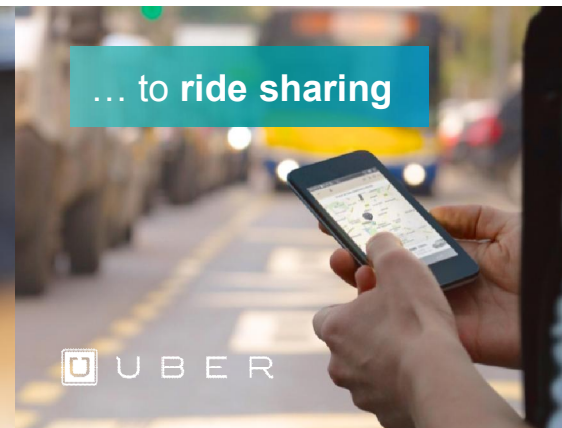
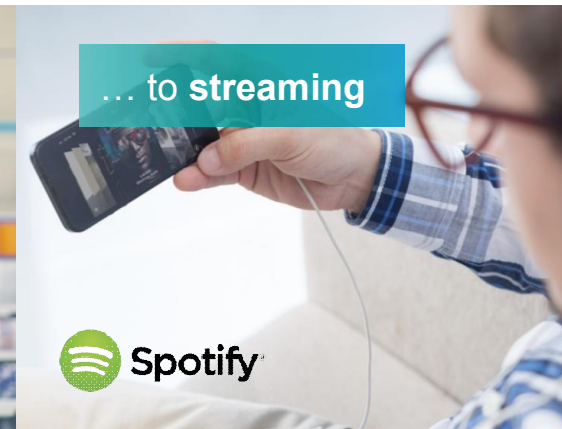
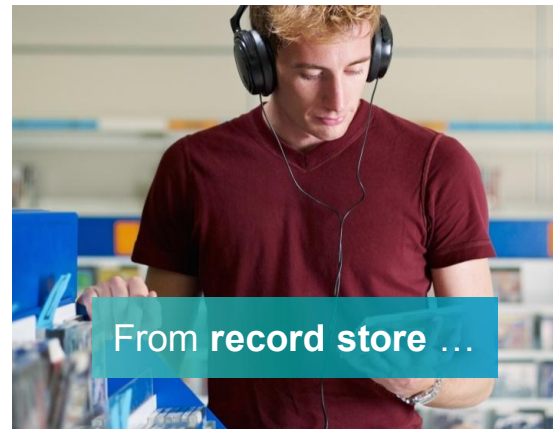


IoT – Challenges for IP Management and the IP System

GRUR Fachtagung 27.09.2018, Berlin
Beat Weibel, Chief IP Counsel Siemens

New business models in the internet age are disrupting complete markets

SIEMENS
Ingenuity for life



We are living in VUCA world:
Volatil, unsicher, komplex, mehrdeutig

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VUCA

Volatile

The environment demands you react quickly to ongoing changes that are unpredictable and out of your control

Uncertain

The environment requires you to take action without certainty

Complex

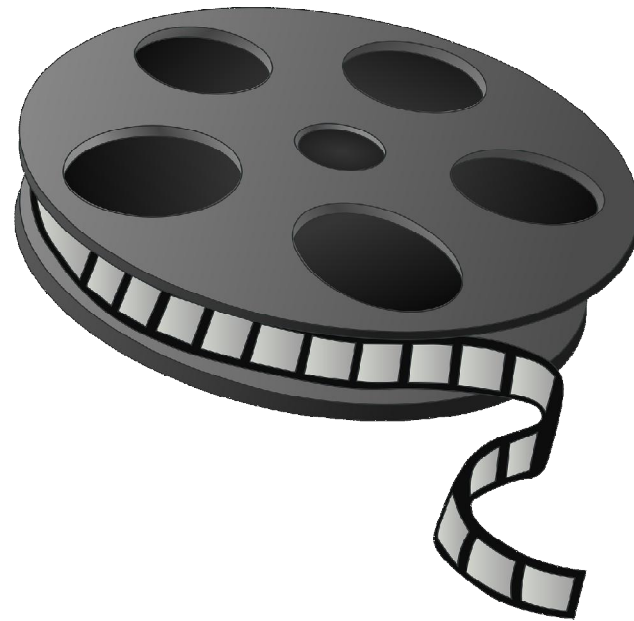
The environment is dynamic, with many interdependencies

Ambiguous

The environment is unfamiliar, outside of your expertise

Video: Digitalisierung bei Siemens

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With Siemens' integrated technologies, Maserati reduced development time while increasing production output

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30% shorter
development time

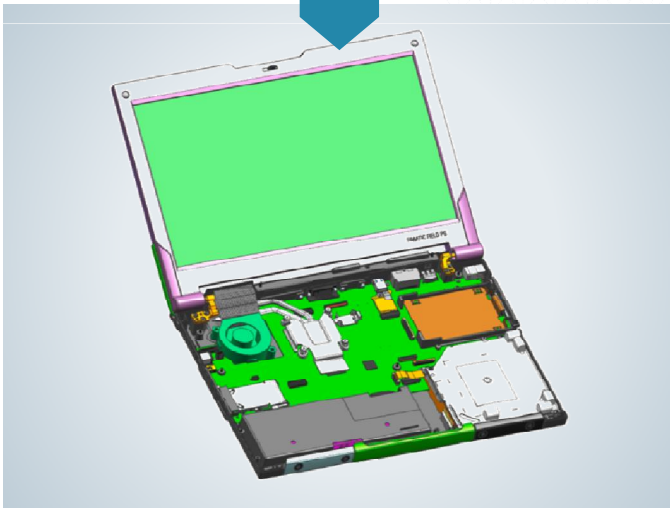
More than **70,000**
combinations
available

3 times more
cars produced

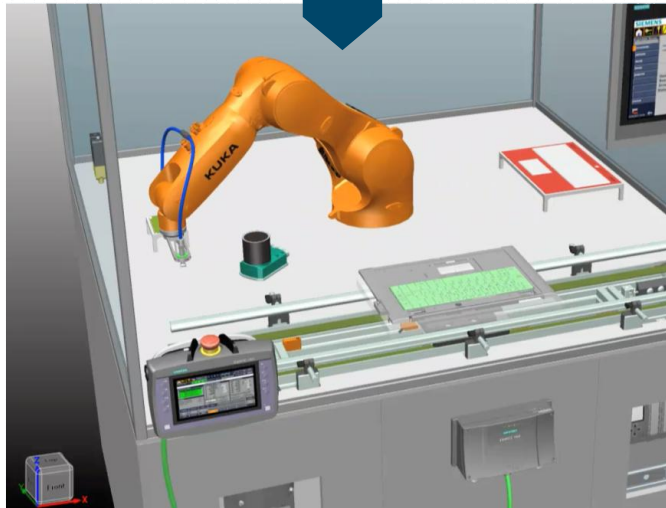




feed back insights to continuously optimize product and production



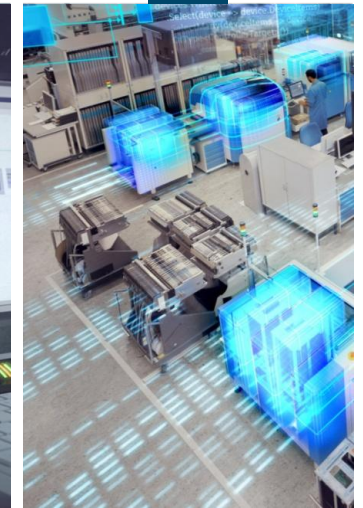
Digital Twin of the product



Digital Twin of the production



Digital Twin of the performance



MindSphere – the cloud-based, open operating system for the Internet of Things from Siemens



MindApps

Asset transparency and analytical insights into machines, plants, fleets and systems

IP protection inhouse apps
Right to use external apps?



Licensing of MindSphere platform

MindSphere

Various cloud infrastructures:
Public, private or on-premise

IP protection
MindSphere SW
platform

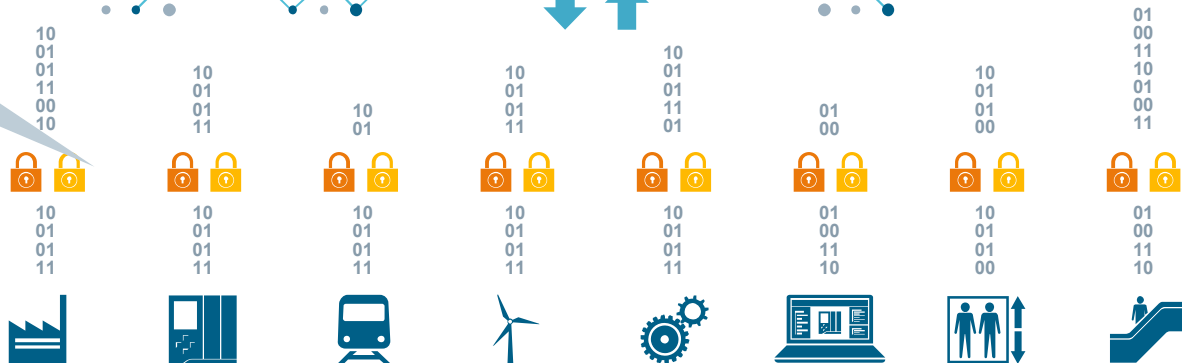
MindSphere

IP protection for
connectivity and in
particular IT Security

MindConnect

Secure plug and play connection
of Siemens and third-party products

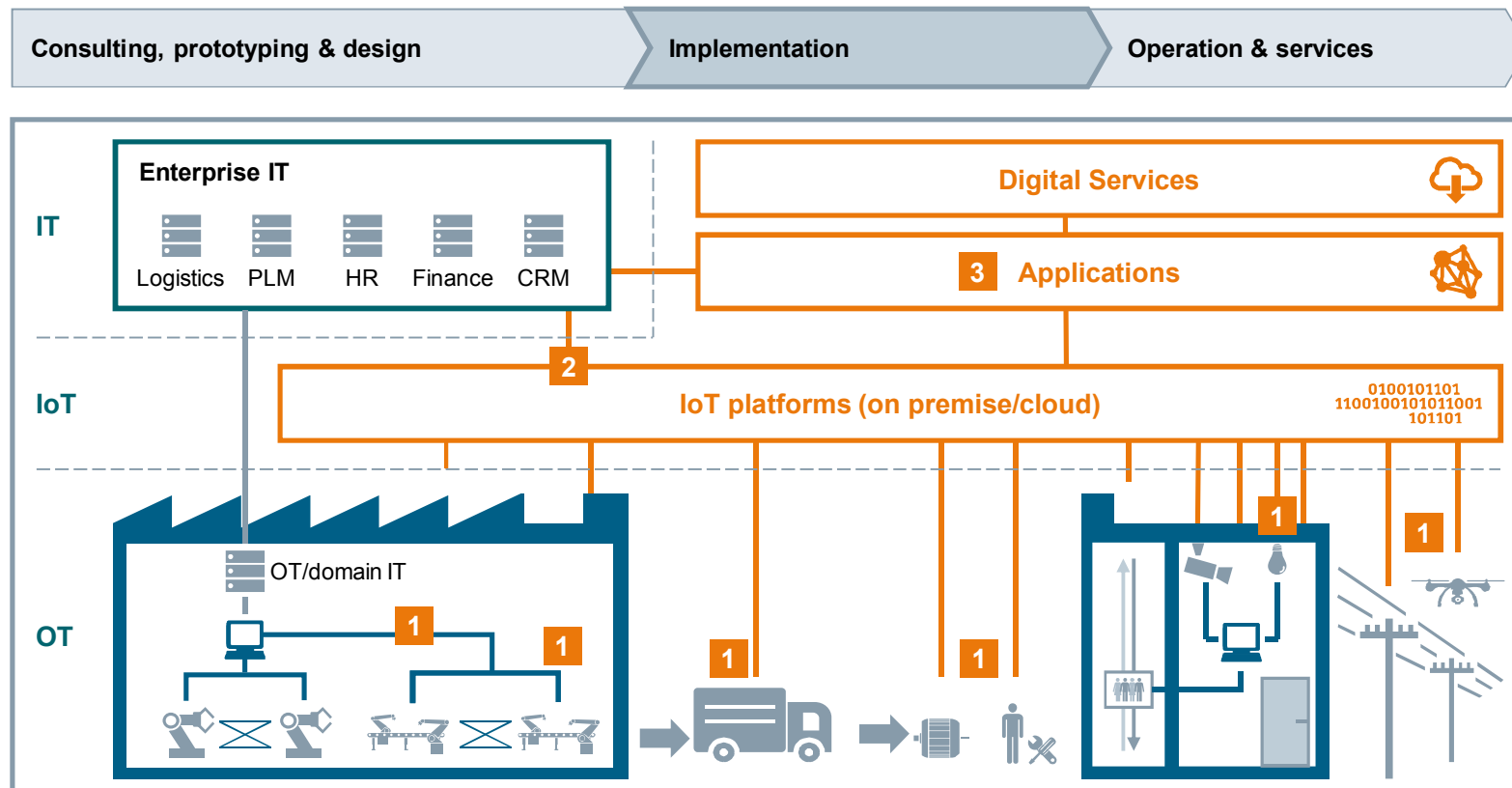
IP protection for basic
technology and so called
vertical Domain KH



IoT drives close integration of IT and OT while increasing number of connected assets significantly



IT, OT, IoT landscape and IoT integration services



- ### IoT Integration
- 1 Interconnecting all devices/ assets to IoT Platform
 - 2 Connecting with Enterprise IP (e.g. SAP)
 - 3 Develop apps for digital use cases

- ### Consequences for IP
- New business offerings:
 - Consulting, prototyping, design
 - Implementation
 - Operation & services
 - New Competitors
 - Open IoT system
 - Need to understand business model / USP.
 - Need to understand what shall be kept proprietary and what to license.

Note: IoT platform & digital service offerings not in focus of integration services

1) Incl. adding of sensors and installing / upgrading comm. system 2) Incl. cyber security Source: CD SD, CD SP, SMC

OT system Service IoT IT OT

Digitalization means new competitors but at the same time established customers

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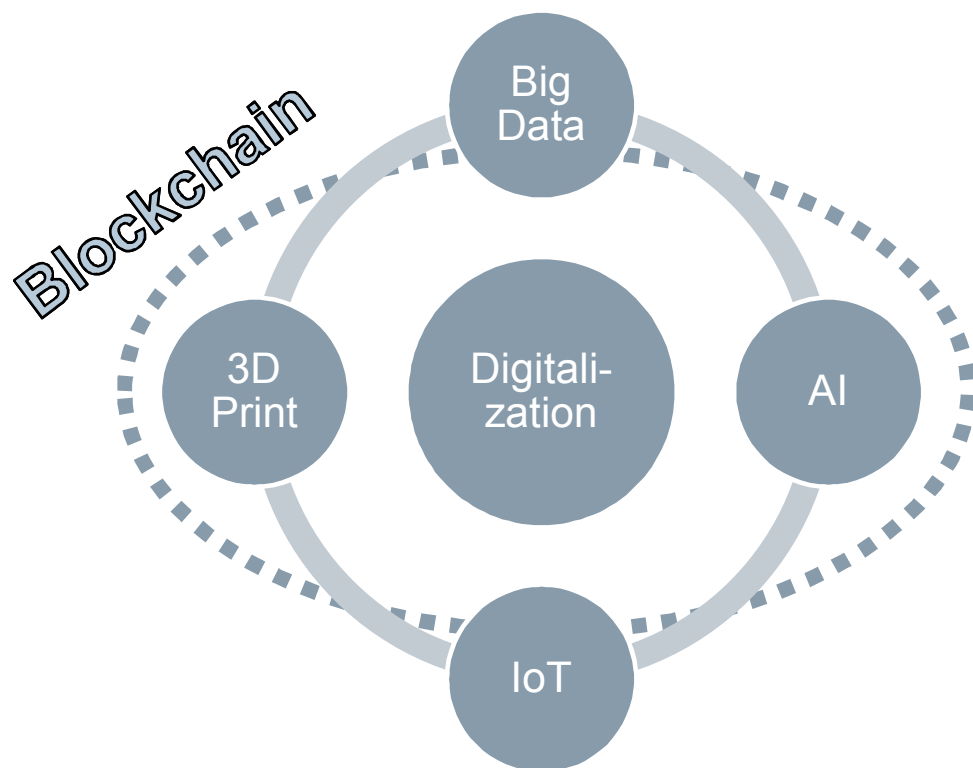



TATA
TATA CONSULTANCY SERVICES

New competitors

- Digitalization and Big Data allow offering independent from product and process knowledge
- New competitors coming from the IT and consulting field are able to successfully offer business without having own “domain know how”
- Need to protect Domain Know How and Business Model

Major technological trends of Digitalization



Characteristics

- Big Data applications allow to optimize processes even if underlying technology is not mastered: new competitors; new business models; fuzzy inventions
- Artificial Intelligence is finally achieving breakthrough thanks to increased computing power; where is the invention? Who owns the invention? Who is the inventor?
- 3D Printing: distributed manufacturing; what shall be protected? Where is IP infringed?
- Internet of Things: Connectivity is key but where are the inventions? Need to protect applications
- Blockchain: distributed ledger
- Disruptive potential!

Consequences for IP protection

- Fuzzy – distributed – hard to detect (inventions and infringements)
- Companies need to constantly innovate

What does Digitalization mean for IP Management

Complex system of IP protection and IP based business model

Patents / Utility Model / Design etc.

- Protect software tools / applications as far as there are patentable inventions
- Protect so called „vertical Domain Know How“
- Design protect against copying of e.g. 3D printed products
- Protect inhouse apps

Trade secrets / Copyright

- If not possible to reverse engineer at final product, keep Domain Know How secret (new EU directive!)
- IT security know how
- Copyright / Licensing of platform
- Combine IT security with IP protection

Business Model

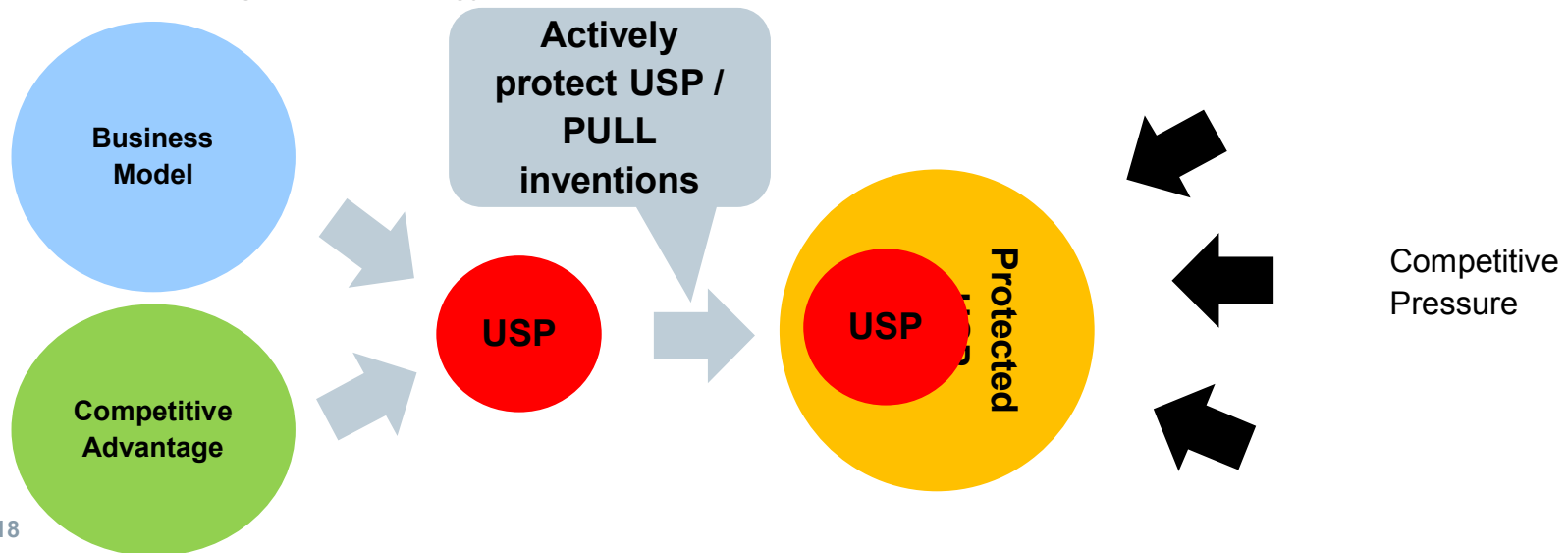
- Big Data applications allow to optimize processes even if underlying technology is not mastered
- ⇒ Understand business model
Where proprietary?
Where open?
- ⇒ Create ecosystem
- ⇒ Platform is crucial: open vs. proprietary
- ⇒ Need to define IP contribution

From invention driven IP Strategy to Value driven IP Strategy

Conventional Invention driven IP Management Strategy



Value driven IP Management Strategy



The imp
Mgt: W
in Afric

China's Transsion phones outsell Samsung in Africa

By MA SI in Beijing and PAN ZHONGMING in Nairobi, Kenya | China Daily | Updated: 2017-02-09 07:06



How a small firm is set to charm the continent

Transsion has set up two R&D centers in Nigeria—Africa's most populous country—and Kenya to offer tailor-made smartphone features for its African customers.

Making dark skin shine in selfies

Everyone in the world loves selfie, and African customers are no exception. But it is quite difficult for them to have good pictures, because darker skin makes it difficult for many cameras to recognize their faces. To solve this problem, Tecno smartphones locate consumers' face by focusing on their teeth and eyes. It has performed data analysis on African users' face shapes, colors and their preferences of photo effects to determine how much extra light exposure is needed to lighten up their photos.



News

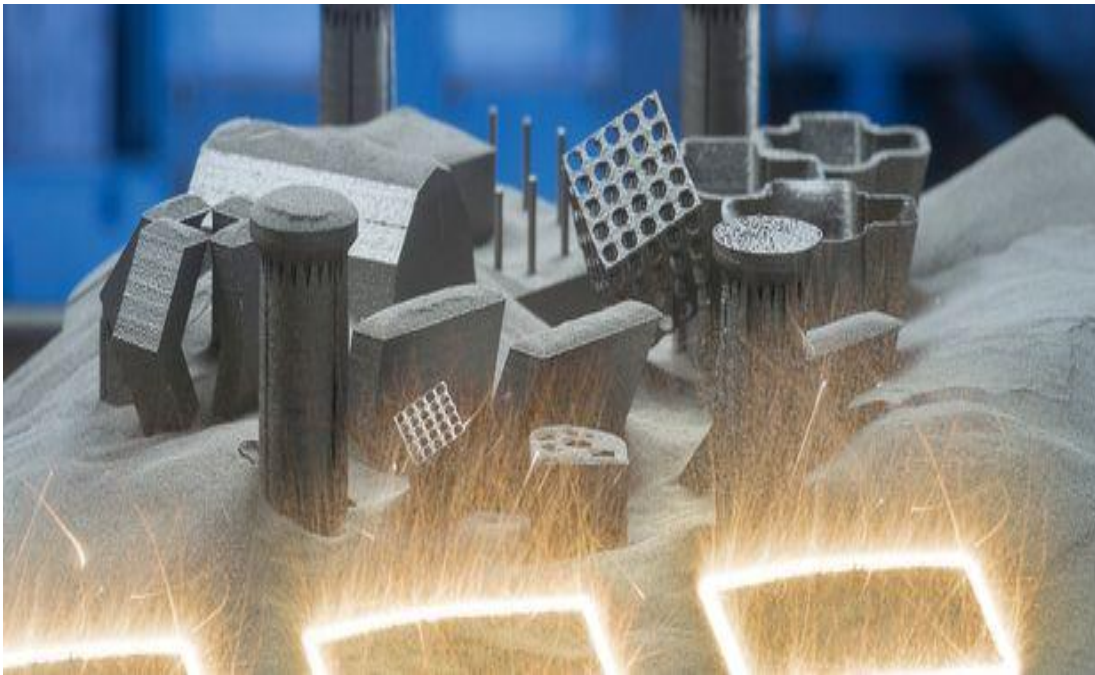


Blockchain for Baggage Handling



Tracking baggage in airports

- Responsibility for lost or misled baggage is a highly disputed question between the involved parties like airports, airlines, ground handlers, IT suppliers insurances etc.
- Siemens not only provides systems for the unique identification of baggage but also tracks the contacts in a blockchain that is made available to the involved parties
- This allows a reliable identification of the responsibility for a mistake in baggage handling and minimizes the disputes

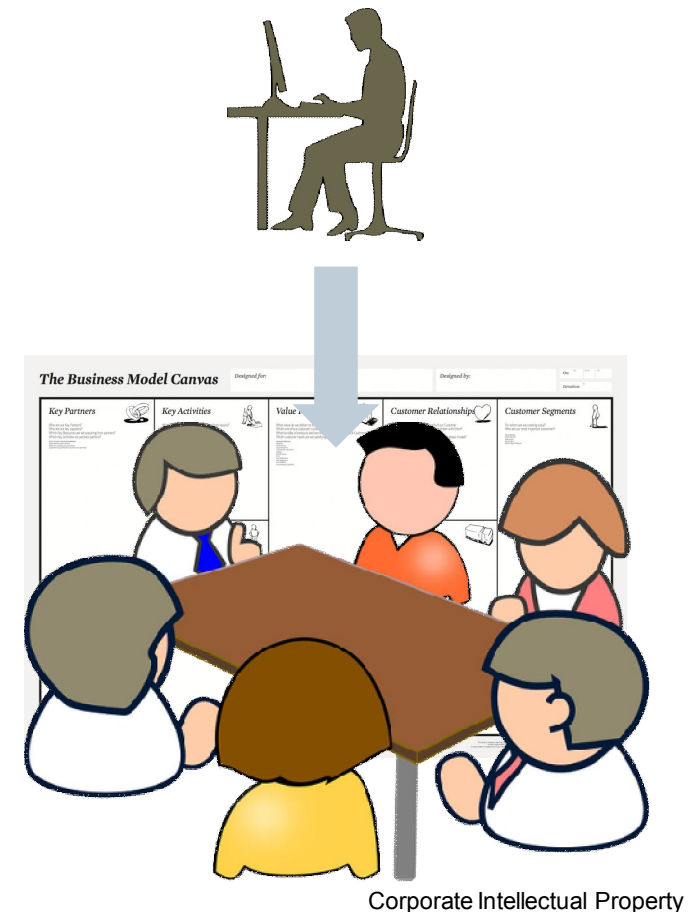
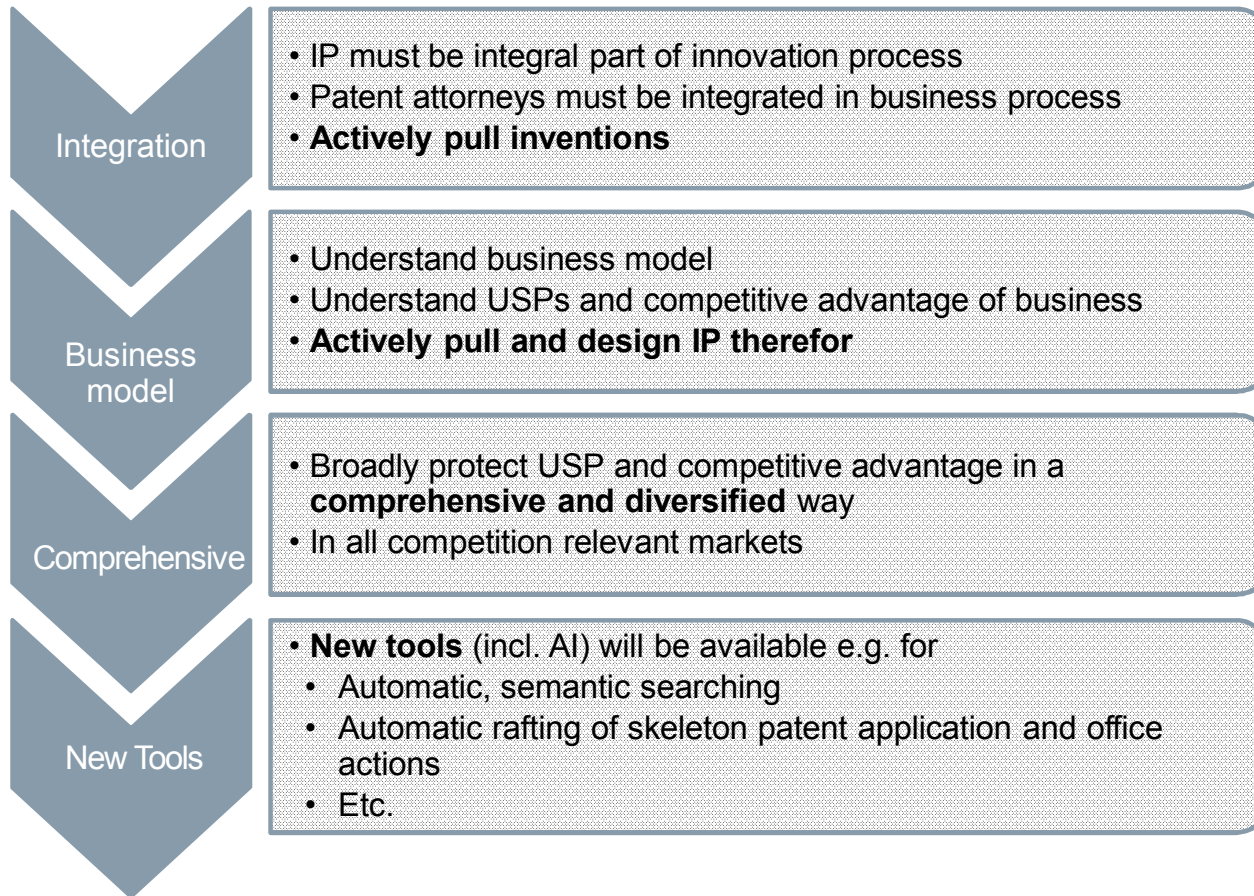


Quality control of 3D printed products

- Quality control for 3D printed products is an important success factor for customers
- Since it is a new technology, customers want to be sure that the product has the expected quality and that the layers e.g. don't include air bubbles or other deficiencies
- To allow a reliable and independent quality control by the customer, Siemens is able to store the quality parameters of all layers in a blockchain and give access to this data to the customer

Patents in a digital world

Challenges for IP Management and Job Profile

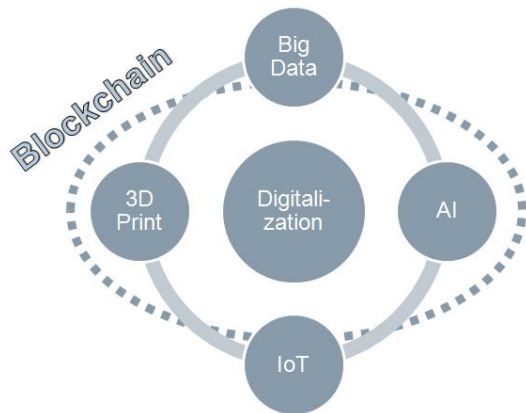


Challenges for the IP System Digital Inventor?

SIEMENS



Patents in a digital world: Challenges for IP System



Challenges

- New technologies with disruptive potential and new business models and competitors force companies to constantly innovate
- The IoTworld is intensively interlinked. Like in a “bring your own” party the market participants contribute to the party of Digitalization. Definition of the mutual contribution is therefore very important. Free-riders are not welcome.

Conclusions and needs for a modern IP System

- The IP System needs an answer for artificially intelligent created inventions and designs. Extension of the inventor/creator definition to legal persons could be a possible answer.
- Agile and quick registration rights to document scope and origin of innovation
 - Quicker protection for SW inventions E.g. by utility models for method claims
 - More flexibility in EPC examination (UDEEC)
- Better protection for SW inventions including copyright in SW code (e.g. registry?)

Danke für Ihre Aufmerksamkeit

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Corporate Intellectual Property

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