# ESTONIAN CASE:
# Desicison support tool (OTT) of Estonian Unemployment Insurance Fund

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# ESTONIAN CONTEXT - technology

- pro-technology norms and values
- e-governance experience
- multifarious AI related innovations in the public sector
  - about 80 AI applications working/in development in the public sector in 2020
  - lack of specialists for the development of AI, implementation and management activities
  - AI strategy sees public sector institutions as the customer to the private sector developers in the future
- EU regulatory framework, „sandbox" ideas, human-centred AI ideal

# ESTONIAN CONTEXT – social welfare

- Non-corporatist country (about 1% of money comes from stakeholders)
- Principles of social protection system
  - universalistic socialist-type of welfare state
  - neoliberal approach (Bismarckian low-spending welfare model)
- Social expenditure from GDP in Estonia is 16.3% vs EU average 28.1% (2019)
- Elements of social protection system
  - social security system - insurance for vulnerable groups (central)
  - social assistance - subsistence benefits and social services (local)
- Labour market services: support, supervision, trainings, couceling

# ESTONIAN UNEMPLOYMENT FUND

1

- Offers **public labour market services**
- Most services regulated at Labour Market Services and Benefits Act

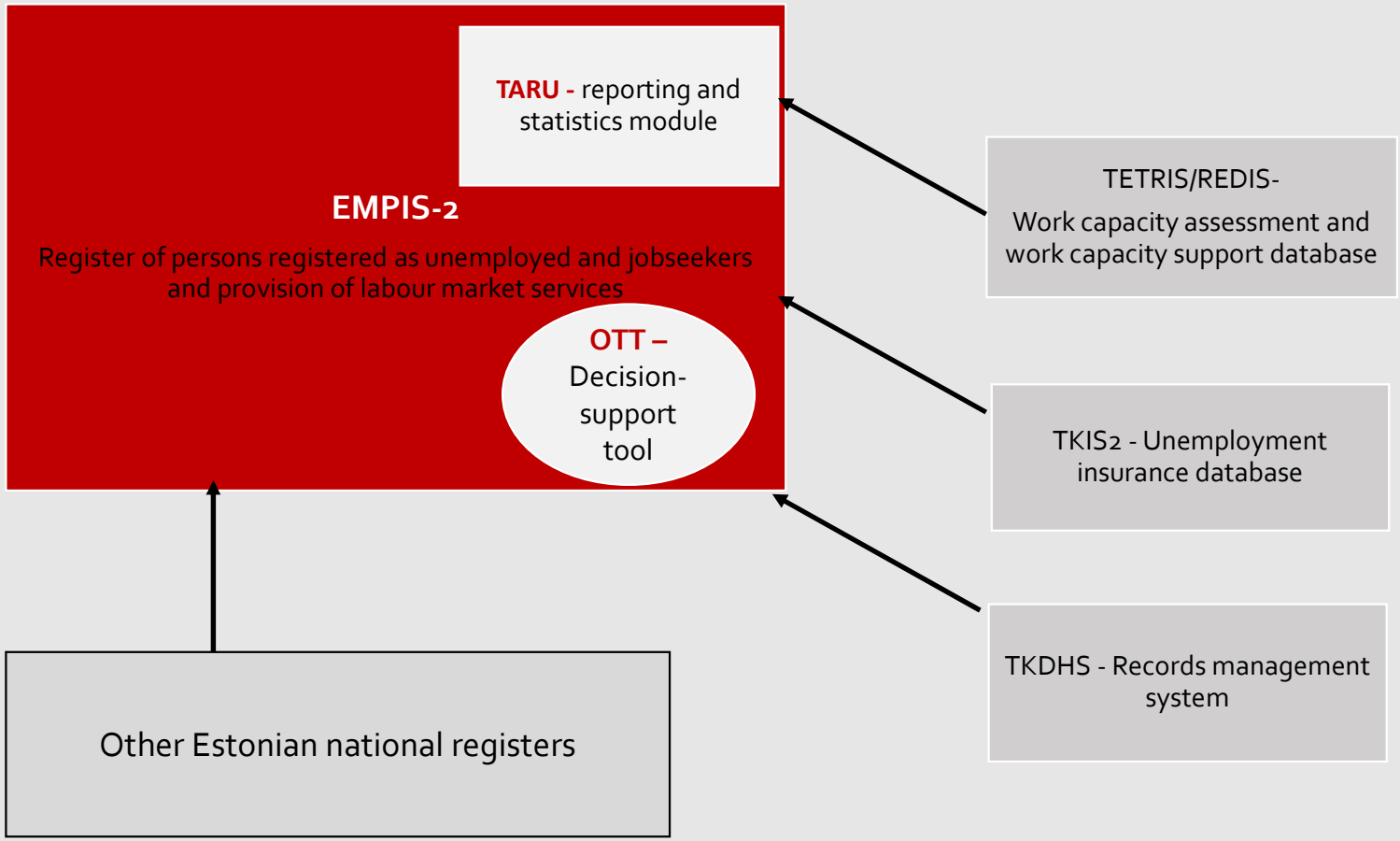
2

- **32 regional departments** (1 concentrated on career services)
- EUIF has approximately **350 advisers** providing the counselling

3

- Approximately 70,000 people register as unemployed each year, all with different backgrounds, strengths, and obstacles
- Counselling divided between three types of advisers
- 1st type (200-300 clients), 2nd and 3rd type less, mentoring advisor 100-150

# INFORMATION SYSTEMS of ESTONIAN UNEMPLOYMENT FUND



# Decision support tool OTT

- Forecasts the probability of the unemployed moving back to work within 180 days
- Indentifies factors influencing the better probability
- Provides information based on what advisers can offer assistance based on the individual needs

- Random forest method
- Register data from last 5 years
- Age, gender, citizenship
- Official caretaking duties
- **Education**
- **Skills, trainings, exams, licenses**
- Ability to work (medical)
- **Latest job**
- Current job market data

# USE OF TOOL BY ADVISORS

- The probability remains the same throughout the advice-giving process
- The situational variables play important role
  - Unoffical caretaking duties
  - Motivational variables
  - Regional flexibility (incl. transportation issues)
  - Health-related factors (besides working ability)
- Interpretation of the information provided by OTT depends on the experience and educational/training of advisors and labour market situation. Anyway only humans make the decisions.

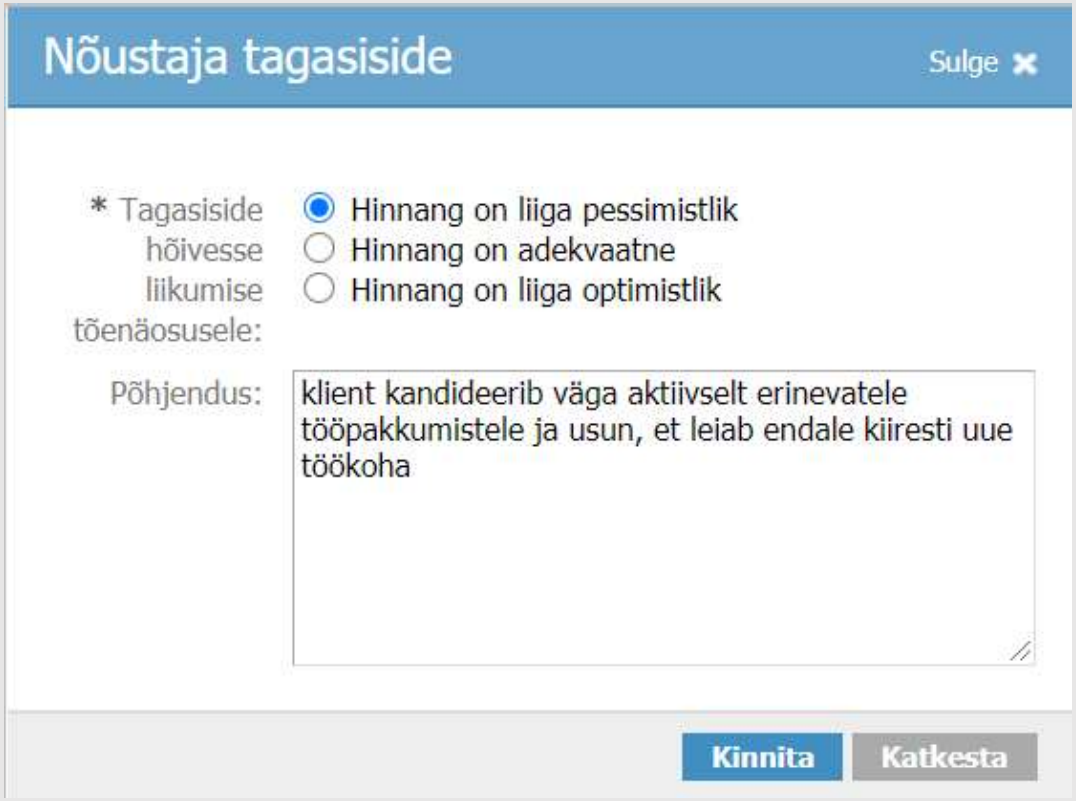
*Advisors client view*

| Hõivesse liikumise tõenäosus | Hõivesse liikumise tõenäosuse tase | Positsioon nõustaja portfellis | Hindamise kp | Nõustaja tagasiside | Hõivesse liikumise tõenäosust mõjutavad tegurid | Uuesti arvele tulemise tõenäosuse tase | Töötuse periood |
|---|---|---|---|---|---|---|---|
| 22% | Madal | 28 | 01.02.2020 | Lisa tagasiside | Vaata | Keskmine | 01.01.2020 - ... |

# FEEDBACK COLLECTION

Feedback to the probability of moving to employment given by OTT

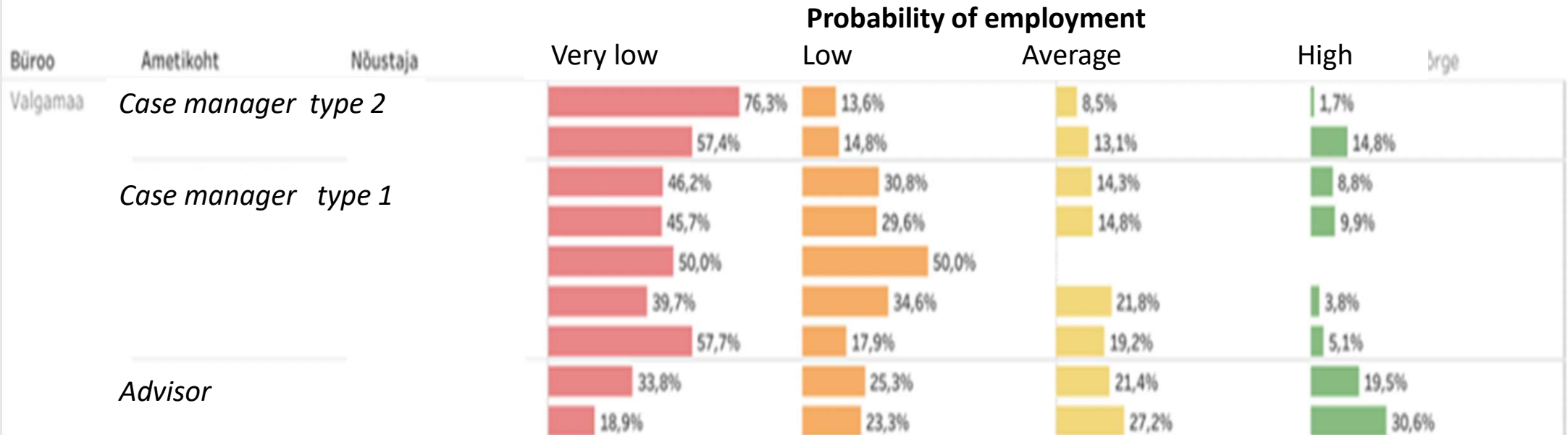
- Feedback option opens on 35th day of unemployment and will remain open until the 65th day
- Giving feedback as separate task
- Advisors provide feedback if the probability offered by the tool was too optimistic, pessimistic or adequate



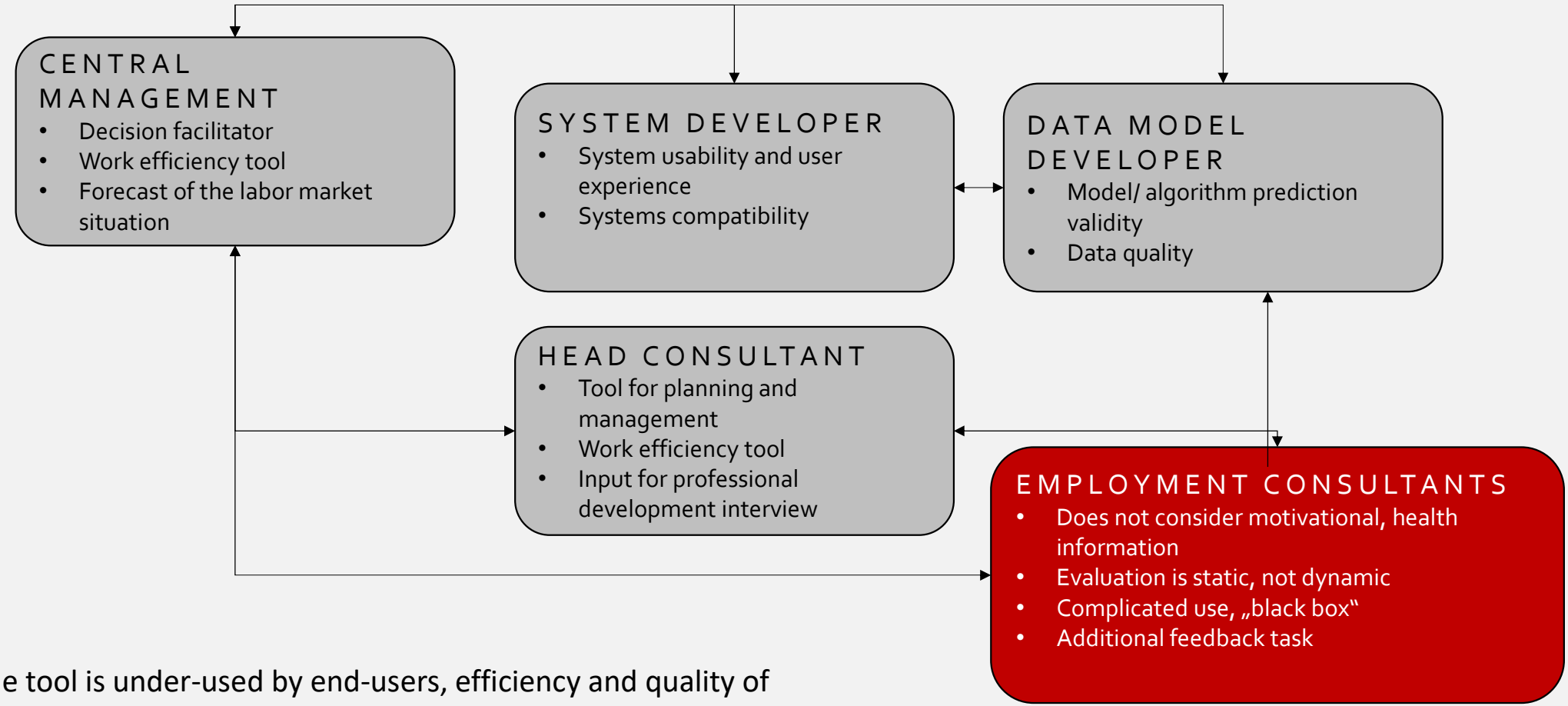
# MANAGERIAL USE OF TOOL

- OTT is used by the advisors' managers
- Gives overview of advisors portfolios to managers
- Helps plan workload of different advisors
- Aim is longer employment period

*Division of jobseekers with different probability of employment evaluated by the tool*

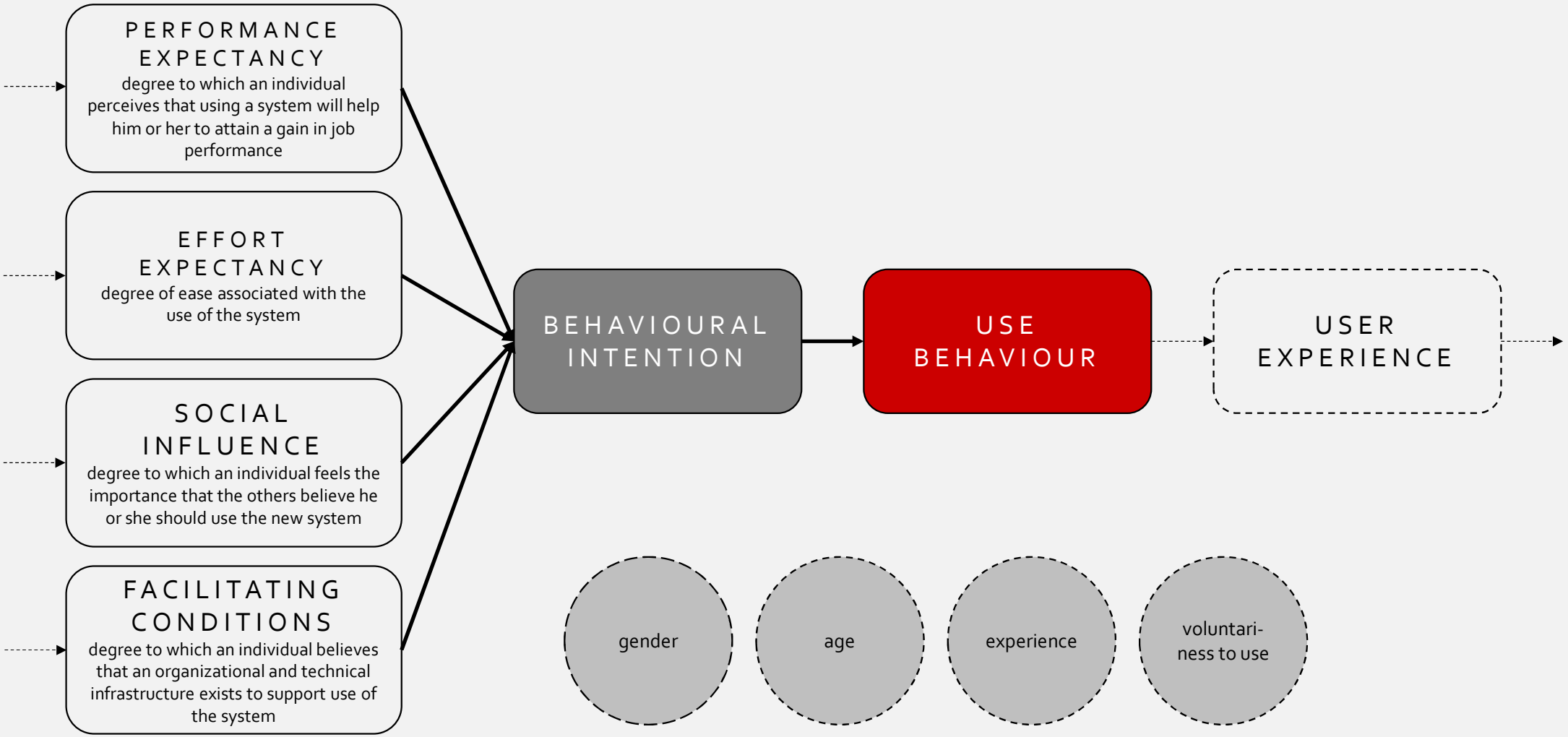


# OTT – CONTRASTING VIEWS AND EXPECTATIONS




The tool is under-used by end-users, efficiency and quality of consulting has not increased

# TECHNOLOGY ACCEPTANCE (UTAUT)



# CONCLUSIONS

- Problem is not in the accuracy of the AI-tool but how it is used.
- The planned function of the tool and its perceived aim/value in the eyes of users differ.
- No use for case manager type 2 dealing with clients with special (health) needs.
- Potentially useful for casse managers type 1 (dealing with long-unemployed clients who need suport) if the motivational information could be added to the prognosis.
- Quite useful for advisors who make the first contact with Clients and divide the work between tehmselves and case managers type 1 and type 2.
- „Loosers" in terms of advisors' time and attention are unemployed who can manage themselves and return to the labour market soon
- Managers – good tool for planning the work and making Client portfolios.
- Higher functionality for managers, mentoring advisor and menteed new specialists.
- Users were not involved in the workout of the AI-tool.
- The potential of the tool can be improved via training and communication and further development towards human-machine interaction.

# Thank you!

**Estoninan team**
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