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Digital Reporting in a tech-driven future

FINCOM Symposion 2021

Speaker: Prof. (FH) Dr. Tassilo Pellegrini

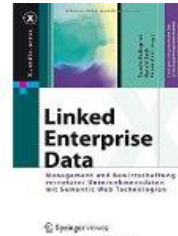Email: tassilo.pellegrini@fhstp.ac.at

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Introduction

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Areas of expertise: Information
Economics, Data Science, Semantic
Technologies, Web Technologies

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Next Tech im Digital Reporting

Digital Reporting –
„Das Reporting der Zukunft ist FACT!"

Digital Reporting

Fast & Flexible

Autonomous

Connected

Tailored

Real time & AI
selected topics

Automated proposal for standard ~~tions~~

easy to use

Story telling
to user need
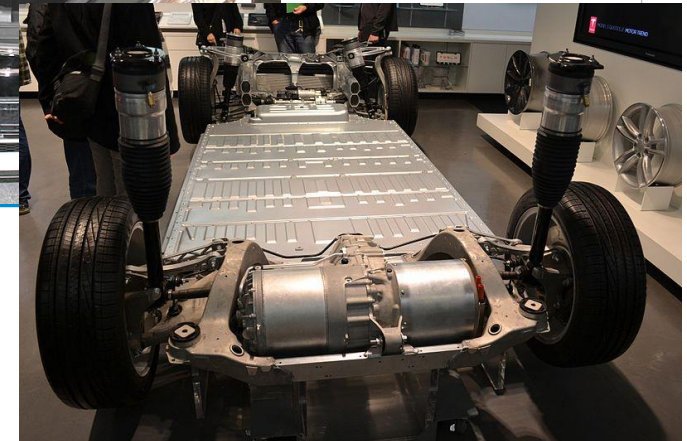
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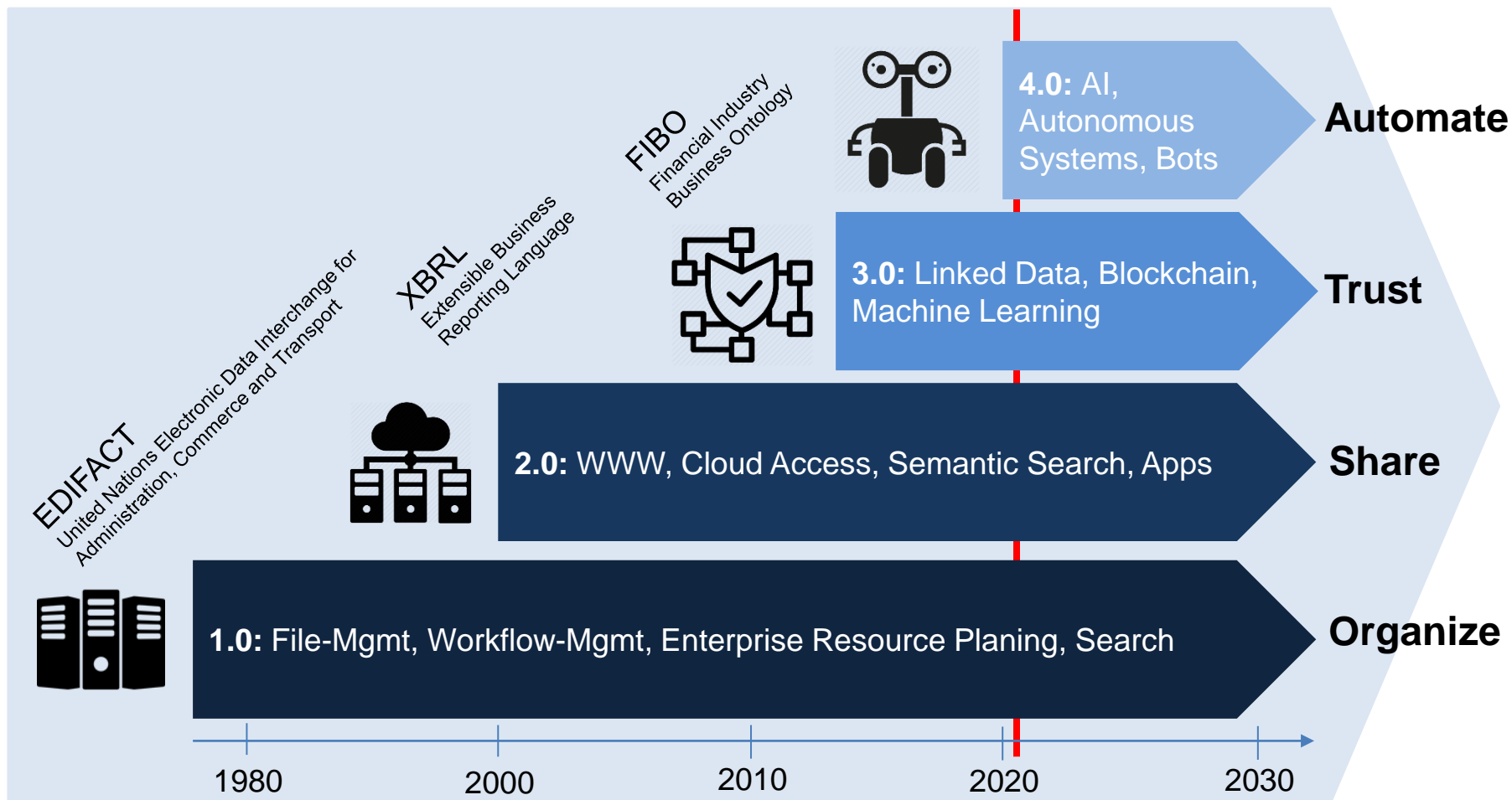
Source: Tobias, S., 2021. Digital Reporting – Durch Digitalisierung das Reporting verbessern [WWW Document]. Horváth & Partners Management Consultants. URL https://www.horvath-partners.com/de/expertise/controlling/management-reporting/digital-reporting-from-data-to-insights/ (accessed 6.9.21). Tesla images are provided under open licenses.

Digital Reporting – Tech Support

4.0: AI, Autonomous Systems, Bots — **Automate**

3.0: Linked Data, Blockchain, Machine Learning — **Trust**

2.0: WWW, Cloud Access, Semantic Search, Apps — **Share**

1.0: File-Mgmt, Workflow-Mgmt, Enterprise Resource Planing, Search — **Organize**

EDIFACT — United Nations Electronic Data Interchange for Administration, Commerce and Transport

XBRL — Extensible Business Reporting Language

FIBO — Financial Industry Business Ontology

1980 2000 2010 2020 2030

Enterprise Data Management Council (EDMC), 2021. FIBO [WWW Document]. FIBO INTEREST GROUP. URL https://spec.edmcouncil.org/fibo/ (accessed 6.10.21).

XBRL, 2021. URL https://www.xbrl.org/ (accessed 6.10.21).
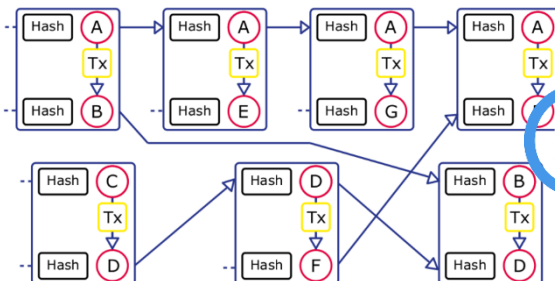
Digital Reporting – Core Technologies

Computational Semantics

- Natural Language Processing
- Knowledge Graphs
- Data Integration
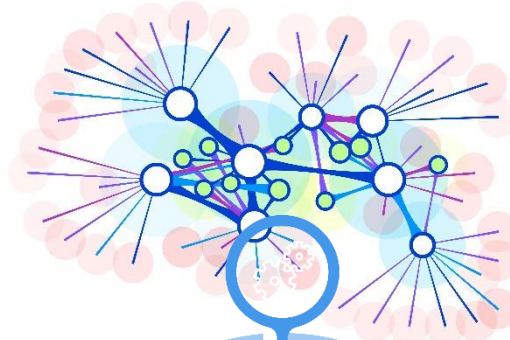
- Trusted Documents & Workflows
- Smart Contracts / Notary
- Legal Compliance

- Classification
- Patterns & Profiles
- Knowledge Discovery

Blockchain

AI

Agents (Bots)
Nat. Lang. Gen.
Analytics

Machine Learning

Semantics – Representing knowledge

Computational Semantics
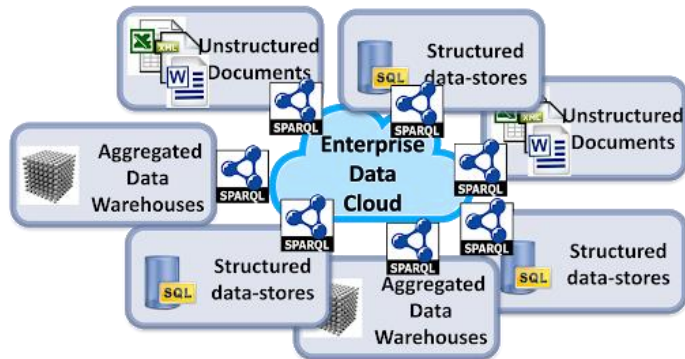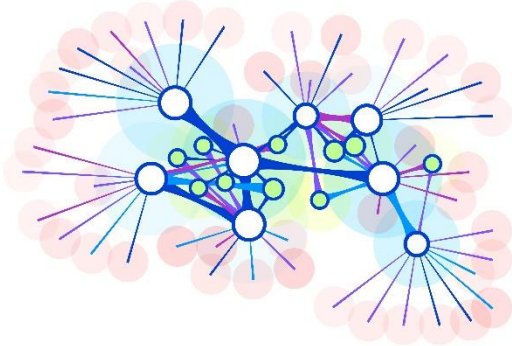
- **Natural Language Processing**

… understanding the contents of documents, including the contextual nuances of the language within them.
→ Speech Act Analysis
→ Sentiment Detection

- **Knowledge Graphs:**

… store interlinked descriptions of entities – objects, events, situations or abstract concepts – with semantics.
→ Knowledge Modelling / Maps
→ Logic Models / Reasoning over Data

- **Semantic Data Integration:**

… combining data residing in different sources and providing users with a unified view of them.
→ Knowledge Portals
→ Linked Enterprise Data

Analytics – Performing knowledge discovery

Machine Learning

- **Classification**

… the process in which ideas and objects are recognized, differentiated and understood.

→ Master Data Management
→ Activity-based Analysis

- **Pattern Recognition / Detection**

… automated recognition of patterns and regularities in data.

→ Structural Patterns
→ Behavioural Patterns

- **Knowledge Discovery**

… extracting and discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database systems.

→ Cross-domain querying of distributed data
→ Implicit Search
→ Simulation / Digital Twins
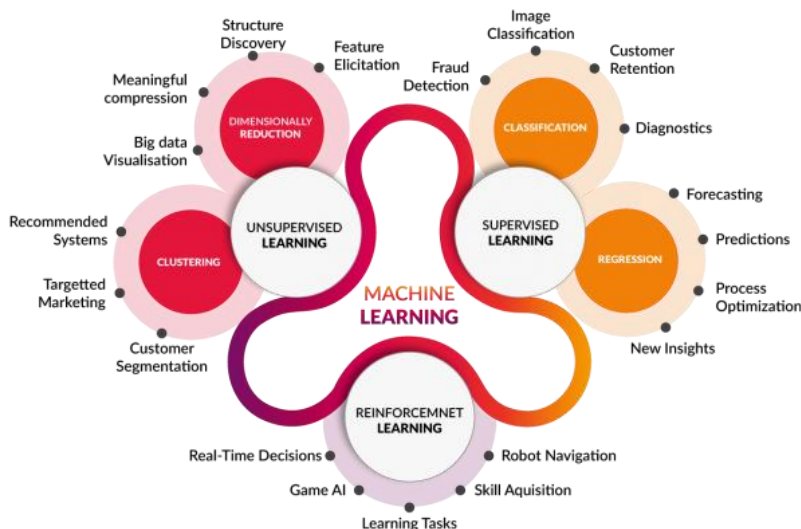
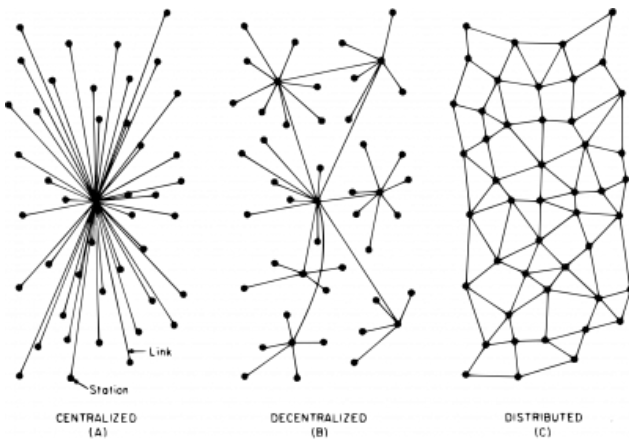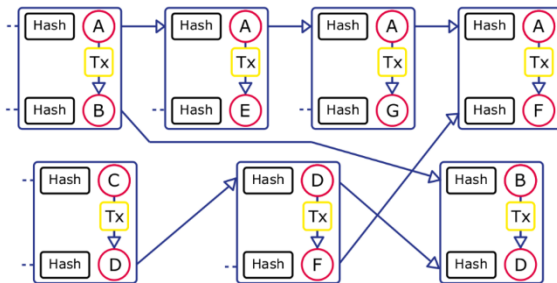# Blockchain – Building distributed trust via protocols

Blockchain

FIG. I — Centralized, Decentralized and Distributed Networks

- **Trust in Distributed Documents & Workflows**
… the generation of trusted authorities or user trust through cryptography and distributed ledger protocols.
  - → Distributed Ledgers
  - → Secure Collaborative Worspace

- **Smart Contracting / Notary**
… is used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss.
 - → Autonomous (Legal) Agents
  - → Accelerated transaction processing

- **Governance, risk and compliance management (GRC)**
… a management discipline that takes an integrated firm-wide approach to meeting external and/or internal guidelines set for each activity.
  - → Reduction of Security Costs
  - → Reduction of Compliance Costs

Implications – Learnings form LegalTech (→ replace lawyer with expert)
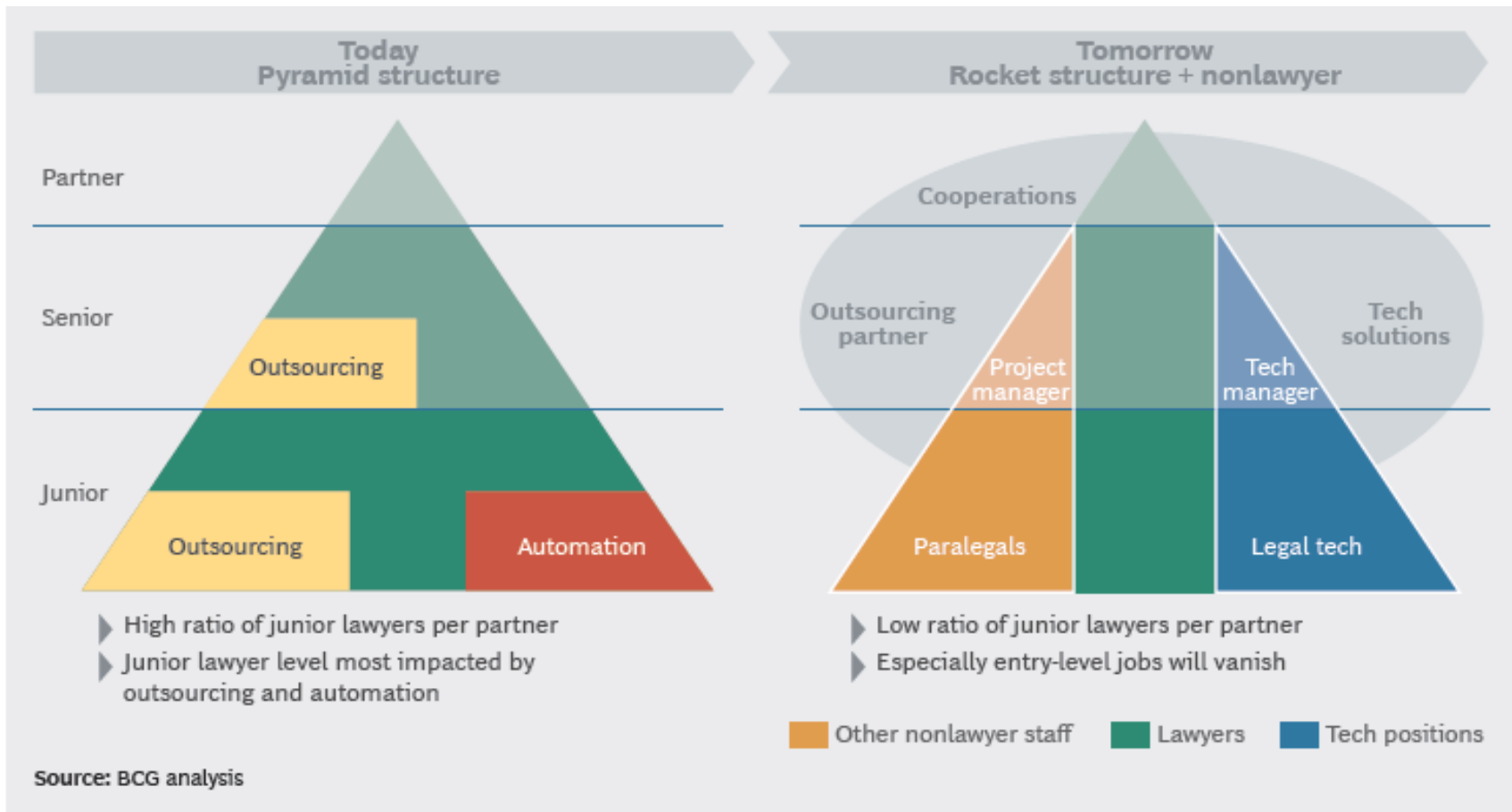
Take away(s)

Digital Reporting in 2030, maybe 2025 …

- **needs data** – trusted, annotated, linked, accessible, shareable
- **is collaborative** – ecosystem of human and non-human agents built upon compliance protocols
- **goes beyond reporting** – from data literacy to knowledge discovery to information services

- **Don't worry! Datafication will go by!**
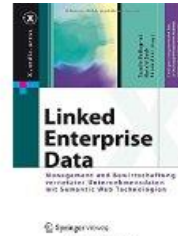
Cordial thanks for your attention!

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