Future Mobility Network

Dutch Automated Mobility

A research-by-action approach: Contributing to societal issues with innovative logistic vehicles or robots.

Intertraffic 2024

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Content

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1 Our Strength

Tim

Advisor Smart Logistics

Supply chain specialist with a focus on **solutions for people** in **the public environment**

Ilse

Advisor & Service Designer

Service designer with a focus on **design research**, **stakeholder co-creation & Inclusive Mobility**

Robert

Co-founder & Director

Principal **consultant mobility** and **spatial development** with a governance expertise

Alwin

Co-founder & Director

Traffic engineer who can make the connection between **spatial development** and the **design of the traffic structure.**

Research & Advice

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Implementation & Realisation

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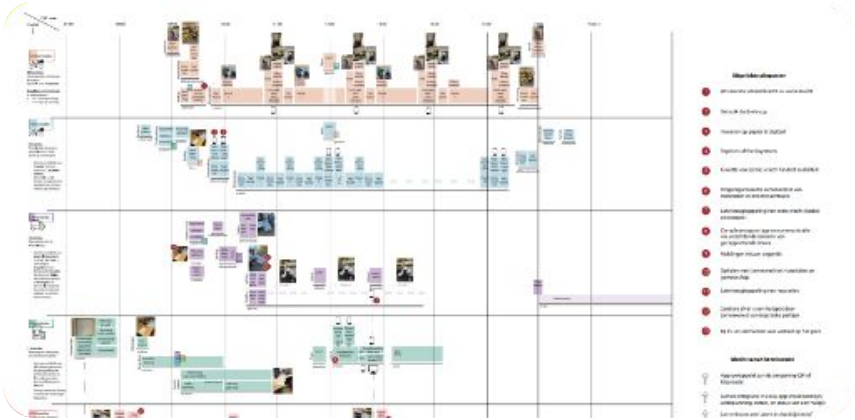
Value for society by means of technology

2 Experience

Landal Greenparks

ROSIE en ROSIE 2.0 op EUR Campus

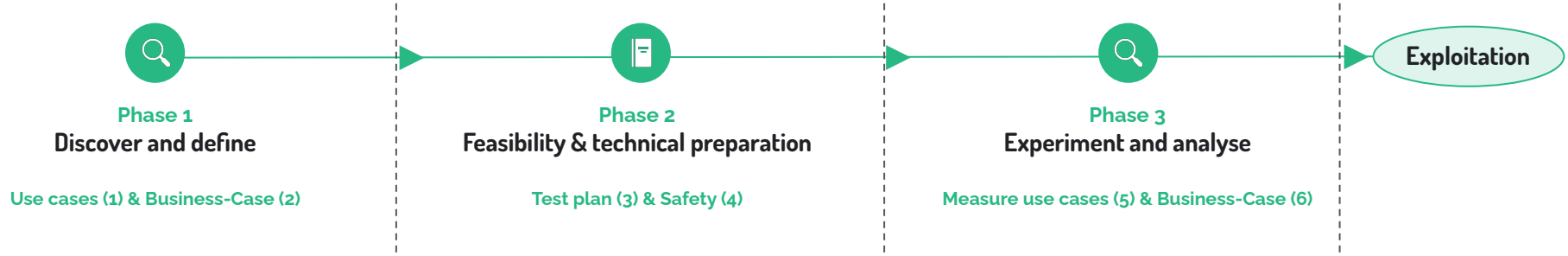
Macrostep, de multi-inzetbare logistieke robot



ROSIE 2.0 op festival ITGWO

3 Complementary approach

Phasing of the process



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4 Approach in practice

4.1 Analysis

Phase 1
Discover and define

4.2 Preparation

Phase 2
Feasibility & Technical preparation

4.3 Action Research

Phase 3
Experiment and Analyse

4.1 Analysis

Phase 1
Discover & Define

1

Problem statement definition:
Societal issue
&
Custom **Research approach**

2

Targetgroup(s) analysis:
Needs, wishes & expectations

3

Context-analysis
&
Use-case definition

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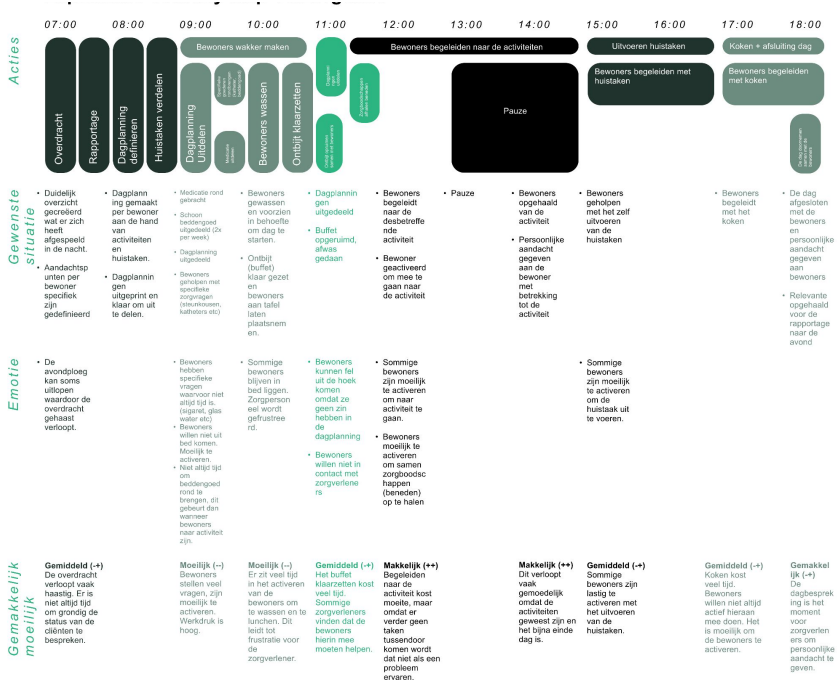
4.1 Analysis

Phase 1
Discover & Define

Experience Map > Caretaker routine



Experience, Needs & Expectations

Aa Name	Tags	Voorkeur	# Hoevaa...
Bezorgrobot meer speels uiterlijk	wensen	Bewoner	1
Bezorgorobot voorzien van spreek/luister knop	wensen	Verpleger	1
Bezorgrobot voorzien van emergencyknop	wensen	Verpleger	1
Bezorgrobot voorzien van een stem	wensen	Bewoner Verpleger	3
Bezorgrobot kan reageren en interacteren	wensen	Bewoner	
Bezorgrobot brengt medicatie apotheek naar bewoner	behoeften	Bewoner Verpleger	2
Bezorgrobot brengt boodschappen	behoeften	Bewoner Verpleger	5
Bezogrobot begeleidt bewoners die de weg kwijt zijn	behoeften	Verpleger	1
Bezorgrobot dragend verlengstuk rollater	behoeften	Bewoner Verpleger	2
Bezorgrobot begeleidt bewoner naar de activiteit	behoeften	Verpleger	3
Bezorgrobot vermindert inmenging levenssfeer (katheter)	behoeften	Verpleger	1
Bezorgrobot deelt linnengoed uit	behoeften	Verpleger	1
Bezorgrobot Wayfinding	behoeften	Verpleger	1
Bezorgrobot vervangt personeel	verwachtingen	Bewoner	1
Bezorgrobot kan mensen overprikkelen door ontwerp, bijvoorbeeld flikkerend licht, motorisch geluid	verwachtingen	Bewoner	1
Bezorgrobot vervangt sociale interactie	verwachtingen	Bewoner	2
Bezorgrobot vermindert bewustzijn in (verkeers)omgeving	verwachtingen	Bewoner	

4.1 Analysis

Phase 1
Discover & Define

From Research question :

How can a delivery robot be effectively deployed to **relieve healthcare workers of routine tasks** while simultaneously **promoting the self-reliance of residents,** taking into account the concerns, expectations, and usage patterns of the elderly?

To custom approach:

- Comfortable **familiarization phase** by Passive robot introductions
- **Personal** preparation of the elderly
- **Custom** use-case to serve in 2 ways (elderly & healthcare workers)
- **Sub-research questions**

4.2 Preparation

Phase 2
Feasibility & Technical preparation

4

Technical Use Case filter and Feasibility study

5

Technical preparation & implementation plan, safety reports

6

Operation & communication

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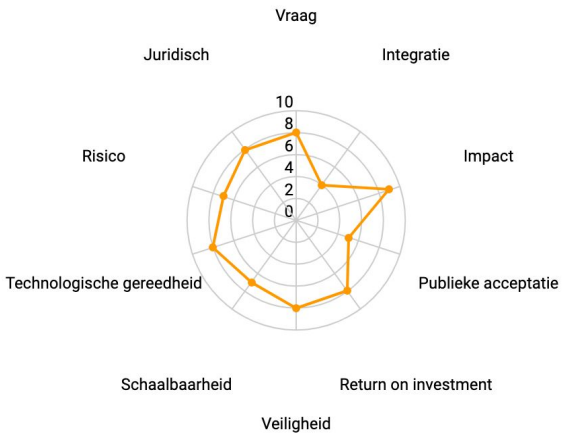
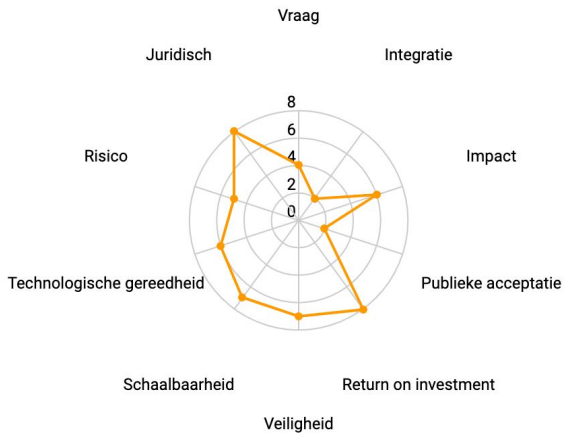
4.2 Preparation

Phase 2
Feasibility & Technical preparation

Ondersteuning van het personeel in een verzorgingstehuis



Ondersteuning van de ouderen in hun dagelijkse behoefte in/rond een verzorgingstehuis



4.2 Preparation

Phase 2
Feasibility & Technical preparation

From technical use case judgement:

How can the **technical feasibility** of a delivery robot implementation **be customized by expert judgement** from the healthcare field, in order **to estimate the real value and challenges** for such implementation?

To customized in-field expert judgement:

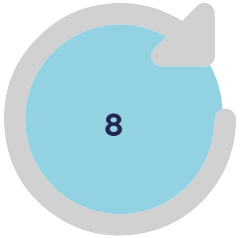
- **Improved** use case filter **factors to determine value** of implementation
- **Interviews** in the area and with Leliegroep employees **to support research**
- First **meet and greet** between **residents** of the institute **and** the **robots**
- Determined **a fitting use case via input** from residents and employees

4.3 Action Research

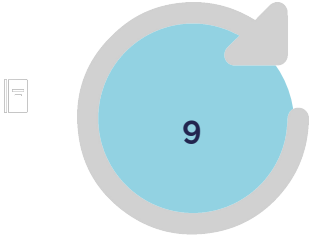
Phase 3
Experiment and Analyse

Experiment approach:
Value for all

Preparation & Execution of
Action-research:
Context & social fit of technology, fit
to needs and limitations



Observations,
Research in **practice**,
Interviews.



Analysis <> **research**-questions +
Value recommendations

Humanizing factors for feasibility
data-approach

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4.3 Action Research

Phase 3
Experiment and Analyse

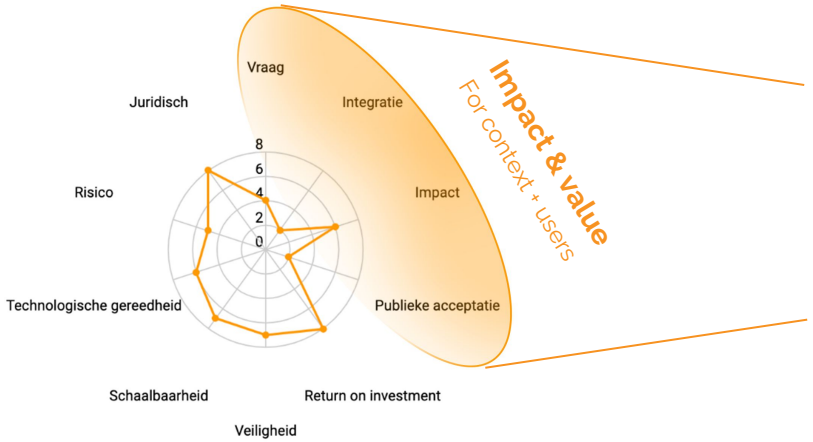
How does a robot affect the **surrounding**?

What's needed for proper **acceptance**?

How does it create **value** for **elderly & healthcare workers**?

4.3 Action Research

Phase 3
Experiment and Analyse



- Degree of **maintaining Personal Interaction**
- Degree of **optimisation work efficiency**
- Degree of **value addition self-reliance**
- Degree of **disruption continuity**

Contributing to **societal issues** with innovative logistic vehicles and robots!

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