

Process Analytics

PAIS, WS2019/20, Matthias Stierle, Sandra Zilker & Prof. Dr. Martin Matzner

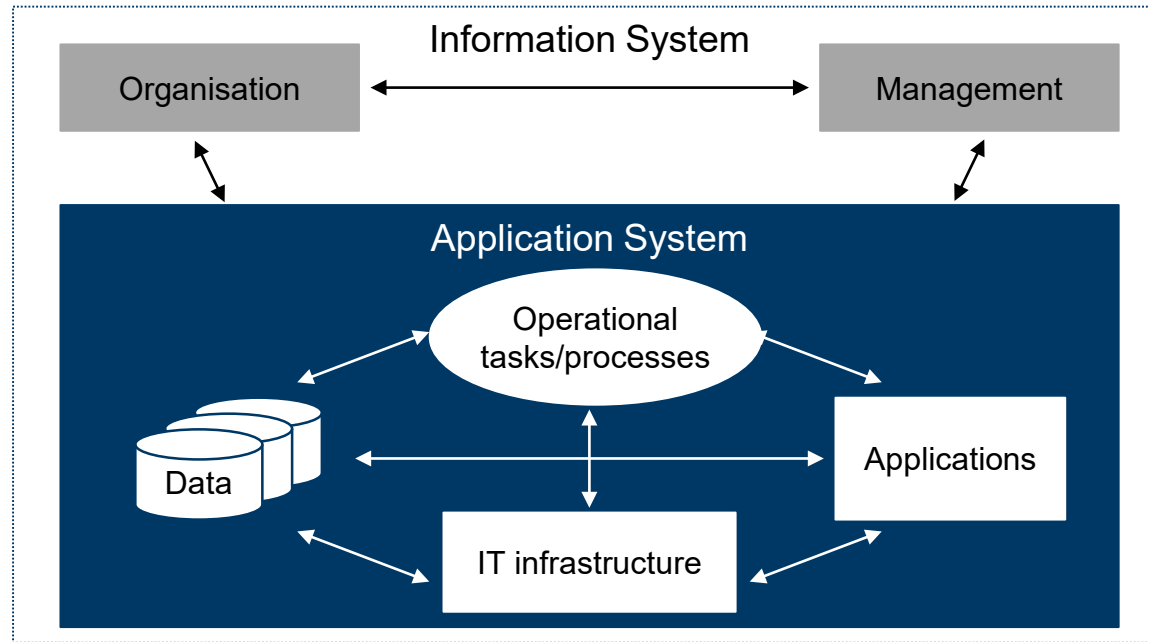


Agenda

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- 1 Application Systems - the Basis of Process Mining
 - 2 Flexibility vs. Structure in Application Systems
 - 3 Application Users vs. Process Mining Analysts

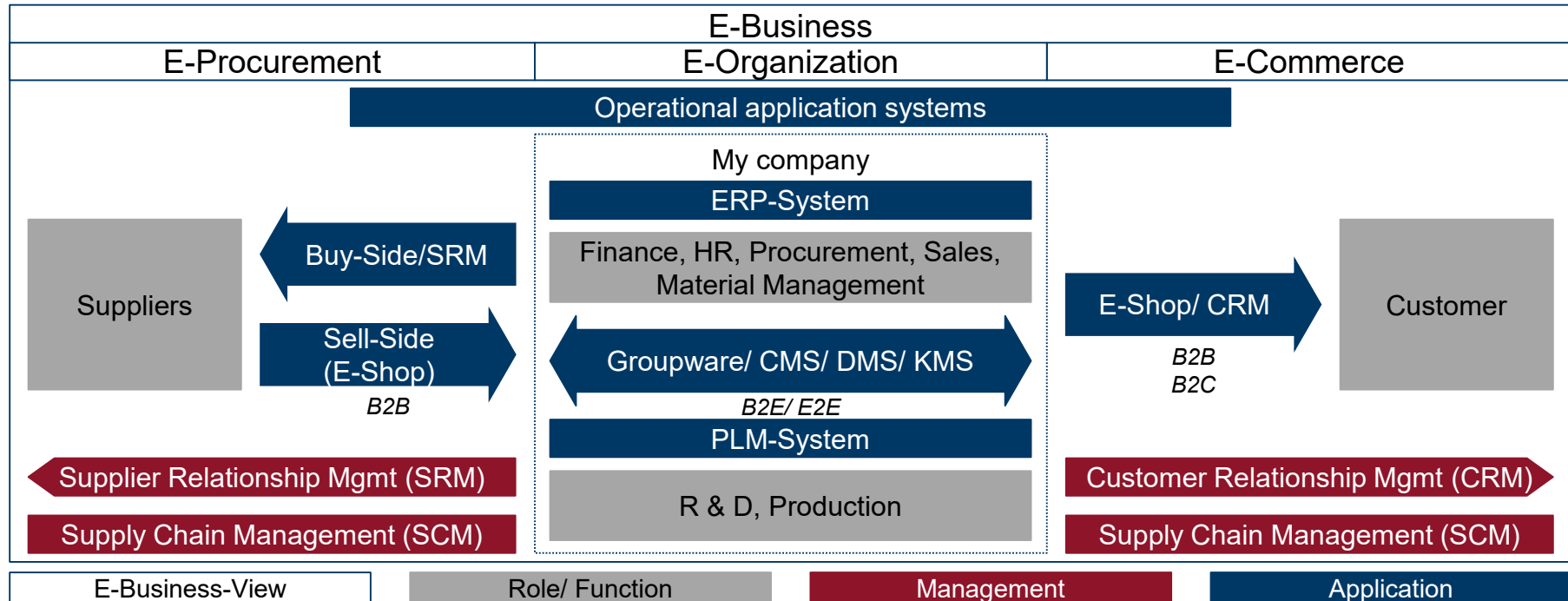
Elements of an application system

Software system for defined operational tasks/processes



Laudon, K. C., Laudon, J. P., & Schoder, D. (2010). *Wirtschaftsinformatik: Eine Einführung*. Pearson Deutschland GmbH.

Organization-wide application systems: Example E-Business



Event data in applications

- All IT systems do somehow produce and store event data
- Often logging is required for system design reasons as well as auditing
→ Event data is just a “by-product” of transactional work but usually not recorded intentionally for analysis
- The suitability for process mining depends on the amount, level of detail and structure of the data
- The challenge is to combine the information within the system into an event log
→ To be continued in the online course and the group project

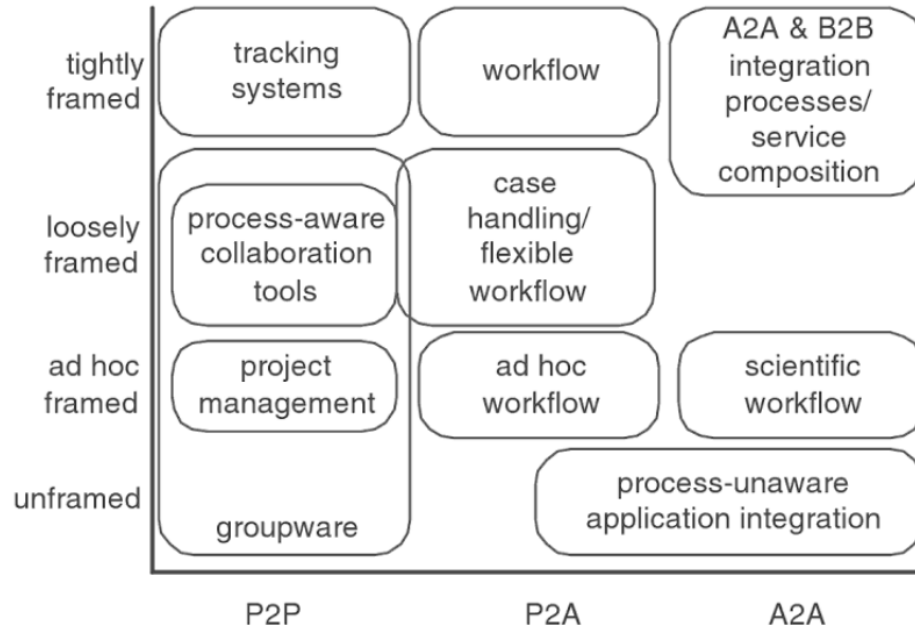
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What IT systems do organizations use?

Process-Aware Information Systems (PAIS)

“a software system that manages and executes operational processes involving people, applications, and/or information sources on the basis of process models.”



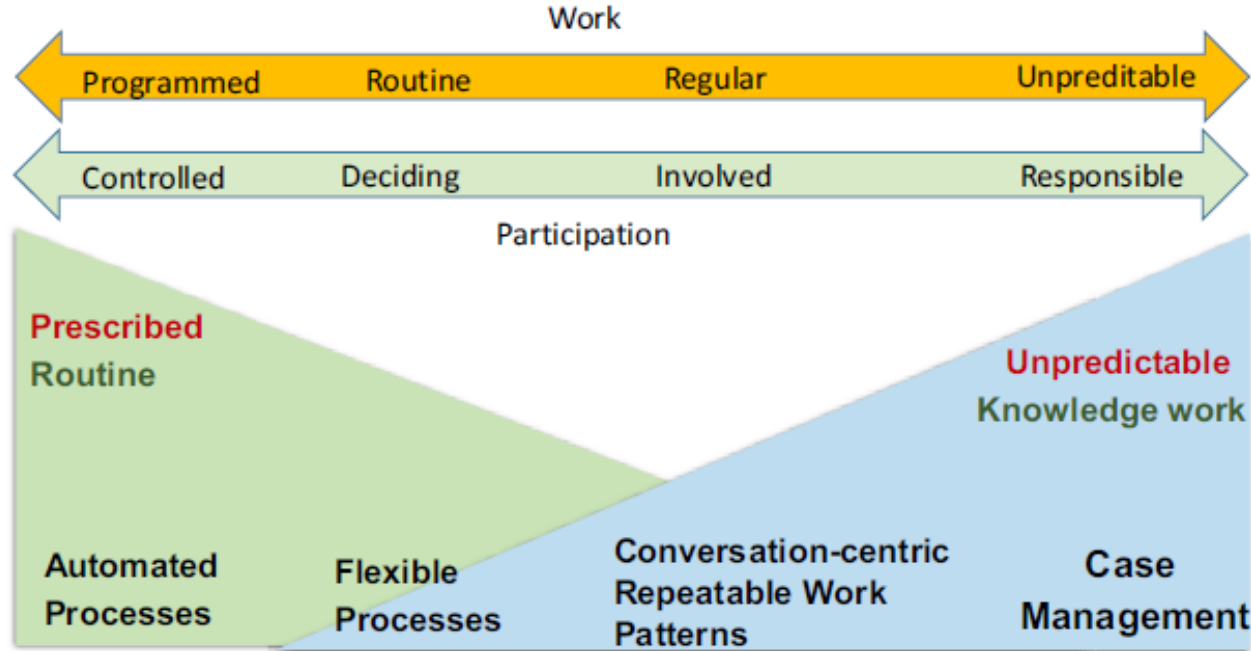
- P2P = Person-to-Person
- A2A = Application-to-Application
- P2A = Person-to-Application

→ Whether a process can be tightly framed or not depends highly on its predictability.

→ It is desirable to frame it as tightly as possible in order to reduce variation and fault probability but still enough flexibility has to be given to employees to fulfil their work.

Dumas, M., van der Aalst, W., & Ter Hofstede, A. (Eds.).
(2005). *Process aware information systems* (Vol. 1). Chichester: Wiley.

The spectrum of work



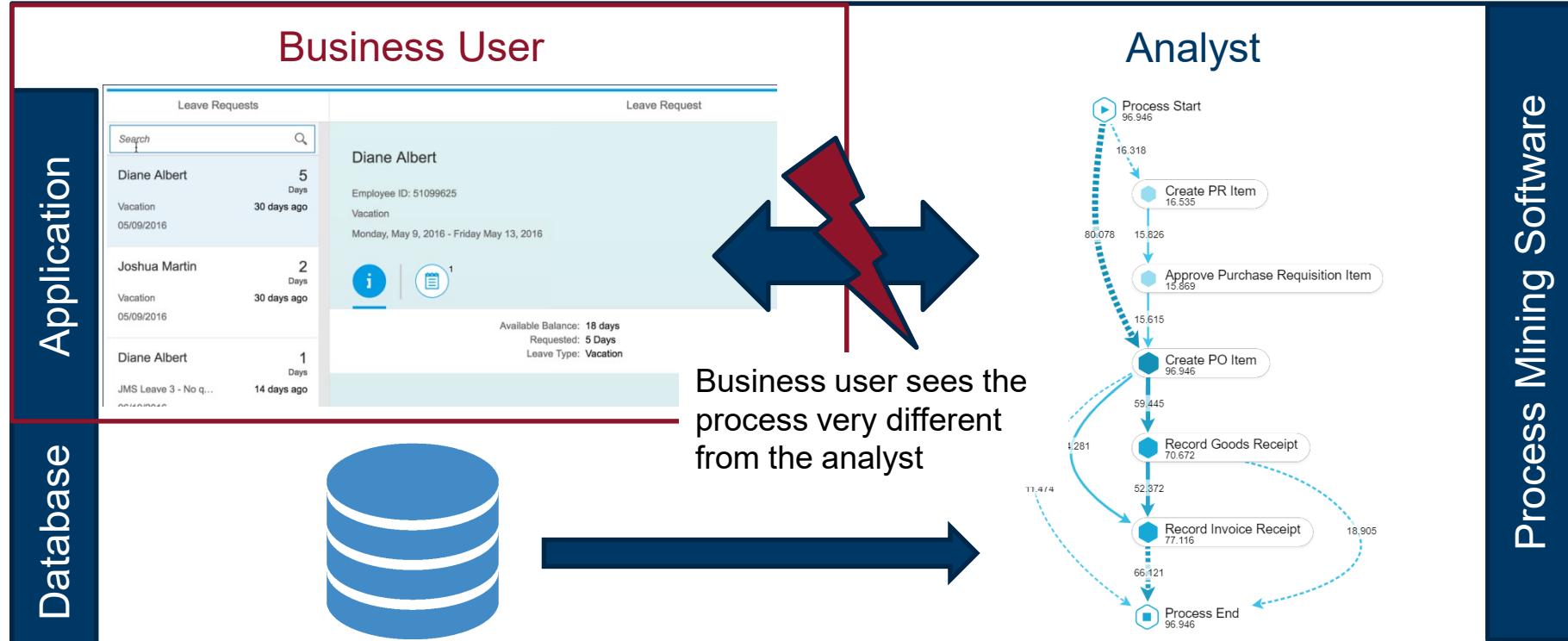
Motahari-Nezhad, H. R., & Swenson, K. D. (2013, July). Adaptive case management: Overview and research challenges. In *2013 IEEE 15th Conference on Business Informatics* (pp. 264-269). IEEE.

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Bridging the gap between business and analysts



Information Systems for Process Analysis

- Process Mining builds on event data that is created when users work in applications
- Event data is (currently) a “by-product” and not recorded for the purpose of analysis
- Applications vary in terms of flexibility between tightly framed and unframed processes
- Process participants and managers usually know the process from the application view, the analyst knows the process from the data and the analysis software view

Questions?

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