

# Questionnaire

## Vignettes for type of tasks and degree of IoT implementation.

### Instruction for participants

Please note:

1. There are neither right nor wrong answers. It is only important that you state your personal opinions and assessments truthfully.
2. Even though there are no mandatory questions in the questionnaire, we ask you to answer all questions carefully.
3. All your information will be treated strictly confidentially and anonymously and will be used exclusively for research purposes.

In the following, we provide you with a concrete situation. Please read the following text carefully and imagine yourself in the situation.

### Characteristic. Type of tasks (including introduction)

*Dimension. Cognitive tasks*

You have been working in the administration of ProLogist GmbH for several years. In your office you are working together with five colleagues with similar working tasks. Your working tasks include scheduling; sorting correspondence; creating presentations, documents, and protocols; preparing, and analyzing data; coordinating with colleagues, and writing correspondence with customers or business partners. Your most important work tool is consequently your computer.

In order to remain competitive in the market, ProLogist GmbH is introducing an IoT system to meet customer needs such as monitoring the order process or noticing bottlenecks. In an IoT system, objects in the company are interconnected and linked to the Internet. Objects that fall within your area of responsibility may include printers, production machines, filing systems or robots.



*Dimension. manual tasks*

You have been working in production at ProLogist GmbH for several years. In the production hall you are working together with five colleagues with similar working tasks. Your working tasks include the control of the production process, involving the realization and monitoring of the related process operations. Information on processes and products in your area are recorded and controlled on your part. Your most important work tools are consequently devices, tools, and machines.

In order to remain competitive in the market, ProLogist GmbH is introducing an IoT system to meet customer needs such as monitoring the order process or noticing bottlenecks. In an IoT system, objects in the company are interconnected and linked to the Internet. Objects that fall within your area of responsibility may include printers, production machines, filing systems or robots.



**Characteristic. Number of smart objects**

*Dimension. Low number of smart objects*

So far, few objects have been integrated into the IoT system.

*Dimension. High number of smart objects*

A large number of objects are already integrated in the IoT system.

**Characteristic. Data availability**

*Dimension. Low degree of data availability*

The dashboard of the IoT system contains the most necessary information you need for your work tasks. For example, the machine data or the localization of orders in the production process are displayed to you. Due to the limited access to internal company data, you still have to rely on paper documents.

*Dimension. High degree of data availability*

The dashboard of the IoT system contains all the information you need for your work tasks. For example, the machine data or the localization of orders in the production process are displayed to you. Due to the comprehensive access to internal company data, you no longer have to rely on paper documents.

### **Characteristic. Feedback**

*Dimension. Low degree of feedback*

The objects are not able to give you feedback (e.g. via traffic light optics). They do not give you feedback on your work results.

*Dimension. High degree of feedback*

The objects are able to give you feedback (e.g. via traffic light optics). They give you immediate feedback on your work results.

### **Measurement of utility to create fluidity in teams.**

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| <b>Item ID</b> | <b>Item</b>  |
|----------------|--|
| FT_1           | The implementation of the IoT solution contributes to the reduction of personnel, especially in routine activities.                                      |
| FT_2           | The implementation of the IoT solution contributes to the reduction of existing teams.   |
| FT_3           | The implementation of the IoT solution contributes to increasing the instability of existing teams.  |
| FT_4           | The implementation of the IoT solution contributes to high turnover within teams.  |
| FT_5           | The implementation of the IoT solution contributes to the deployment of different skills at different stages of teamwork.                                |
| FT_6           | The implementation of the IoT solution contributes to the flexibility of personnel in terms of location and time.  |
| FT_7           | The implementation of the IoT solution contributes to providing career development opportunities.  |
| FT_8           | The implementation of the IoT solution contributes to the prevention of collusive behavior within teams.   |
| FT_9           | The implementation of the IoT solution contributes to the support of attentive communication in working environments where high reliability is required. |

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*Note.* For data collection, we initially used nine items. As part of the validity check, we merged FT\_1 with FT\_2 and FT\_3 with FT\_4.

### **Control variables and manipulation check.**

Personal innovativeness (Agarwal & Prasad, 1998).

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| <b>Item ID</b> | <b>Item</b>  |
|----------------|--|
| PI_1           | When I hear about new information technology, I look forward to experimenting with it. |
| PI_2           | Among my friends, I am usually the first to try new information technology.            |
| PI_3           | Generally, I am cautious about trying out new information technology                   |
| PI_4           | I like to experiment with new information technology.                                  |

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Demographic and organization-related variables.

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| <b>Item ID</b> | <b>Items for gender</b> |
|----------------|-------------------------|
| G_1            | Male                    |
| G_2            | Female                  |

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