Digital World 2019

February 24-28, Athens, Greece

Panel:
Advances on Human Interaction and Thinking
Theme: Knowledge

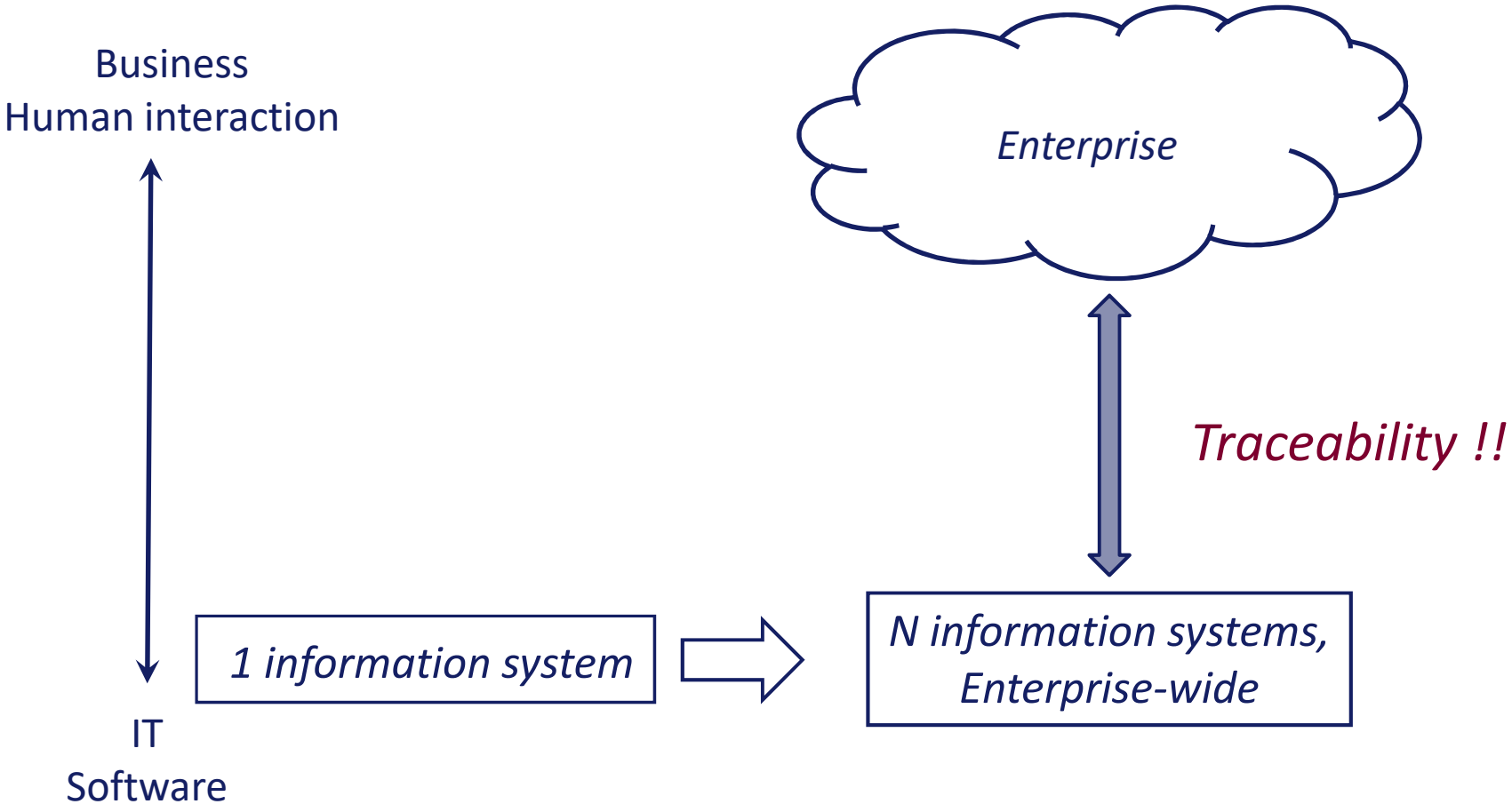
Marcus Grube, VOQUZ IT Solutions GmbH, Germany
Jiro Tanaka, Waseda University, Japan
Dobrica Savic, IAEA, Austria
Herwig Mannaert, University of Antwerp, Belgium

Universiteit Antwerpen

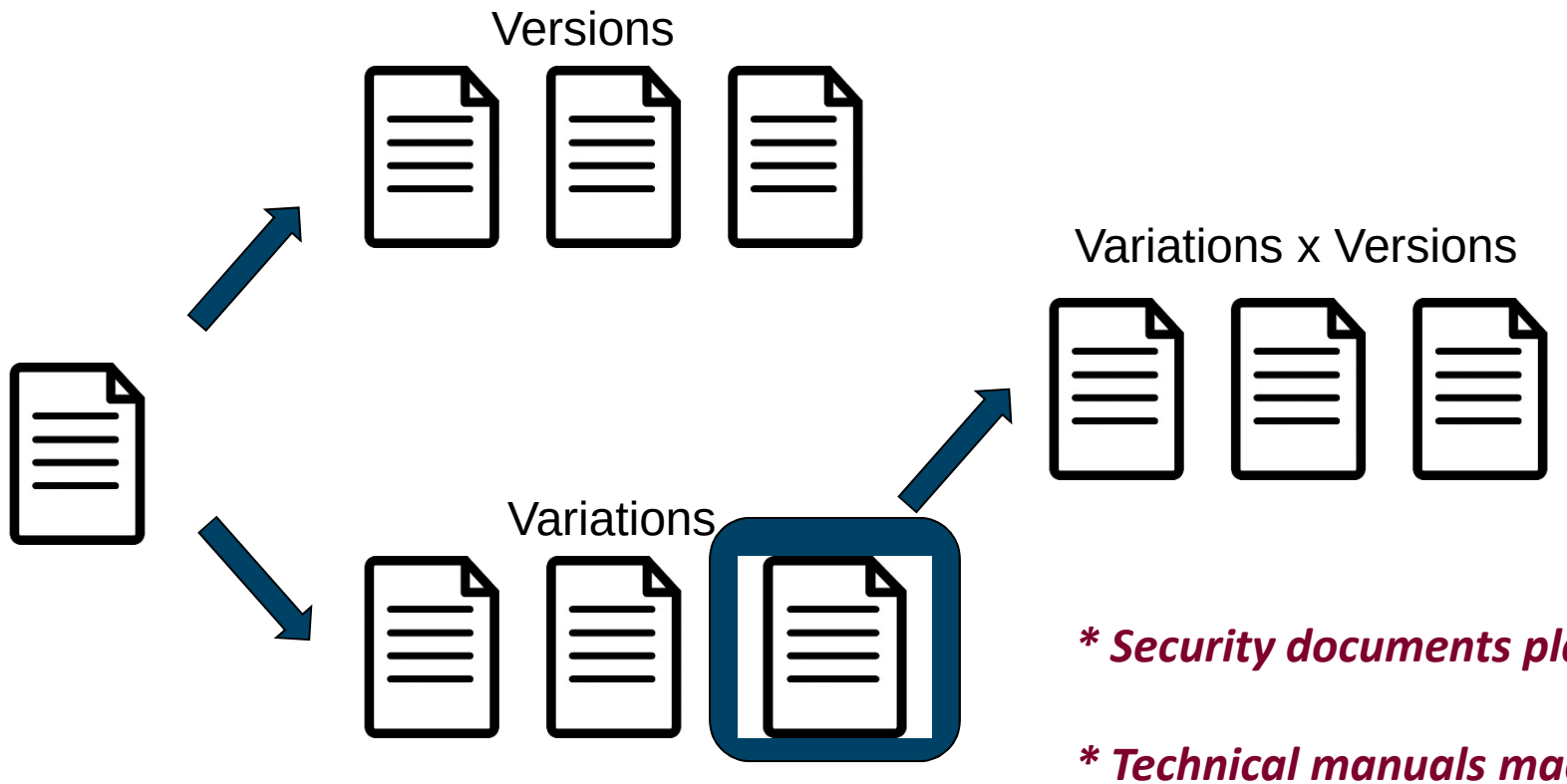
Advances on Human Interaction and Thinking

- Marcus Grube
  - We create software to consolidate and store knowledge
  - Storing and handling knowledge is not easy
  - Humans users often bypass it for human interaction
- Jiro Tanaka
  - Human Computer Interaction
    - Improving it to support human interaction and thinking
- Dobrica Savic
  - From digitization and digitalization to digital transformation
  - Digital transformation needs to leverage knowledge and thinking
- Herwig Mannaert
  - We need to consolidate the software that consolidates knowledge
  - E-learning should address re-use and evolvability of content

Consolidate the Software Through Traceability



Re-Use and Evolvability of Knowledge Content

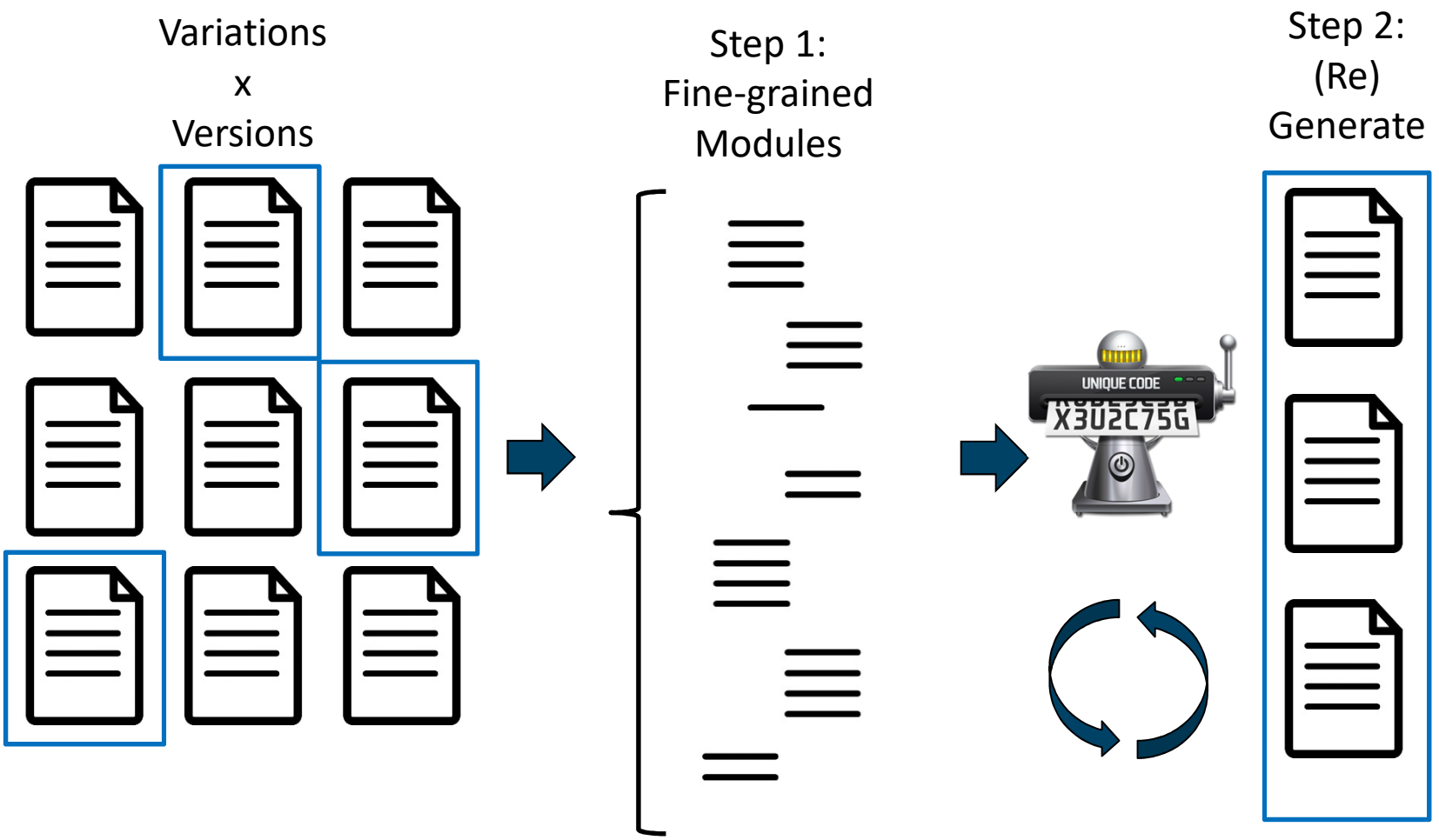


**** Security documents plants***

**** Technical manuals machines***

**** Accreditation body reports***

Re-Use and Evolvability of Knowledge Content



Questions, Remarks, Comments, …

DigitalWorld 2019

Panel on Human Interaction and Thinking
27 February 2019, Athens

From Digitization and Digitalization to Digital Transformation

Dr. Dobrica Savić

linkedin.com/in/dobricasavic

Digitization

Conversion from analog to digital format

Scanners

- In the late 1990's the rise of commercially available hi-resolution (e.g. 600 DPI or more) triggered the mass conversion of analog data (paper archives) to digital format.

CD-ROMs

- The invention of the first compact disk (CD) in 1982 offered a cheap storage and distribution medium, used not only for storing paper documents but also for the conversion of audio and video analog formats such as LPs, cassettes, film reels, and VHS tapes.

New formats

- TIFF, DjVu, PDF help convert microfilms and microfiches

Benefits

- Usability, the speed of access, transferability, and the possibility of further processing.

Digitalization

Automation of business processes

Powerful IT

- The automation of various business processes/operations based on powerful IT hardware and software.

Enthusiasm

- Huge investments in purchasing, developing, deploying, and maintaining different applications, but still dealing with single tasks using unrelated technologies that hardly ‘talked’ to each other.

Phases

- The initial phase where single operations or processes are automated
- The mid-phase where related processes are automated and joined together.
- The third, most complex phase, where multiple systems that support business processes and information flows are integrated.

Benefits

- Although siloed information and distinct, different, and sometimes redundant applications were common, digitalization helped lower production costs, optimize business results, and sometimes even created new revenue options and new customer experiences.

Digital transformation

The creation of a digital company

Doing things differently

- Creating a new business model by using modern IT, leveraging existing knowledge and profoundly changing the essence of the organization - its culture, management strategy, technological mix, and operational setup. Pursue new revenue streams, products and services.

Customer-centric approach

- Placing the customer in the centre of all its decisions and actions.

New technologies

- Maximize use of mobile applications, AI, cloud computing, analytics, chatbots, and other digital services.

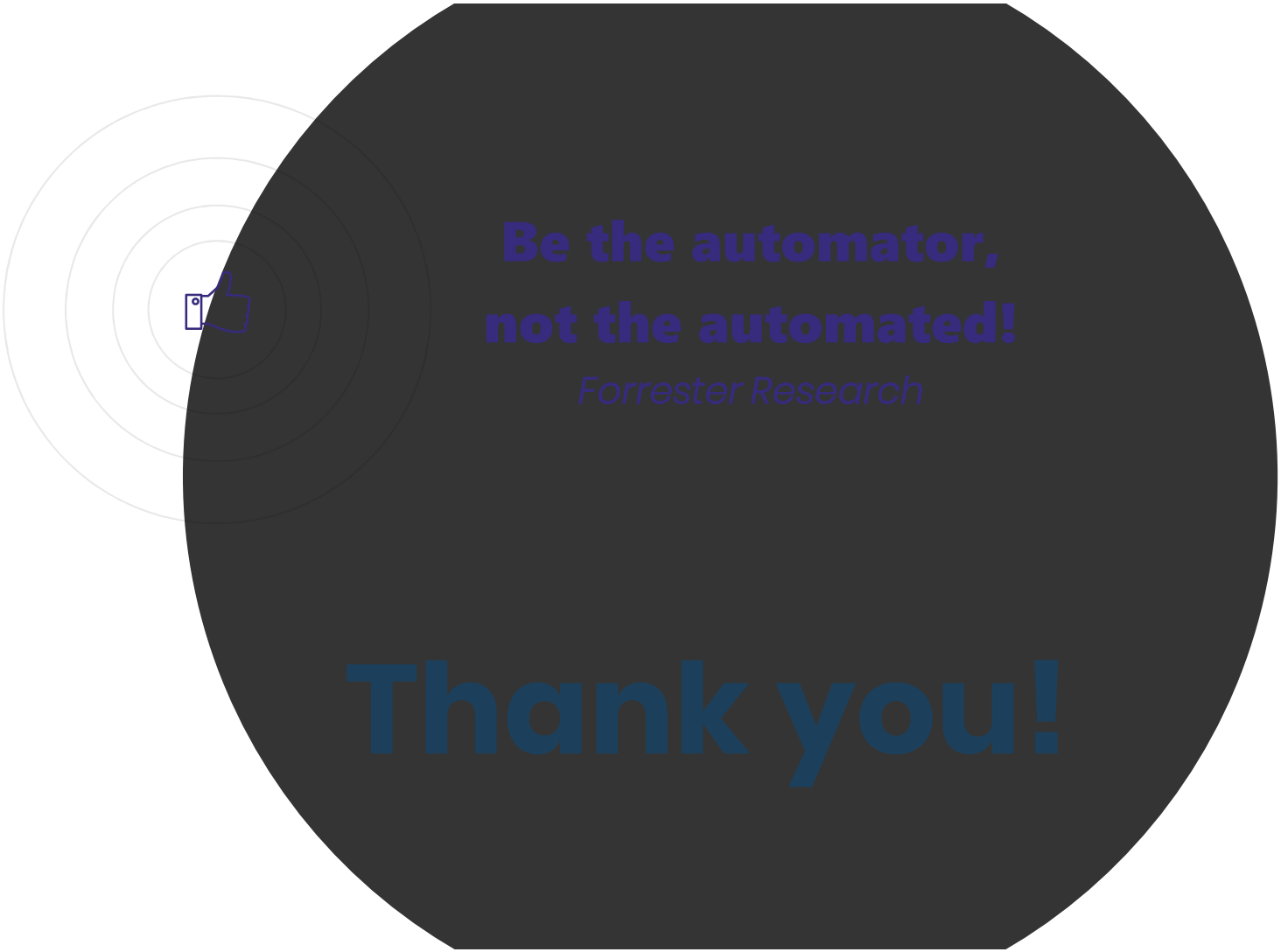
Benefits

- Customer satisfaction, profitability, process streamlining, new business opportunities.

Within the next 10 years, 85% of all jobs will be impacted by digital transformation (Forrester)

The pace of change will never be this slow again!

	DIGITIZATION	DIGITILIZATION	DIGITAL TRANSFORMATION
Focus	Data conversion	Information processing	Knowledge leveraging
Goal	Change analog to digital format	Automate existing business operations and processes	Change company's culture, the way it works and thinks
Activity	Convert paper documents, photos, microfilms, LPs, films, and VHS tapes to digital format	Creation of completely digital work processes	Creation of a new digital company or transformation to a digital one
Tools	Computers and conversion/encoding equipment	IT systems and computer applications	Matrix of new (currently disruptive) digital technologies
Challenge	Volume *Material*	Price *Financial*	Resistance to change *Human resource*
Example	Scanning paper-based registration forms	Completely electronic registration process	Everything electronic, from registration to content delivery
			

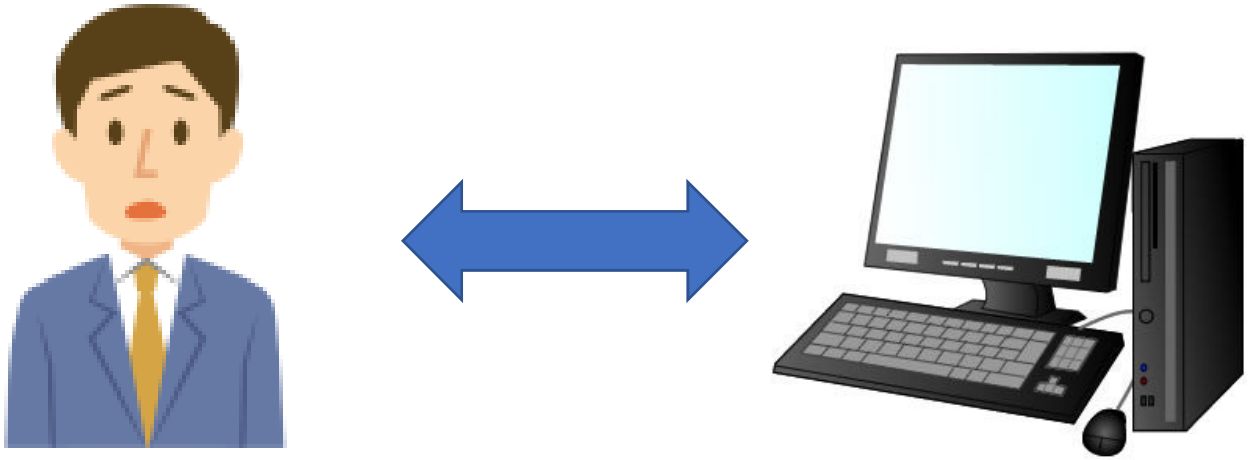

Be the automator,
not the automated!
Forrester Research
Thank you!

Panel on Human Interaction and Thinking

Jiro Tanaka
jiro@computer.org
Waseda University

What is Human-Computer Interaction?

Human-Computer Interaction cares the interaction between Human and Computer.

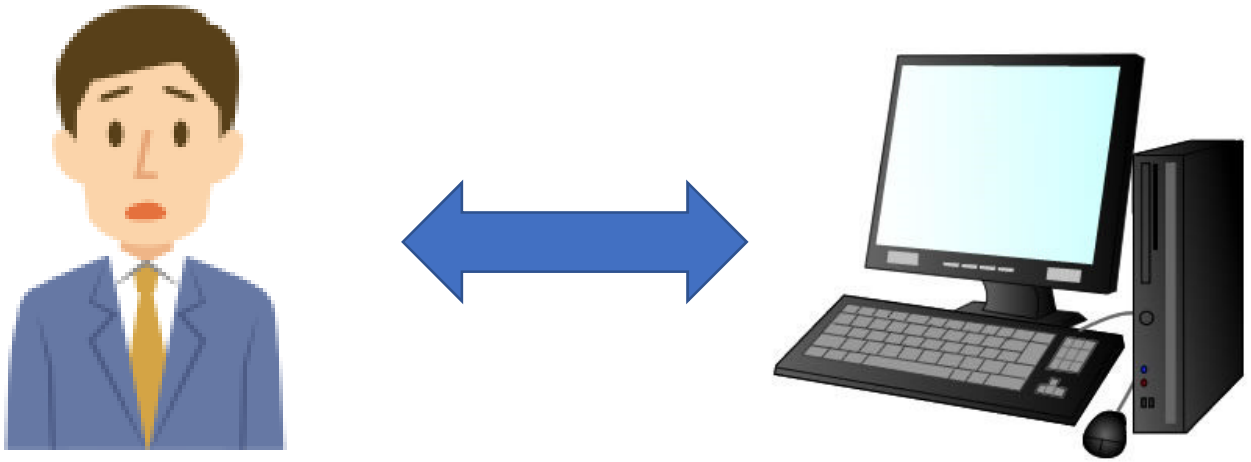


human

computer

Human-computer Interaction and Thinking

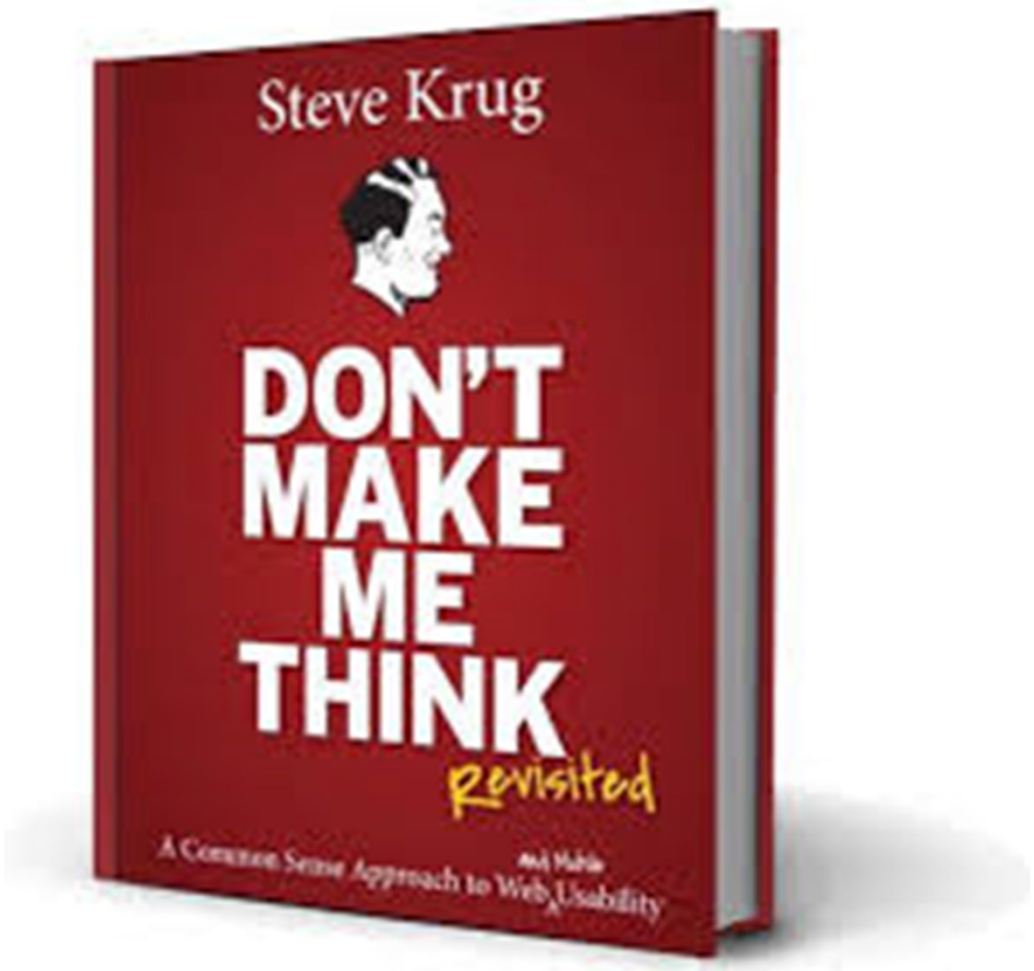
Which will think?



human

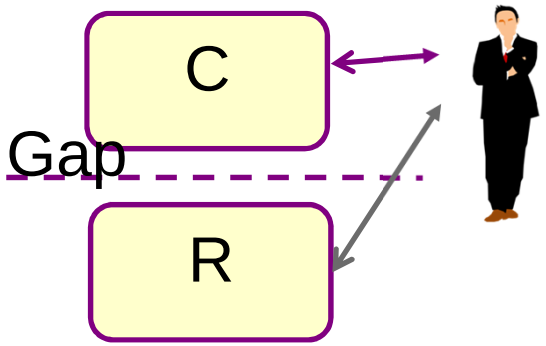
computer

Interface which makes me think is bad!

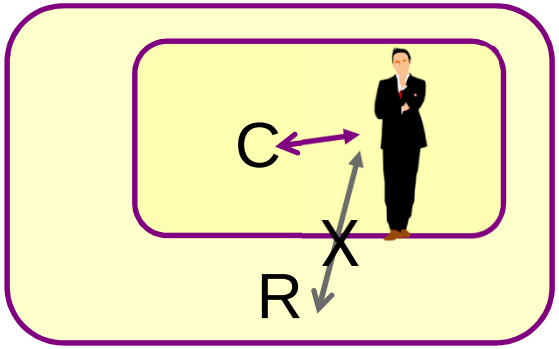


Advances on Human Interaction
--Computer and Real World--

- (a) Desktop Computing



- (b) Virtual Reality

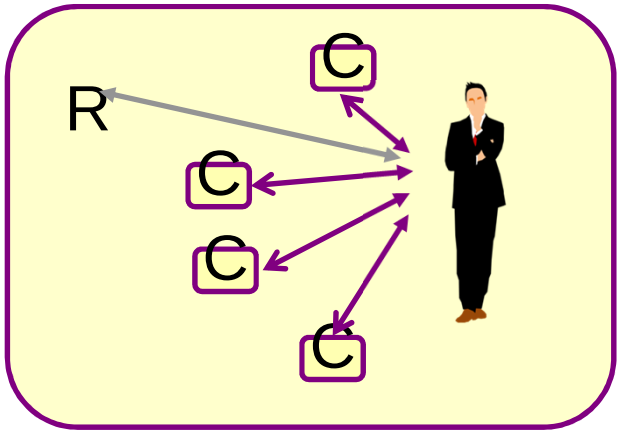


C Computer world
R Real world

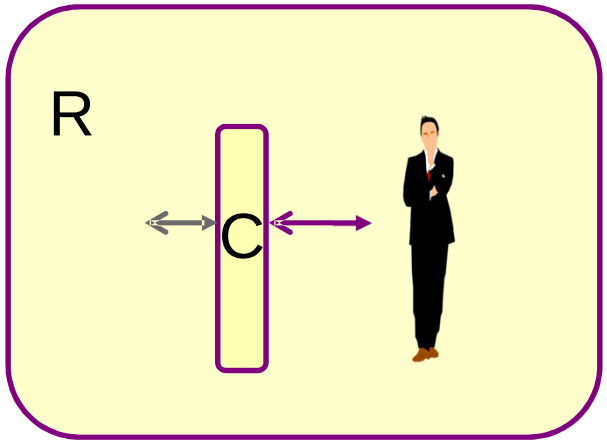
Advances on Human Interaction

--Computer and Real World(2)--

- (c) Ubiquitous Computing or IOT



- (d) Augmented Reality



C Computer world
R Real world

Human interaction and Think

- Computer must be intelligent and needs to understand the environment of the real world.
- HCI needs to **think** about user's current context (user's activity and surrounding environment).

HCI in future

- Just logical is not enough, because human is not always logical.
- Supporting the emotion of the user may also be important.

VOQUZ

Markus Grube, PhD

VOQUZ IT Solutions

Hamburg

Germany

Panel on

Knowledge Human Interaction Thinking

from the business process view

VOQUZ

About Markus Grube

SAP & Business consultant

Hamburg, Germany

SAP experience since 2001

About VOQUZ

- IT solution and service provider
- Founded 1980
- Over 400 employees
- 13 countries
- Internationally traded products

samQ
LICENCE OPTIMIZER
FOR SAP®-SOFTWARE

setQ
AUTHORIZATION MANAGER
FOR SAP®-SOFTWARE

datQ
DATA GOVERNANCE
FOR SAP®-SOFTWARE

VOQUZ

Human Interaction and Thinking

- In a broader sense, every programming is knowledge processing
- Each program encodes and processes knowledge
- We create software to consolidate the knowledge
- But, we do not know exactly what the software already know
- We are sometimes surprised:
  - About the knowledge stored in IT
  - How users use their knowledge to manipulate IT systems

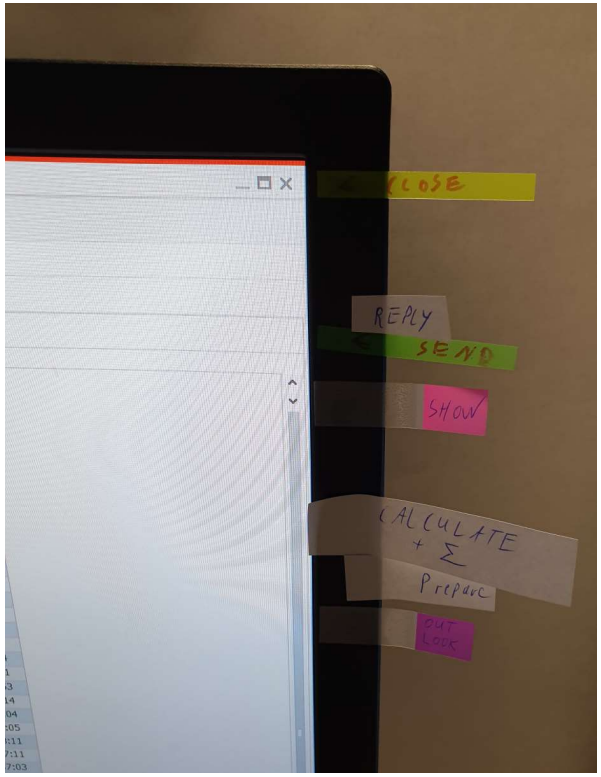
Process Mining & Knowledge

- You can use Process Mining to analyse business processes but…
  - Process Mining analyses the current status of the operational data application
  - The knowledge of users is (often) more powerful and complex
  - The knowledge of key users is often not stored within the IT
  - You need users who look at the overall picture
  - These users, their knowledge and how they think is important

VOQUZ

Users

- Types of users:
  - fulfil the system requirements
  - bypass the system requirements



- Ask why users bypass the system?
- Why they use the IT differently than expected?
- These people can be very important for your process analysis

VOQUZ

Human Interaction and Thinking

- Analyse your users and IT also after introducing something new:
  - What knowledge stored in IT systems?
  - Is there knowledge that is not stored or to complex to handle?
  - How do (key) users deal with IT?
  - Which user bypasses the system and why?

Human Interaction and Thinking

- To store and handle knowledge is not easy
  - Learn from the experiences of (key) users and save this knowledge
  - Do not make the IT system and knowledge storage too complex!
  - Think about how to consolidate knowledge in (different) IT systems and if that reflect the requirements

VOQUZ

Markus Grube, PhD

VOQUZ IT Solutions

Hamburg

Germany

Panel on

Knowledge
Human Intuition
Thinking

Thanks for listening

from the

business process view