

Institute of Information Management



University of St.Gallen

E-Contracting: Towards IT-enabled collaboration processes in contract management

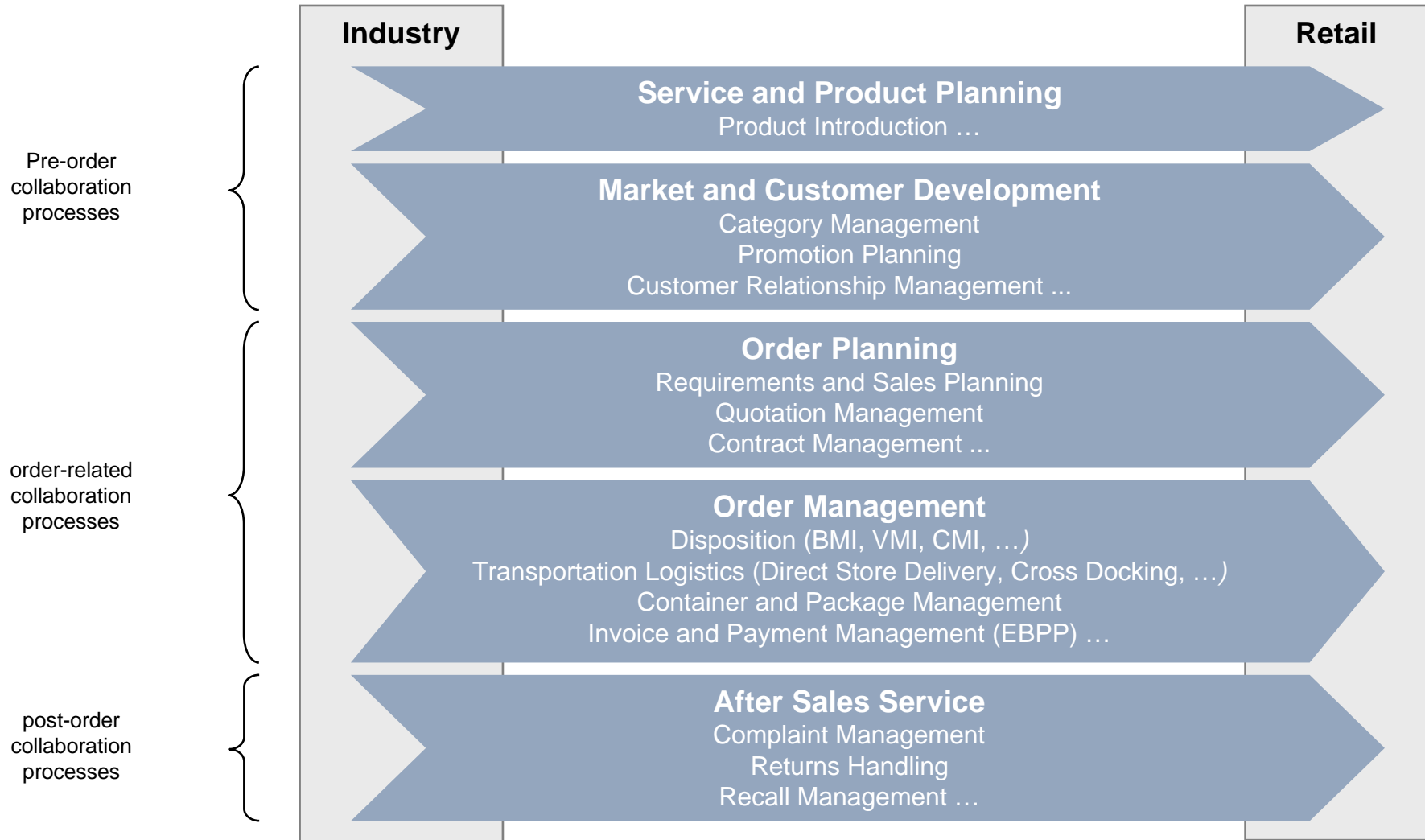
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Passau, 20.02.06

Content

- Introduction and motivation
- An interorganizational perspective on contracting
- Case: E-Contracting in the retail industry
- Conclusion and outlook

Electronic collaboration between retail and industry successively enters pre- and post-order collaboration processes



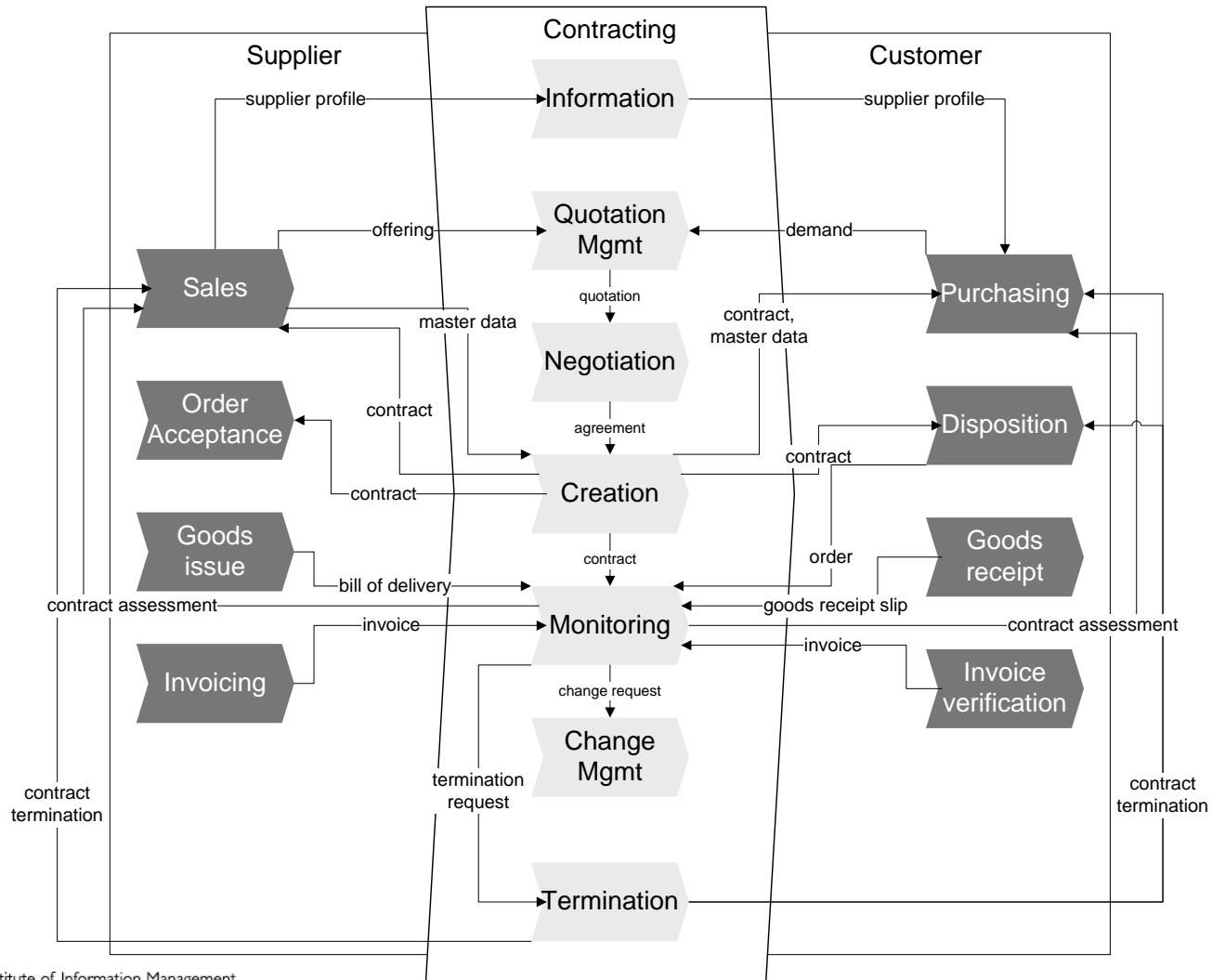
E-Contracting denotes the IT-supported management of electronic contracts over their entire lifecycle

- **Electronic Contract Management / E-Contracting defined**
 - process of managing contractual agreements over their entire lifecycle, ranging from negotiation over creation and fulfillment to termination
 - Objective: maximize performance and minimize risk of the corresponding business transactions
 - at least partially supported by information technology
 - relies on an electronic representation of the contract
- **Related research**
 - Contract modelling and automation
 - cf. [DS97], [GHM00], [GSS00], [KGV00], [BS02], [Lu03], [Mi04b]
 - Legal conditions
 - cf. [SB02], [GSG00], [BC02], [Fr04], [HN02])
 - Reference models
 - cf. [AG03], [Ru00], RSS99], [AG04]
- **Research gap**
 - Process design: organizational issues and contracting related processes
 - Gap reflects the relatively low dissemination of e-contracting solutions in practice
 - Gap hampers the process-based derivation of requirements and the design of appropriate e-contracting solutions

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The collaboration process architecture decomposes the contracting process in seven distinct micro-processes



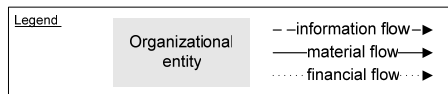
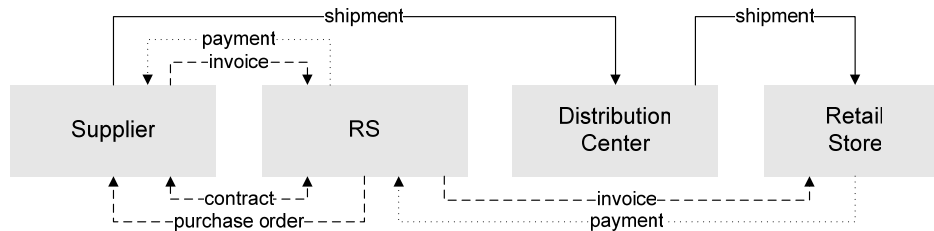
The design of process-supporting applications for E-Contracting involves four main decision dimensions

Design Decision	Alternatives			
Contract representation	Semi-structured	Structured, proprietary format	Structured, standard format	
Contracting System	Contract Management System	Records Management System	ERP System	Business Networking System
Integration	EDI / Web Services	ERP linkage	Portal	E-Mail
Signature	Electronic Signature		Digital Signature	

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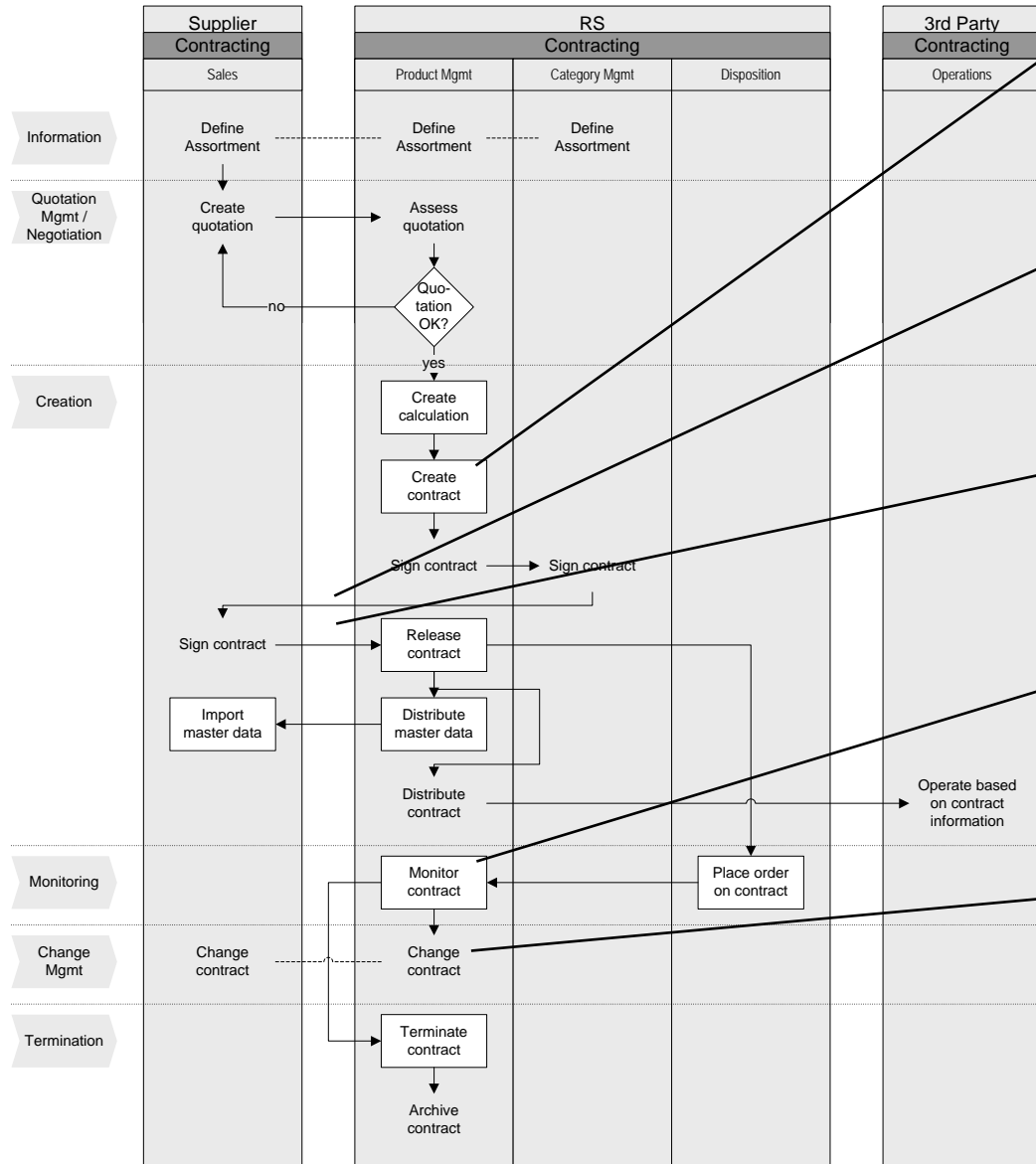
The corporation „R“ is a large European retail company



Simplified business network of R

- ca. 80'000 employees
- ca. EUR 11 billion turnover in 2004
- over 500 retail stores
- decentral organization
- „RS“ provides shared services within the group
 - e.g. category mgmt, purchasing
- ca. 15'000 active supplier contracts in 2004
- ca. 1'800 suppliers mainly from Europe and Asia

The analysis of the current contracting process revealed several pain points resulting from paper-based contract processing



Costly contract creation

- labor intensive activity
- master data transfer

Cycle times

- approval process 2-4 weeks
- Workarounds: order capture before contract signature

Postal charges

- ca. EUR 100'000 per year

Contract Monitoring

- no pro-active alerting
- orders are placed on invalid / expired contracts

Frequency of contract changes

- 20-30% of contracts are changed
- divergence of paper- and system-versions of contracts
- Costly errors in following sourcing and distribution processes

„R“ aims at providing continuous IT-support throughout the creation, change, monitoring and termination of contracts

	Key Success Factors	Performance indicators
Time	Reduced cycle time	Time between contract creation and submission to supplier
		Time between submission to supplier and contract release
	High process automation	% of IT-supported activities
Quality	Elimination of parallel processes	% of suppliers participating in e-contracting
		% of orders released without signed contracts
	Real-time access to contract information and status	% of contracts represented electronically
	Low rate of errors	Number of faulty deliveries due to wrong contract data
		Number of faulty invoices due to wrong contract data
Traceable contract changes	Number of orders placed on invalid or expired contracts	
Cost	Low costs for contract submission / distribution to business partners	Number of changed contracts without signatures of all involved roles
		Average postal charges per contract submission

Several IT-requirements for appropriate process support are not covered by the current information systems of „R“

	Requirement	Description
Integration Requirements	External Integration	integration of all external roles (suppliers, 3 rd parties) involved in the contracting process
	Internal Integration	integration with the existing internal applications, e.g. the ERP system
Functional requirements	Status Management / Versioning	contract version control and status management covering the whole contract lifecycle
	Archiving	archiving of electronic contracts
	Workflow	workflow-support for the major activity sequences in the process
	Contract conclusion	legally valid contract conclusion

„R“ identified three scenarios which were analysed in more detail

Design Decision	Alternatives			
Contract representation	Semi-structured	1 2 3 Structured, proprietary format	Structured, standard format	
Contracting System	Contract Management System	Records Management System	2 3 ERP System	1 Business Networking System
Integration	EDI / Web Services	ERP linkage	1 2 Portal	3 E-Mail
Signature	1 2 3 Electronic Signature		1 2 3 Digital Signature	

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Continuous IT-support for contracting is rarely encountered in industrial practice today

- The case of “R” illustrates key problems of companies with paper-based contracting processes today
 - high costs due to labour intensive activities
 - long process cycle times
 - Costly errors in downstream processes
 - intransparent, error-prone contract handling potentially leading to legal liabilities
- The developed framework provides support for implementing E-Contracting solutions by
 - Providing a structured process architecture
 - Highlighting key design decisions regarding the system architecture

The results encourage further research in E-Contracting

- Detailing and validation of process architecture
 - Achievements of E-Contracting processes in terms of measurable performance indicators
 - Impact of industry specifics and different contracting types
 - e.g. quotation management in Automotive / High-Tech Industries
- Consideration of specific contract types
 - e.g. service contracts
- Impact of future integration technologies
 - Role of Service-oriented Architectures / Web Services in interorganizational integration
 - E-Contracting architectures incorporating service-oriented concepts
- Legal considerations
 - Global dissemination of digital signatures
 - Localization of contracts to country specific aspects

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