- Logistics and supply chain management
- Innovation network
- Research & Development
- Knowledge sharing
- Demonstration & discovery
- New business opportunities
- THE hotspot for supply chain professionals

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Human Aspects in logistics and PI
IPIC, Groningen, 21st June 2018

TKI DINALOG
Dutch Institute for Advanced Logistics

Why this session

- Organisations and professionals are running the show!

- What is the role of human behaviour in the development of the Physical Internet concept?
- Do organisations need to change in order to collaborate in hyperconnected logistics networks? If so…how to evolve?

- We will explore and discuss in this session the power of collaboration, the role of interdisciplinary research and the impact of the Physical Internet on human capital and organisations in the logistics sector.
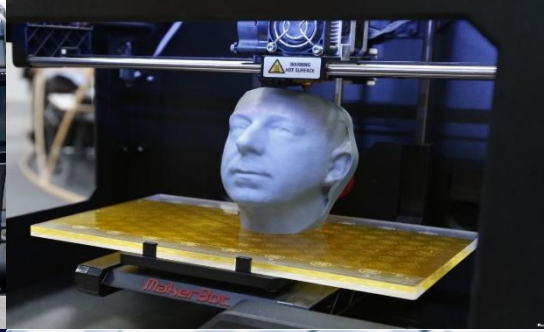
Agenda

➤ **Introduction to human aspects in Logistics and PI**

    ➤ **Bas van Bree – TKI Dinalog**

➤ **Learning from history**

    ➤ **Rik Peters – University of Groningen**

➤ **Moving towards practical implementation of self-organizing logistics**

    ➤ **Hans Quak and Elisah van Kempen – TNO**

➤ **Discussion**

How we look and trends and developments

The human factor can still be decisive

Changes are tough Some examples

➢ **Multimodal or Synchromodal route choice can be calculated**
  ➢ **Planner is still making decisions**

The human factor can be decisive

Some challenges turn out to be very tough

➢ **Multimodal or Synchromodal route choice can be designed and calculated**
  ➢ Planner is still making most decisions based on his experience

➢ **The benefits of horizontal collaboration seem to be clear**
  ➢ But still not adopted on a large scale

➢ **We need to share data….obviously**
  ➢ So what's keeping us from doing that?

➢ **Logistics and supply chain management is becoming more complex**
  ➢ Skills required at management and professionals cannot keep up

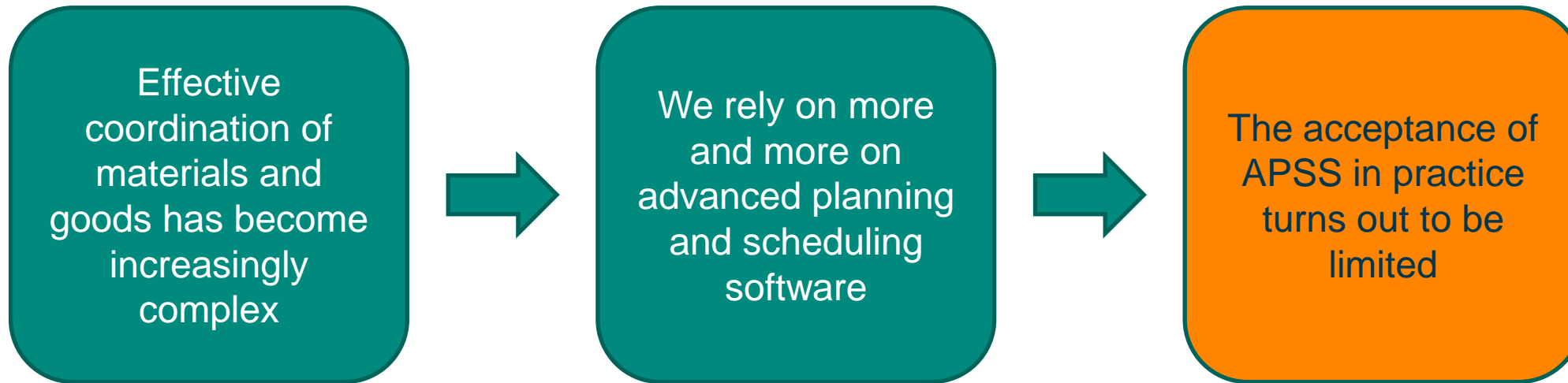➢ **…..**

The human factor can be decisive

Creation of new knowledge	25% of innovation succes	Technological innovation (R&D, tech, IT)
Recognise Integrate Apply	75% of innovation succes	Social Innovation (management, organisation, professional)

Based on: H.J.J. Volberda et. al. (2011)

Interdisciplinary research is needed

Example: Increasing the usability, adoption, and acceptance of advanced planning and scheduling systems

Effective coordination of materials and goods has become increasingly complex

→

We rely on more and more on advanced planning and scheduling software

→

The acceptance of APSS in practice turns out to be limited

Interdisciplinary research is needed

Example: Increasing the usability, adoption, and acceptance of advanced planning and scheduling systems

➢ When and why are planners and schedulers hesitant to use these advanced support systems in finding an optimal solution?

➢ How can these tools and the organizational context be redesigned in such a way that their acceptance is increased?

Manufacturing planners	Transport schedulers

Interdisciplinary research is needed

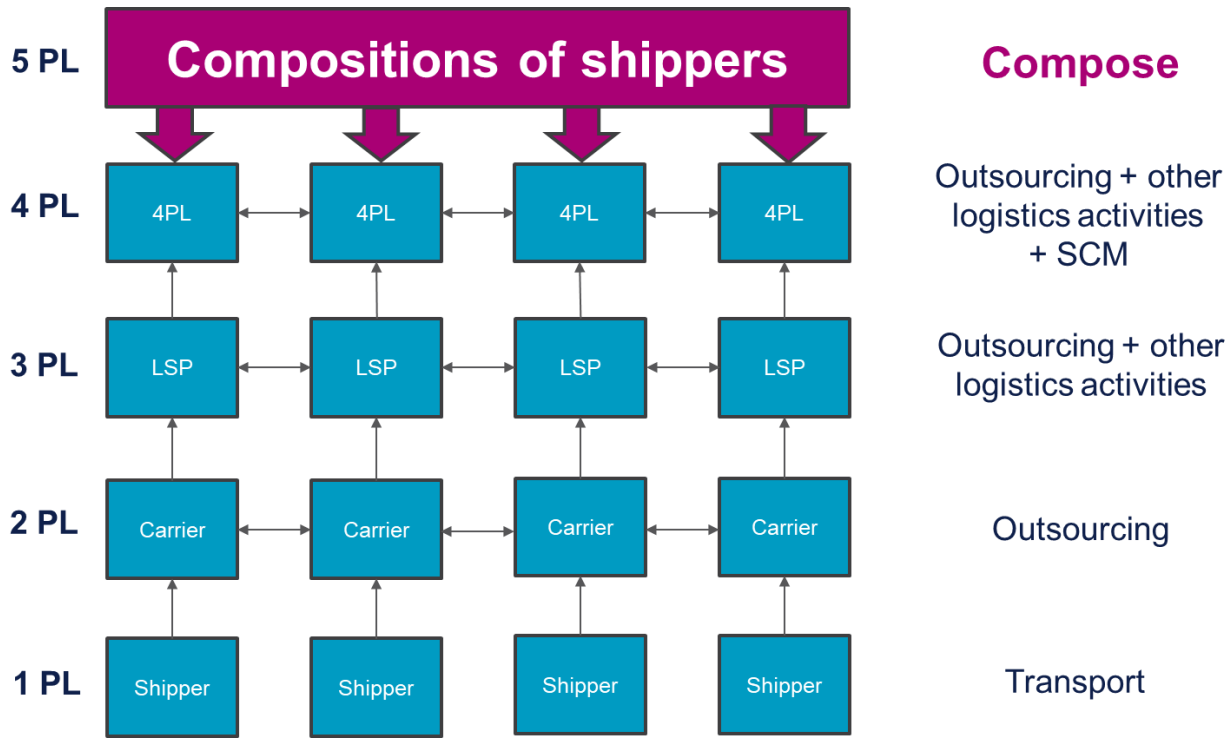**Example: Increasing the usability, adoption, and acceptance of advanced planning and scheduling systems**

Analyse the organisational context and working conditions → Behavioral experiments to test conditions → Redesign software and working conditions

Interdisciplinary research is needed

Interdisciplinary research is needed

Example: COMPOSE

Operations Research:
- Matching optimization
- Gain-pain sharing

Supply Chain Management:
- Business models
- Strategy of shippers

Project management & communication

Continuous valorisation & assessment

Phase 1: synthesis and research

Defining vision

Phase 2: development of concept

Consultation

Phase 3: tooling
- Matchmaking tool
- Network matching tool
- Order matching document

Legal:
- What is (not) allowed?
- How to arrange transactions?

Social Psychology:
- What is the motivation behind attractiveness between companies?

Interdisciplinary research is needed
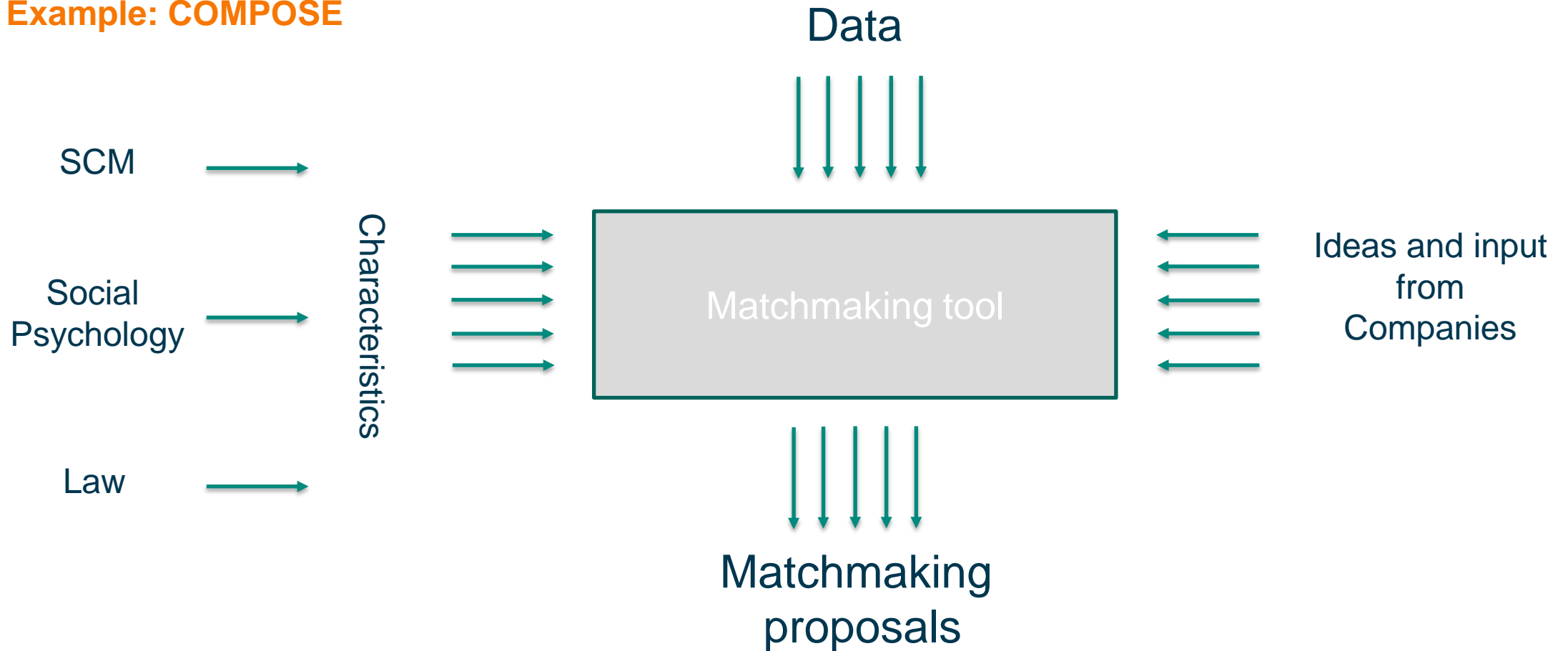
Example: COMPOSE

Main factors	Explanation
Trust	"Partnering with hidden competitors who may increase competition in a negative way and make it difficult to maintain customer focus."
Cultural mutuality	"Mutual understanding of how you do things and from there building a common way of working."
Willingness to collaborate	"The will to make common success. We said let's make an engagement like before marrying... and then you agree at that point that you go, eventually you can work together."
Communication	"The communication style of an organization's representative, plays a crucial role in proceeding to a long lasting and successful collaboration."
Competition and dominance	"People have to be able to accept that the other can also win. So, I win, you win, we both win."

Interdisciplinary research is needed

Example: COMPOSE

Data

SCM

Social
Psychology

Characteristics

Matchmaking tool

Ideas and input
from
Companies

Law

Matchmaking
proposals

Discussion

- Human aspects and the learning capacity of organisations are underexposed in the development towards PI
  - Agree / not agree

- Where do you see relevant additional interdisciplinary research need/opportunities?

- Do you have examples where human aspects are taken into account in (your own) research/projects?