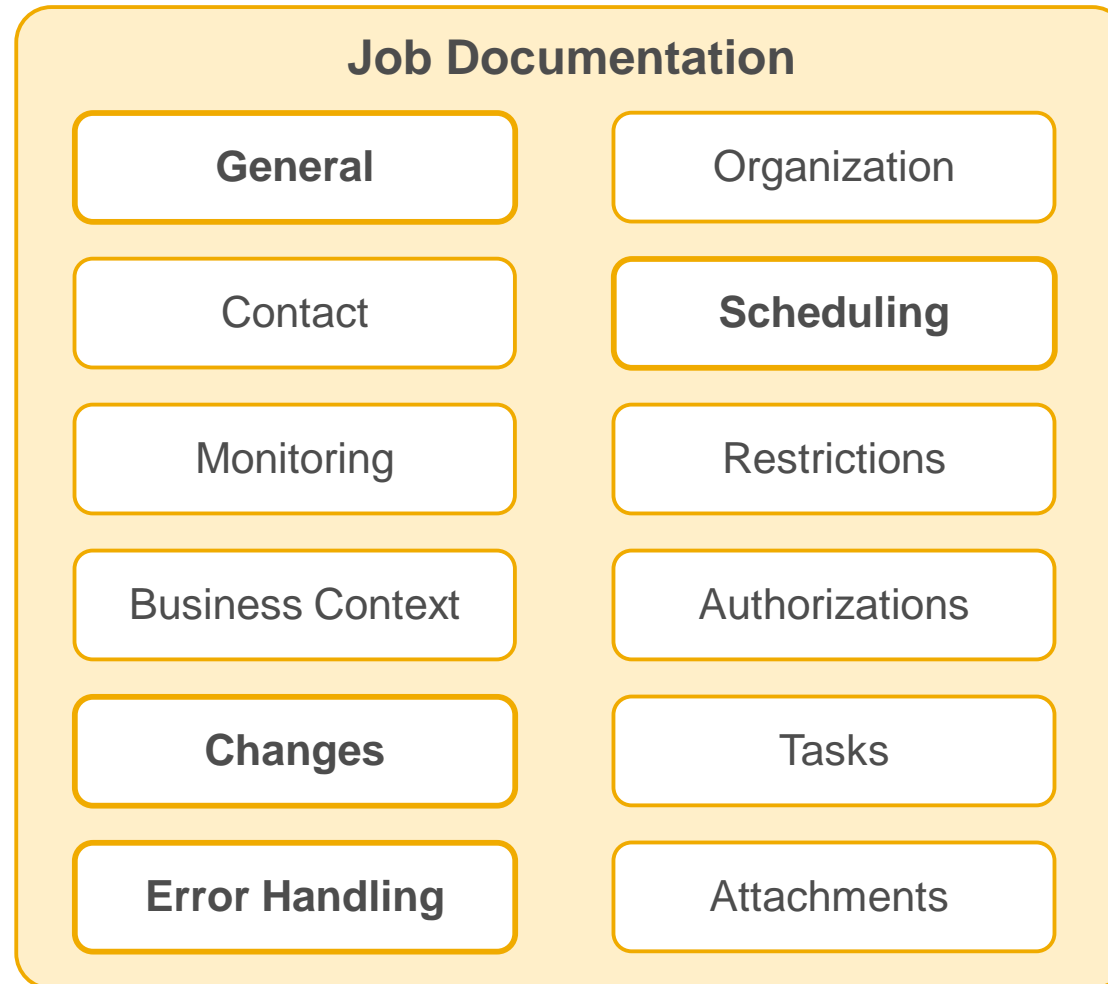
- **Integration into Job Management End-to-End Process**
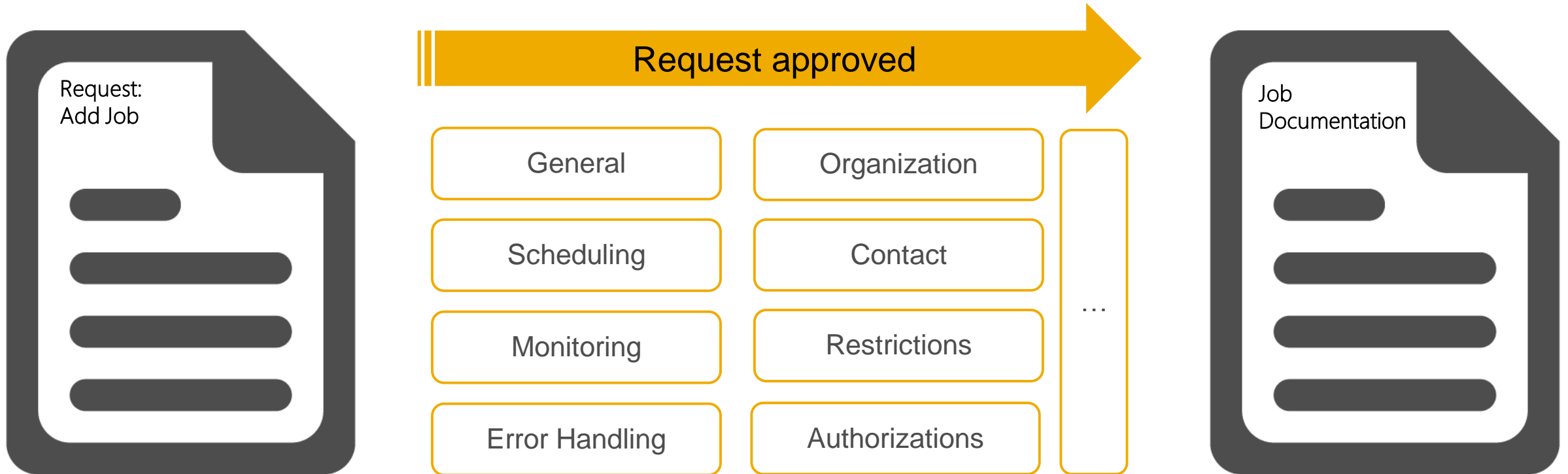
Job Documentation – Facts

- **Job Documentation as part of Job Management section in SAP Solution Manager**

- **One documentation per job**

- **Integration with Job Request**

- **Integration with Job Scheduling, Job Monitoring**

- **Part of Solution Documentation**

- **Customizable**

- **Accessible across landscape (Job Monitoring, External Scheduler, Transaction SM37)**

Job
Documentation

Job Documentation – Information Content

Job Documentation

General	Organization
Contact	**Scheduling**
Monitoring	Restrictions
Business Context	Authorizations
Changes	Tasks
Error Handling	Attachments

Job Documentation Integration with Job Request

Request: Add Job

Request approved

General	Organization
Scheduling	Contact
Monitoring	Restrictions
Error Handling	Authorizations

...

Job Documentation

Data from the Job Request will be transferred to the Job Documentation once the request is approved!

# System Wide Access Points to Job Documentation - Examples

Solution Manager

Managed System

Job Management Work Center

Business Process Monitoring

Job Monitoring Application

SM37

Job Documentation
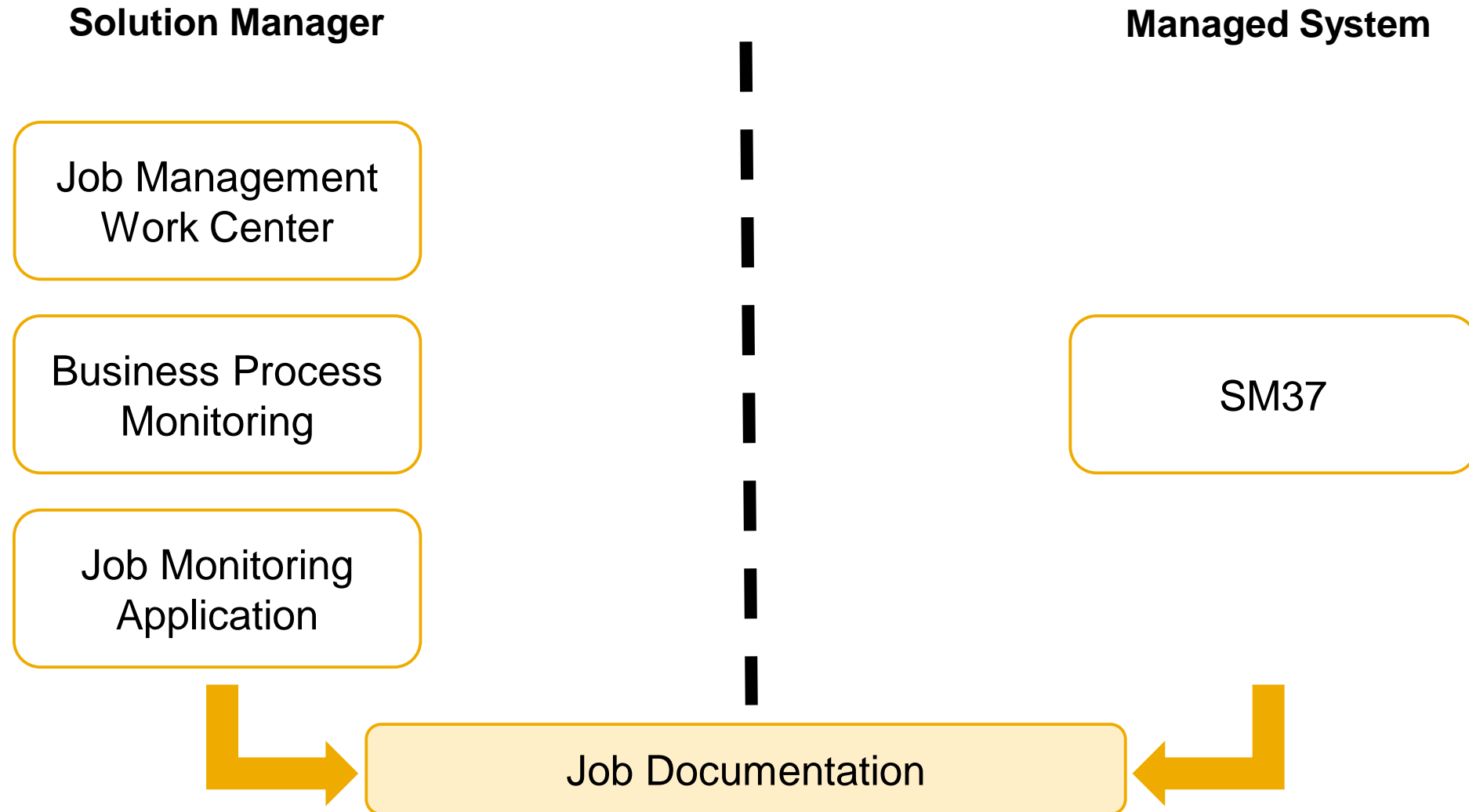
Job Scheduling

Job Management – Process View
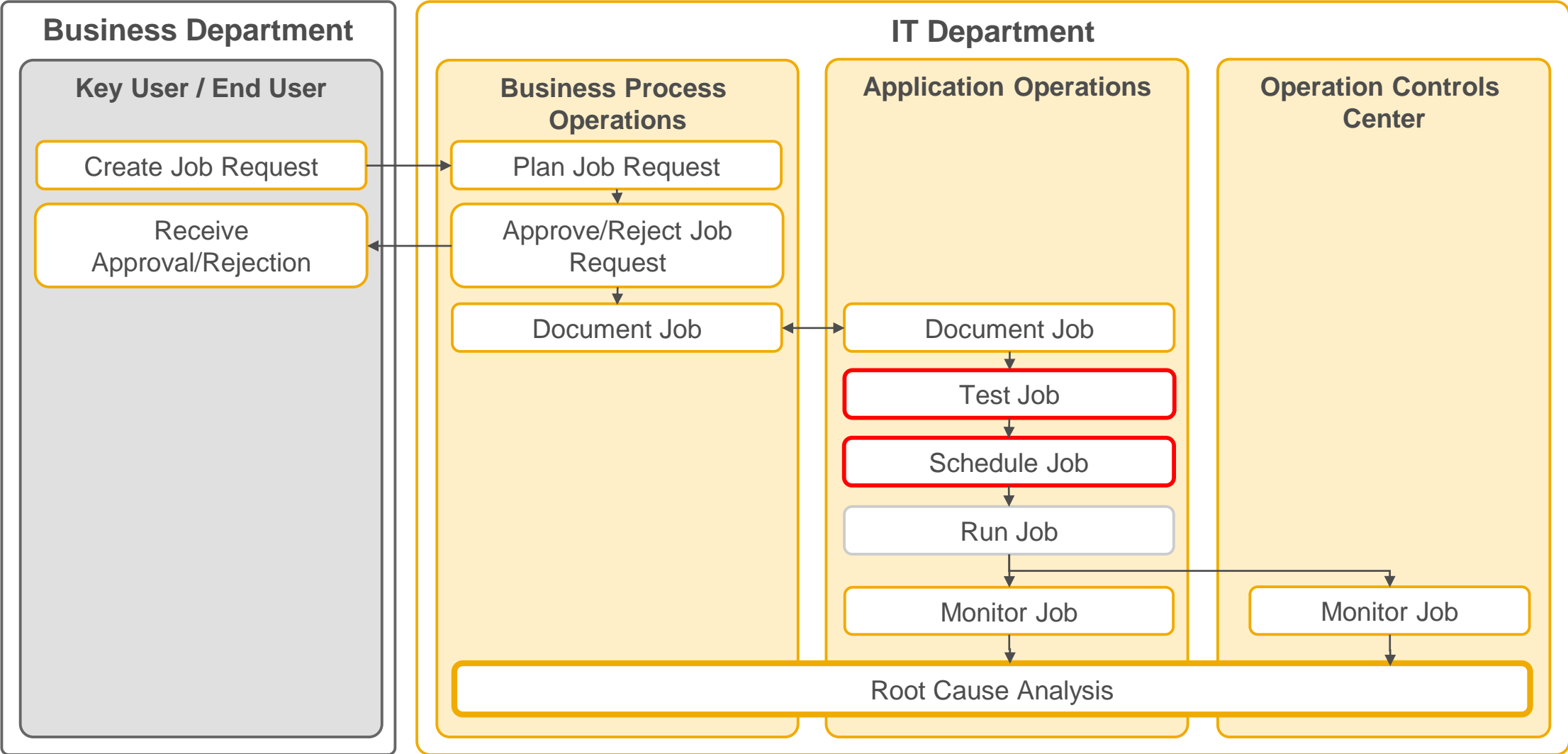
Job Scheduling – Idea

- **Replace manual scheduling on every system**

- **Central place for scheduling**

- **One scheduling entity for all system**

- **Ability to schedule on SAP and non SAP systems (external scheduling)**

- **Build complex scenarios with dependencies**

System 1	System 2	System 3
Job A		
		Job L
Job E		
	Job K	
	Job Z	
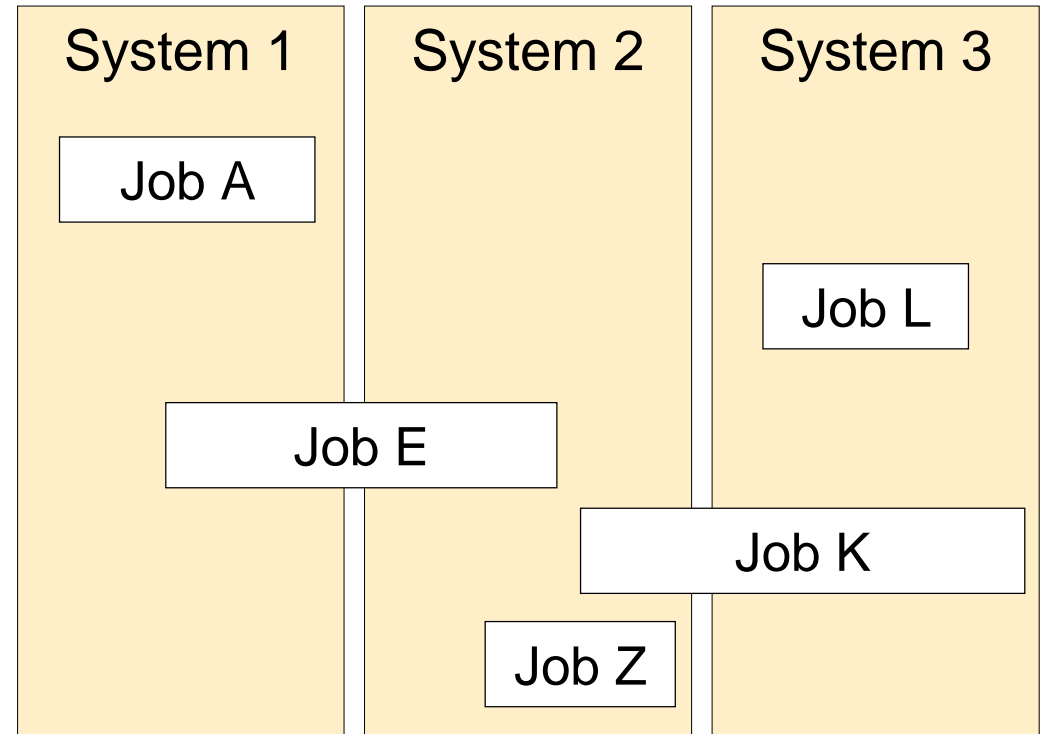
Standard vs. Extended (External) Scheduling – Process View

Standard Scheduling

Solution Manager

SAP Systems

External Scheduling

Solution Manager

SAP BPA by Redwood

Any System
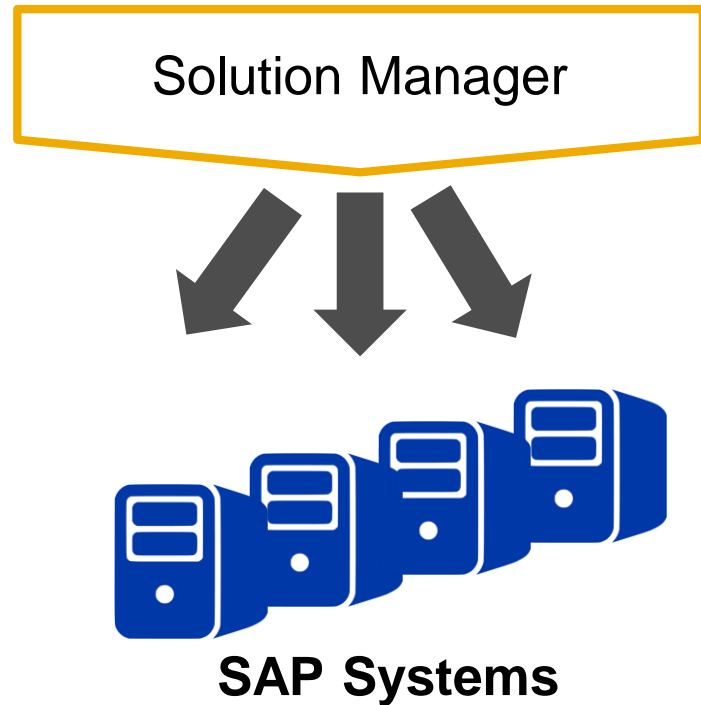
Standard vs. Extended (External) Scheduling – Example

ABAP Job with 3 Steps
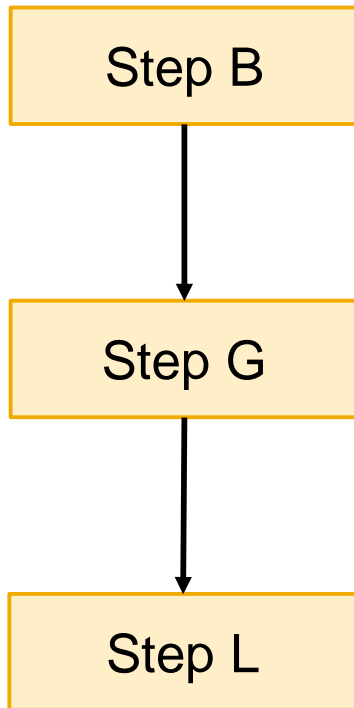
Process Chain with 3 Steps

Step B

Step G

Step L

Job A

Job B

Job F

Job L

Job M

Job N

Job in SAP

Job in Non-SAP

OS Job
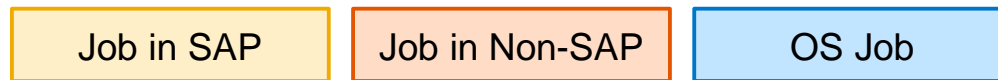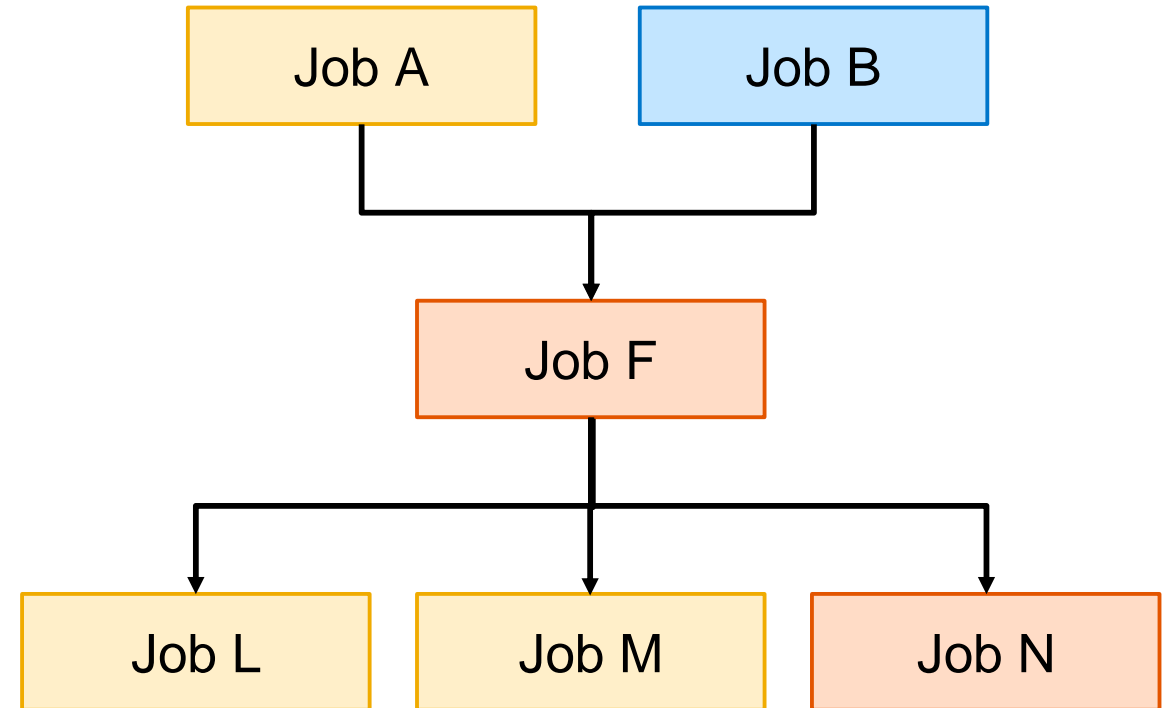
Standard vs. Extended (External) Scheduling – List View

Standard Scheduling

External Scheduling

Solution Manager

SAP Jobs

Simple Schedule

Simple Jobs

WebDynPro

Limited dependencies

External Tool: **BPA**

Any Job Type

Complex Schedule

Cross System Jobs

Modern **Java** Engine

Complex dependencies

External Scheduling: SMSE Interface

SMSE (Solution Manager Scheduling Enabler) enables communication from Solution Manager to external scheduling tools

- **Schedule jobs from Solution Manager in external scheduler**

- **Document jobs from external scheduler in Solution Manager**

- **Monitor jobs from external scheduler in Solution Manager**

SMSE certified external schedulers are (as of September 2016):

- **SAP BPA by Redwood (preferred)**

- **IBM Tivoli, Automic One Automation (formerly UC4), CA Workload Automation**

External Scheduling Tool: SAP BPA by Redwood

- **External Scheduling Tool**

- **Real-Time and event based**

- **Build complex chains**

- **Automate entire business & IT processes**

- **Automatically/manually react upon job issues with operator messages**

- **SMSE Certified**

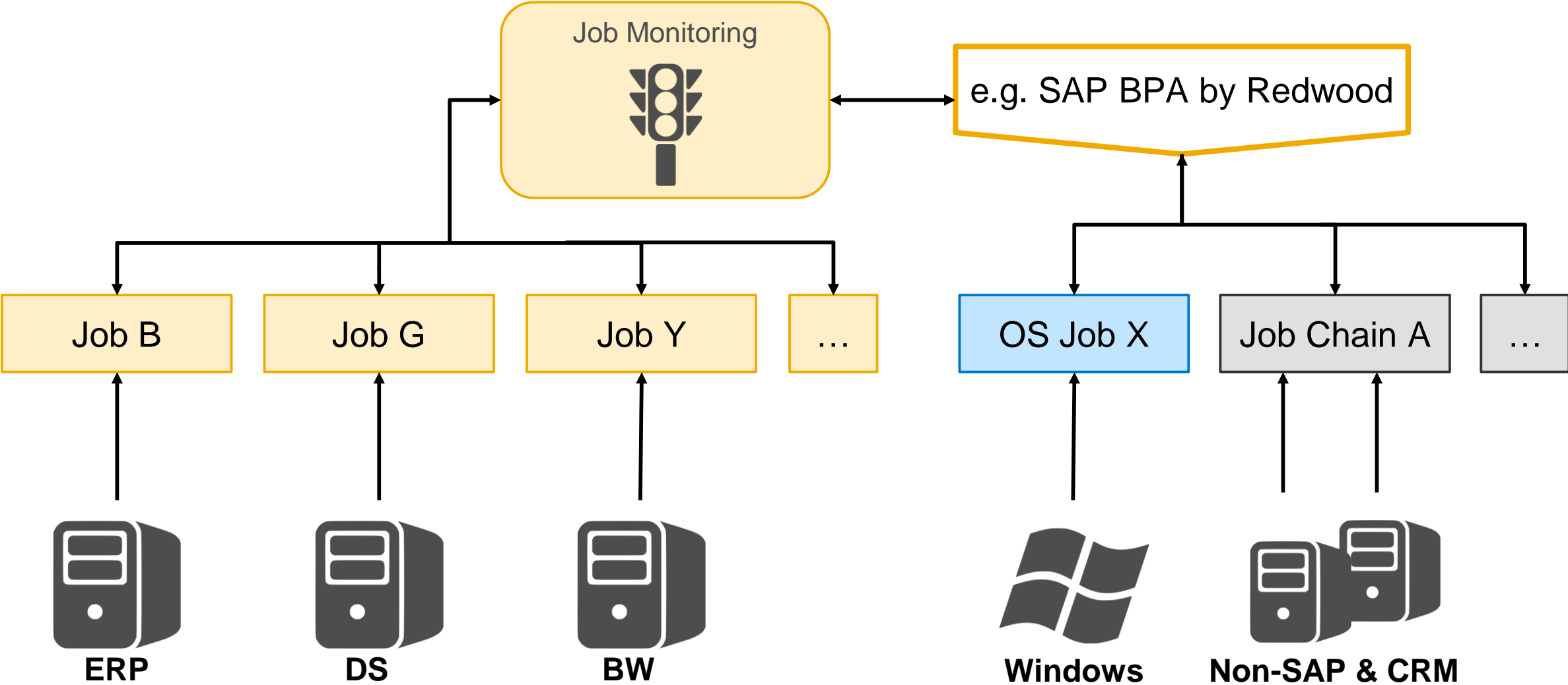# Job Monitoring

Job Management – Process View

Business Department

Key User / End User
- Create Job Request
- Receive Approval/Rejection

IT Department

Business Process Operations
- Plan Job Request
- Approve/Reject Job Request
- Document Job

Application Operations
- Document Job
- Test Job
- Schedule Job
- Run Job
- Monitor Job

Operation Control Center
- Monitor Job

Root Cause Analysis
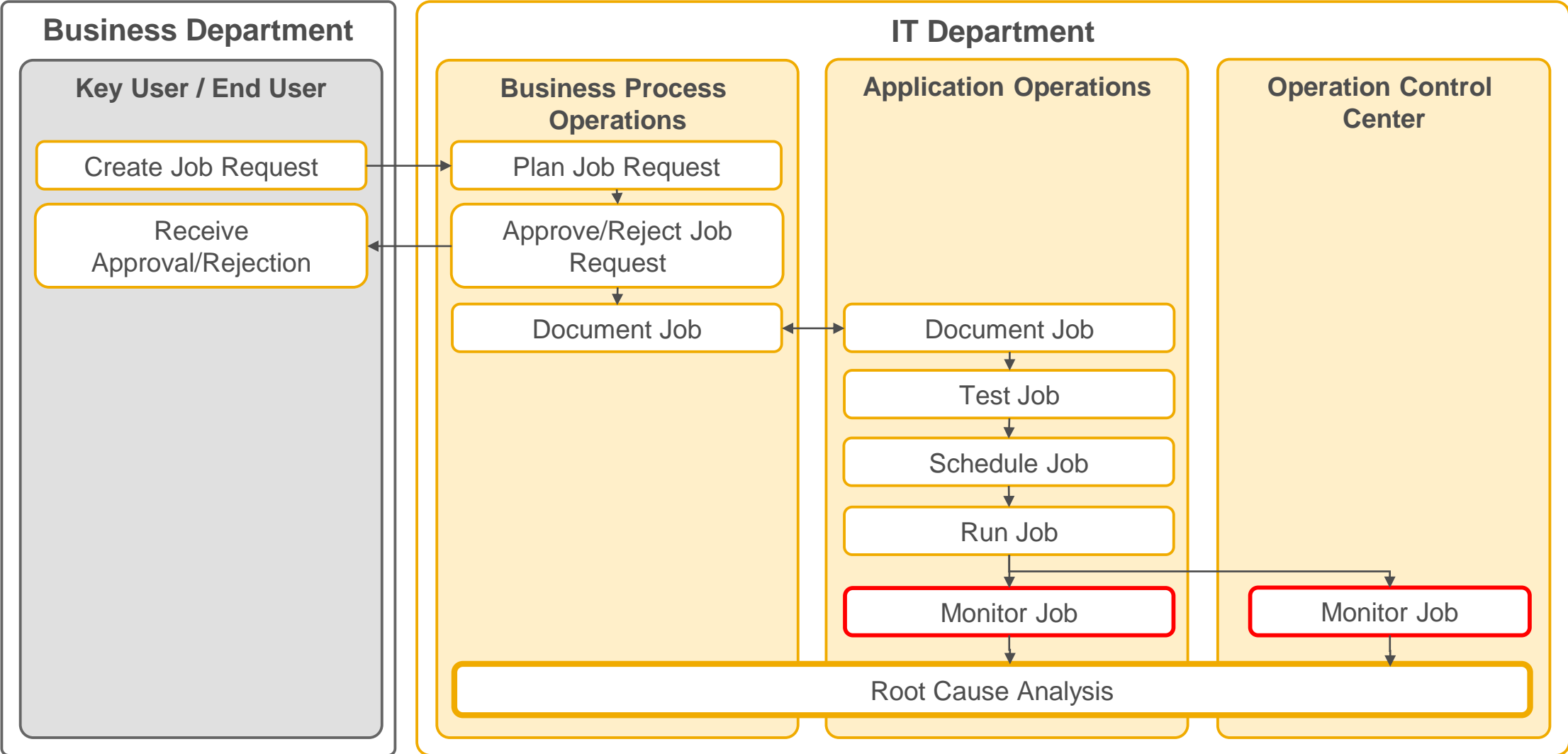
Job Monitoring – Facts

- **Monitor critical jobs in entire system landscape – all in SAP Solution Manager**

- **13 Advanced metrics available**

- **Job type specific metrics (e.g. DS Jobs)**

- **Central application to view status of metrics**

- **Alert and Notification Engine**

- **Integration with Job Documentation**

- **Forwarding to third party alerting possible**

Job Monitoring with/without External Scheduler: Example
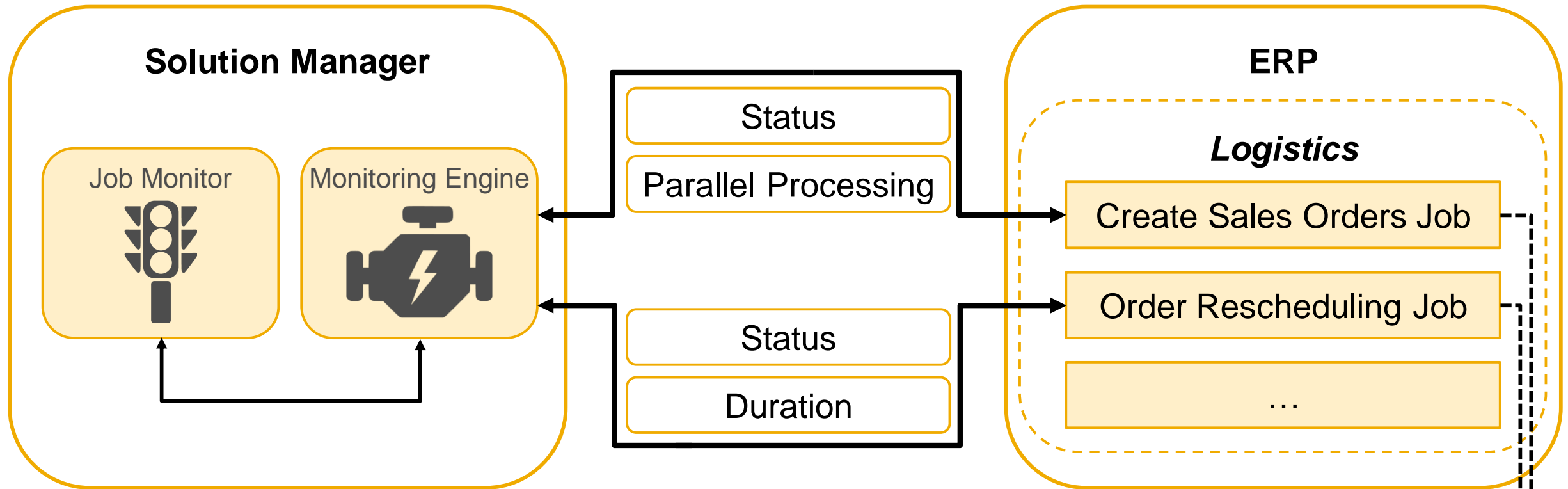
Job Monitoring Metrics Examples

Status

Cancellation

Duration

Threshold Warning

Threshold Alert

Out of Time Window

Threshold Warning

Threshold Alert

Time Window

Planned Start Time

Start Time

Job Monitoring Example

Solution Manager

Job Monitor

Monitoring Engine

Status

Parallel Processing

Status

Duration

ERP

Logistics

Create Sales Orders Job

Order Rescheduling Job

…
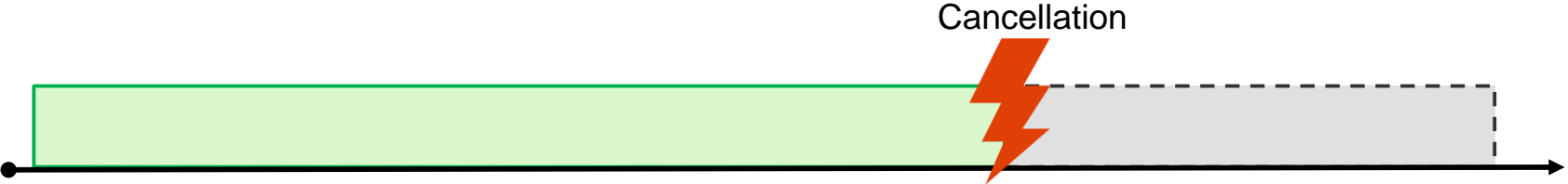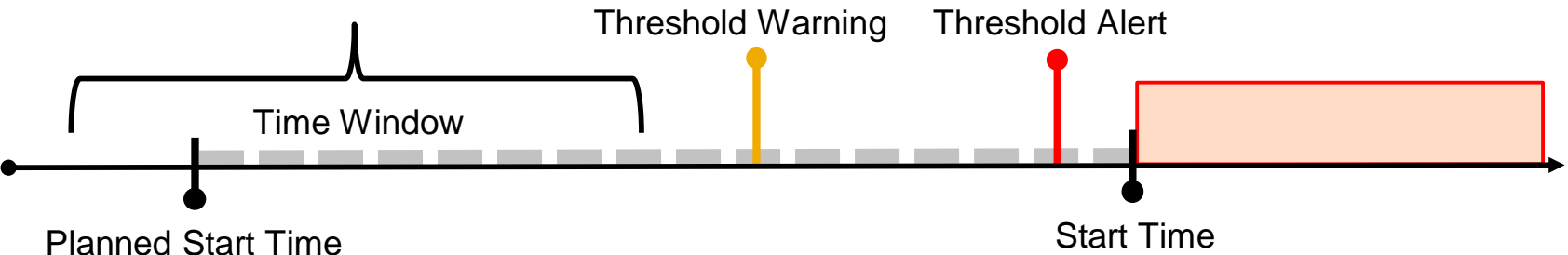
👉 Requirement: maximum runtime 25 minutes

👉 Requirement: only one instance at a time

Job Reporting

Job Reporting Facts

- **Oversee job related situation in systems**

- **Analyze workload and distribution**

- **Big picture of finished and cancelled jobs**

- **Detect peak and low times**

Which Tools are available for Job Reporting?

Job Reporting

Health Check

- Analyze all ABAP Jobs
- Numerous categories to analyze system
- Distribution of Jobs
- Daily, weekly and monthly view
- Graphical and list view of results

Job Resource Analysis

New in 7.2

- Use Key Performance Indicators (KPI) to look at workload
- Chose KPI from categories like CPU utilization, memory usage, etc.
- Analyze system workload to avoid peak times in the future

Analytics in Job Monitor

New in 7.2

- View number of red alerts per metric
- Adjustable time window
- Analyze system workload to avoid peak times

Job Management Health Check – Categories Examples

All categories are available in both graphical and list view, e.g.:

- **Finished vs. cancelled jobs**

- **Top Long Runners**

- **Distribution of jobs over**
  - Process Servers
  - Users
  - Job Classes

Also available: tabular drilldown of all jobs older than two years

Number of Jobs

Finished   Cancelled
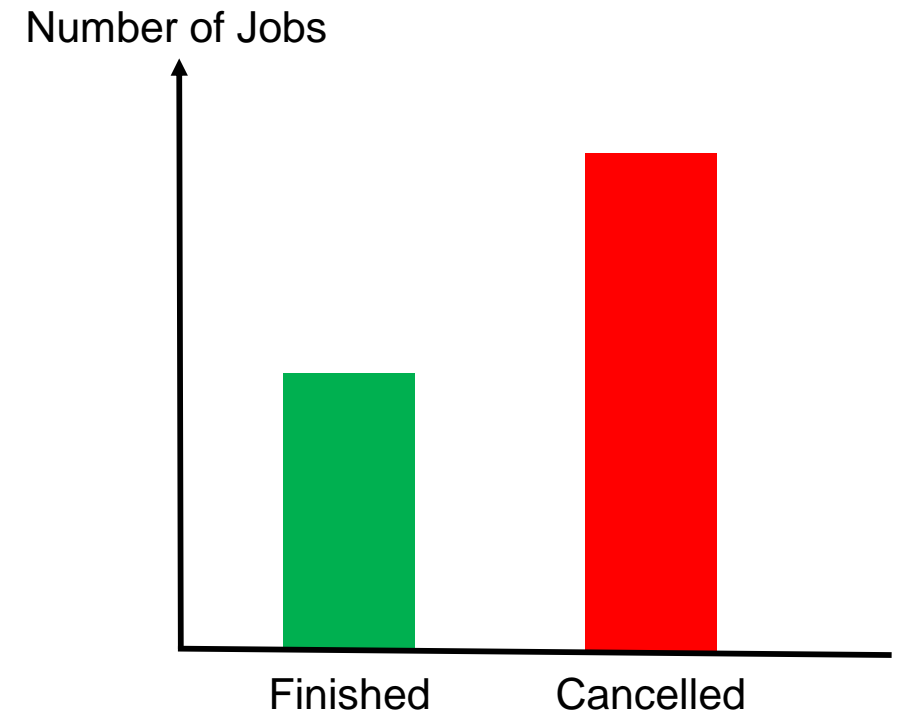
Job Resource Analysis – KPI Examples

Main idea of JRA is to analyze the system's workload in categories like:

- **CPU utilization**

- **Memory usage**

- **Background work process utilization**

Use one or more KPIs in one view!

CPU Utilization (%)

Time
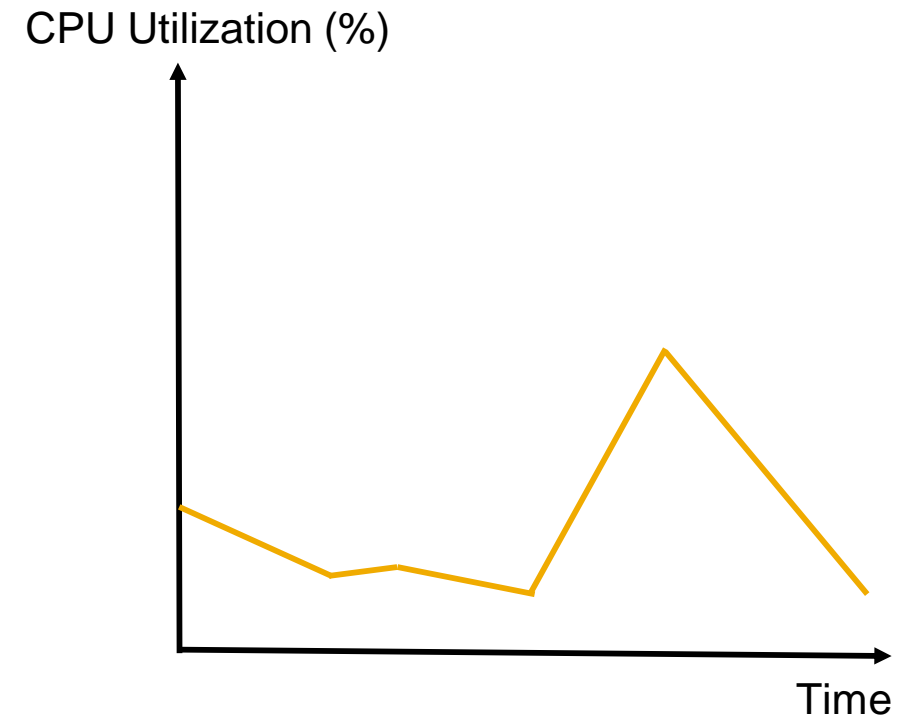
Contact information:
jobmanagement@sap.com

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