Process Analytics WS2021/22

Sandra Zilker, Willi Tang, Prof. Dr. Martin Matzner

Agenda

1. Who we are

2. Process Analytics and Process Mining

3. Housekeeping

We are the Chair of Digital Industrial Service Systems

Who we are

- Team overview

Prof. Dr. Martin Matzner
Chairholder

Dr. Johannes Tenschert
Post-Doc

Sebastian Dunzer, M.Sc.
Research associate

Emanuel Marx, M.Sc.
Research associate

Tobias Pauli, M.Sc.
Research associate

Matthias Stierle, M.Sc.
Research associate

Melani Brinkmann
Office Assistant

Willi Tang, M.Sc.
Research associate

Sven Weinzierl, M.Sc.
Research associate

Sandra Zilker, M.Sc.
Research associate

And many student assistants…

We focus our research activities on three areas

Research topics

Business Process Management	Smart (Industrial) Services	Digital (Industrial) Platforms
▪ Business Process Monitoring ▪ Business Process Mining	▪ Development and modelling of services ▪ Design of information systems for services	▪ Design of platform business models ▪ Modeling of platform ecosystems

The Chair of Digital Industrial Service Systems offers courses on Bachelor's and Master's level

Teaching

	Winter term	Summer term
Other	**82384** Internship Information Systems	
	TS410 Integrated Business Processes in SAP S/4 HANA	
Master	**IIS1999** Master Thesis	
	IIS54350 Internet of Things & Industrial Services Seminar	
	IIS54760 Process Analytics	
	IIS57019 Introduction to Computer Science	
Bachelor	**81999** Bachelor Thesis	
	82383/82385 Seminar Wirtschaftsinformatik	
	82310 Forschungsmethodisches Seminar	
	83467 Business Process Management	**87660** IT-gestützte Prozessautomatisierung
	82154 Business & Information Systems Engineering	**82455** Service Management & Service Engineering

Agenda

1. Who we are

2. **Process Analytics and Process Mining**

3. Housekeeping

What is a process and why do we need it?

There are different definitions of processes

Definition of process

- A **process** is a

  "… completely closed, time-logical sequence of activities that are required for working on a process-oriented relevant business object."

  [Becker and Kahn 2011, p. 6; based on Rosemann (1996), Becker, Schütte 2004, p. 107]

- A **business process**

  "… subscribes to the business goals of an organization and is bound to the organization's business environment."

  [Becker, Kahn 2011]

Why should we know what our processes look like?

There are several drivers of process analysis

Process analysis

- **Process design**
  - Understanding of current processes...
  - ...is basis for improvement suggestions

- **Compliance**
  - Understanding of current processes and rules...
  - ...is basis for auditing

- **Software selection**
  - Understanding of current processes...
  - ...is basis for evaluating different tools

How do we know
what our processes look like?

Gathering information about processes is a time consuming task

Examining processes

- Interviews
- Workshops
- Document analysis
- IT System analysis
- Observation

time consuming = expensive

Manual process modelling has several shortcomings

Disadvantages of manual process modelling

- Process models may become **obsolete**
  e.g. created years ago and not maintained
- Process models may be **inaccurate**
  e.g. special case XYZ had been left out
- Process models may be "**wrong**"
  e.g. process is supposed to look harder than it is

  → **potentially incorrect = potentially wrong decision**

Process mining on the contrary is about automatic process modelling

Advantages of Process Mining

- Information is objective

- Holistic view of process

Event logs are a requirement for the discovery of process models

Process Mining – How does it work?

Process Model

Process Start
839,624

ERP (e.g. SAP)

Create Purchase Order Item
839,624

2 days

Send Purchase Order
839,624

3 days   7 days

Receive Order Confirmation   8 days   Change Price
49,592   145,476

6 days   10 days   2 days

Receive Goods
839,624

6 days

13 days

Scan Invoice
839,624

12 days

Book Invoice
839,624

Process End
839,624

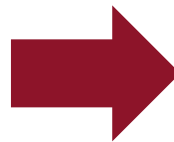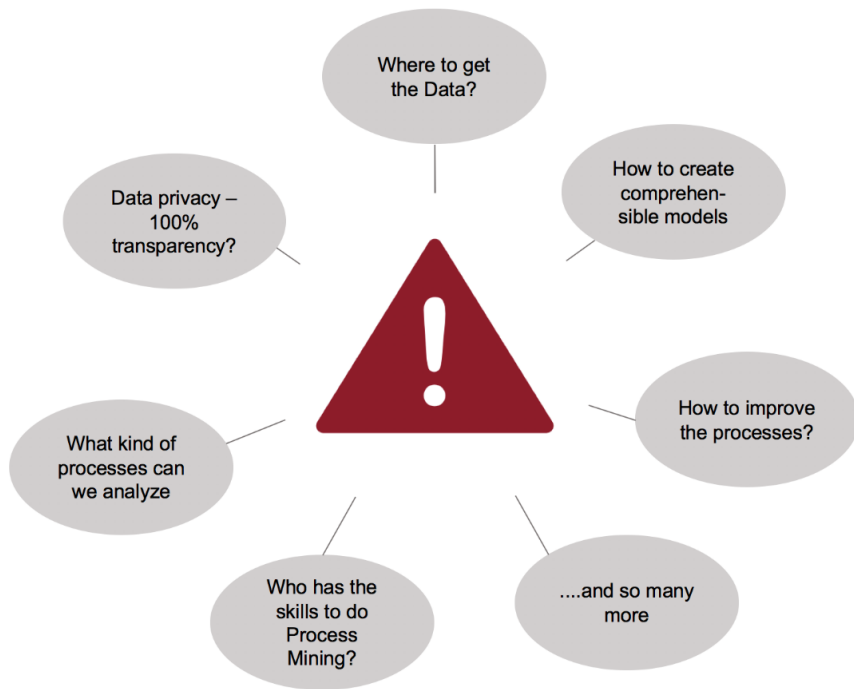| ID	Task	Time	…
1	Create PO	12.2.2018 14:01	…
1	Send PO	12.2.2018 14:04	…
1	Receive Goods	16.2.2018 8:43	…
			….

Event Log
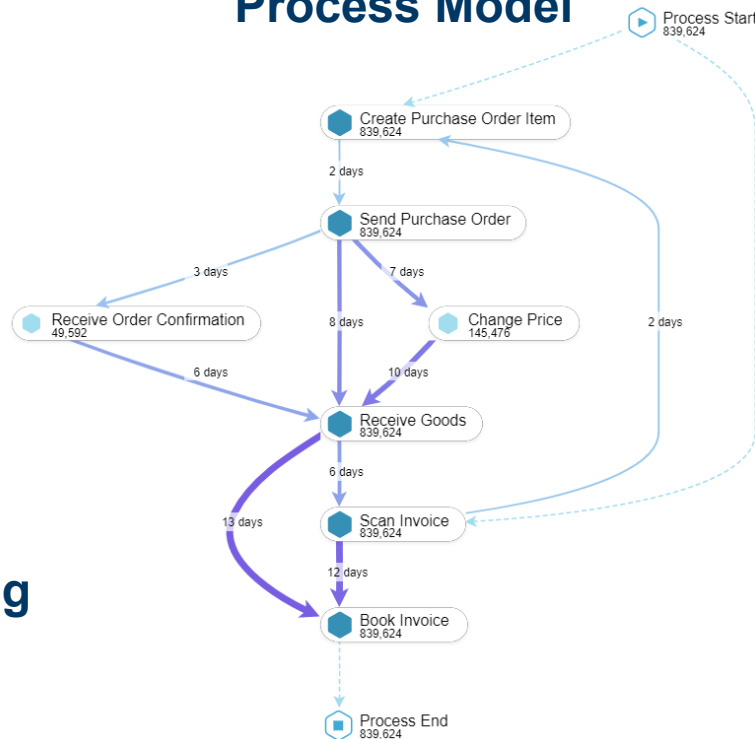
Process analytics concerns creating sustainable value for an organization

Process Analytics

Process Analytics:

How to create sustainable value for an organization with the use of Process Mining?

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Process Analytics | 00 - Intro | Sandra Zilker, Willi Tang, Prof. Dr. Martin Matzner

03.11.2021

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Learning Objectives

- You can describe the different aspects of business process management and process analysis in your own words
- You have actionable knowledge about process mining software
- You are able to analyze business processes on your own
- You are able to communicate your analytical insights in a (virtual) presentation

The course consists of a lecture and a group project

Course structure

Schedule
- The duration of each slot will vary throughout the semester.   - The lecture will be held as a **MOOC** on StudOn.   - The online sessions with the teaching assistants will focus on the group project.

Assessment

Exam (30%)	Group project (70%)
- Date: Set by examination office - Duration: 60 minutes - Format: in person	Presentation 02/02/2022 (online/ in person → tbd)

Additional Information

- Each group will consist of ~ 6 students
- You must pass both types of assessment
- Attendance is only mandatory for the presentations
- If you have questions: Use the FORUMS or ask your TUTOR!

The sessions will be held online via Zoom

Syllabus (preliminary)

Zoom sessions

- Wednesdays at 11:30AM

- Any specific questions need to be *posted prior to the session* in the forum on StudOn.

Date	Session Content	Self-paced Learning
11/03/2021	Kick-off	Enroll for MOOC (StudOn course) Register for Group Project - Mandatory by Friday Nov 5th, 23:59 pm Register for Celonis Academic Cloud
11/10/2021	Celonis Intro	Lecture: Start MOOC week 1
11/17/2021	Tutorial Session: Discuss MOOC week 1 & Group Project	Lecture: Start MOOC week 2
11/24/2021	Tutorial Session: Discuss MOOC week 2 & Group Project	Lecture: Start MOOC week 3
12/1/2021	Tutorial Session: Discuss MOOC week 3 & Group Project	Lecture: Start MOOC week 4
12/08/2021	Tutorial Session: Discuss MOOC week 4 & Group Project	
12/15/2021	Guest (tba)	
12/22/2021	Possibility to book consultation sessions	
12/29/2021	Christmas break - no lecture	
1/5/2022	Christmas break - no lecture	
1/12/2022	Tutorial Session: Discuss Group Project	
1/19/2022	Hackathon	
1/26/2022	Tutorial Session: Discuss Group Project	
2/2/2022	Final presentation (tba)	
2/6/2022		Hand in Final Group Project
2/9/2022	Tutorial Session: Questions regarding final exam	

Lectures

Pre-recorded MOOCs
→ Link on StudOn

MOOC Lecture

Kurse

Process Analytics

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FAU
FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG
SCHOOL OF BUSINESS,
ECONOMICS AND SOCIETY

The group project is mandatory for passing this course

Group project

Subscribe to group project by 11/05/2021
- Each group will consist of ~ 6 students
- You can self-organize or request to be assigned a group randomly
- We will also consider to enable in-person meetings for your group project

Assessment
- You will be given a data set
- Pretend you are a team of consultants and you need to analyze this data
- There is no exact right or wrong. Grading will be mainly based on your efforts, creativity, and presentation of your results
  → Further information will follow

You can address your questions regarding this course in the tutorial sessions

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Questions for Tutorial Sessions
Please post your question for each session here.

Themen | Info | Einstellungen | Moderatoren | Export

Neues Thema | Alle auf gelesen setzen

(1 - 6 von 6)

-- Bitte wählen -- | Ausführen

Thema	Angelegt von	Beiträge	Besuche
06_Tutorial Session 10.02.2021	sandra.zilker	1	0
05_Tutorial Session 20.01.2021	sandra.zilker	1	0
04_Tutorial Session 23.12.2020	sandra.zilker	1	0

Annina Ließmann
Tutor

→ Please post your questions to the forum on StudOn **prior** to the session.

Use all online channels for communication

Communication

- StudOn is the primary platform for all communication (materials, questions etc.).

- Please use the **discussion forum** for questions relating to everyone instead of E-Mails.

- All information regarding the course will be posted there and/or sent by mail through StudOn.

- The syllabus will tell you when and if a lecture/group exercise will take place.

Next Steps

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Questions?

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