**ProcessGAN: Supporting the Creation of Business Process Improvement Ideas through Generative Machine Learning**

In the following, the full survey as used for the quantitative pre-study is displayed:

**Page 1: Introduction**

Thank you for helping us in evaluating the process improvement artifact we have created in our research article "ProcessGAN: Creating Process Design Options through Generative Machine Learning".

The survey will take about 15 minutes. First, you will read a short introduction on the tasks at hand. Please study this introduction carefully. Afterwards, you will have to complete three quick tasks. In the end, we just have some very quick additional questions.

There are 15 questions in this survey.

**Page 2: Process Improvement Task**

Imagine you are a business consultant, and a IT helpdesk service contacts you to help them improve their business processes. They provide you with a short description of their main business process. The process model is shown below. Please study the description carefully before proceeding.
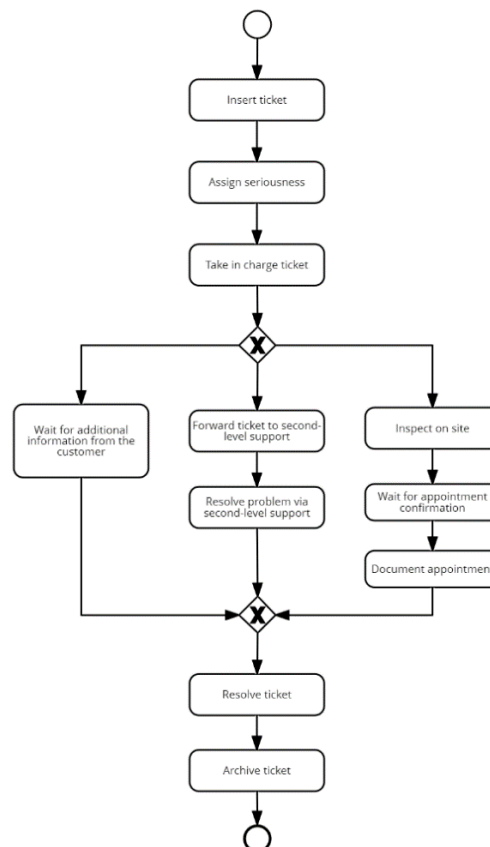
Your task as a consultant is to generate ideas on how to improve the ticketing process of the IT helpdesk service from several points of view. (These viewpoints could be – but do not have to be – cost, quality, turnaround time, customer satisfaction, and so forth).

*The following part (between the dotted lines) was only displayed to the group with ProcessGAN support:*

In addition, you are provided with several artificially generated process models you can use for inspiration. The models are shown below:
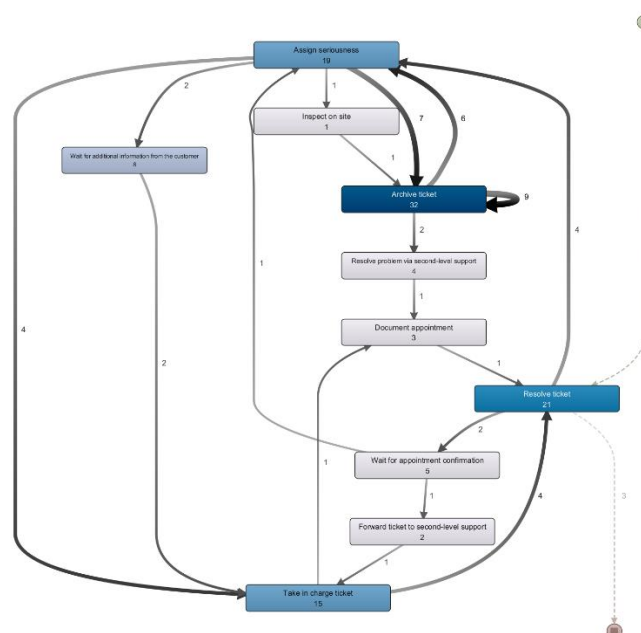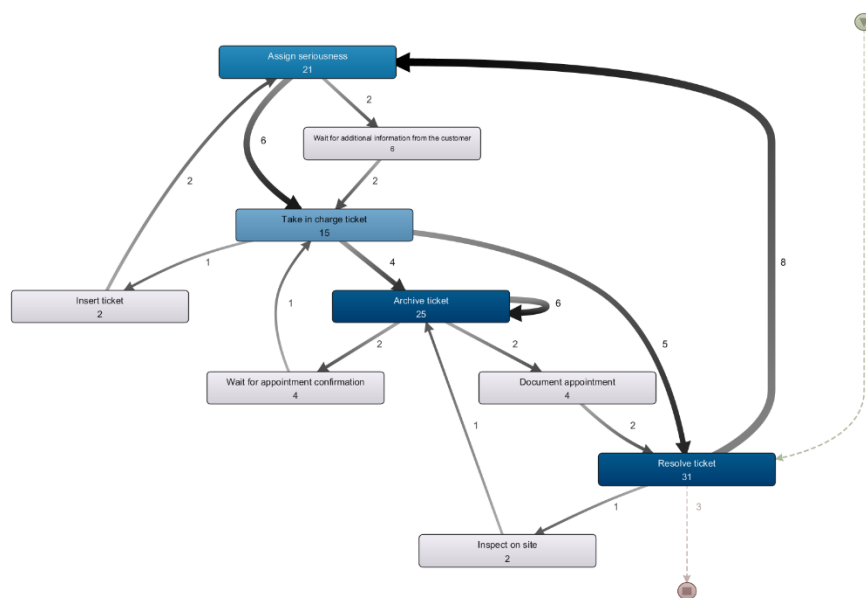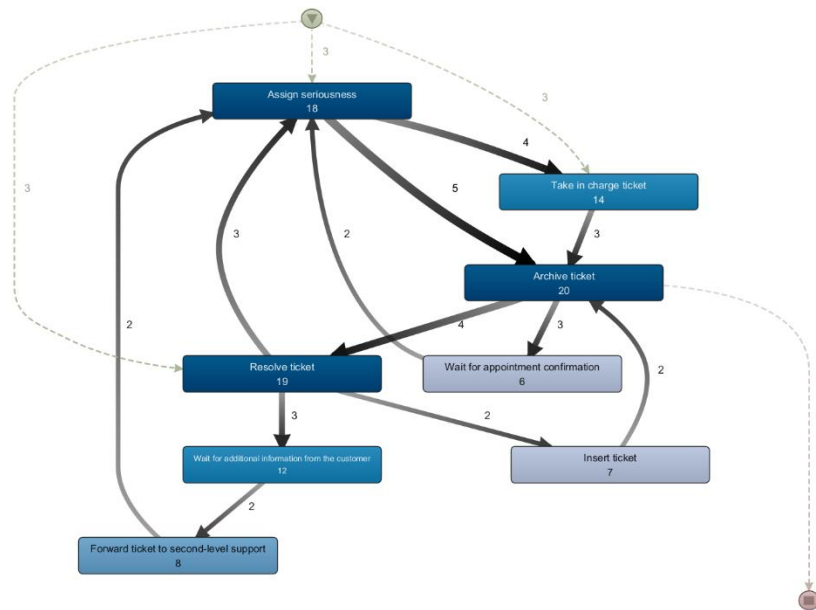
Please note that you don't have the complete information about the IT helpdesk's processes and that it is important to use your imagination. For each of the following questions, briefly describe as many improvement ideas as you can in the space provided. You do not need to make complete sentences writing the ideas – just use simple phrases, and don't worry about grammar. You can use English and/or German. You should use about 5 minutes to complete each of the following three tasks, for a total of 15 minutes.

**Question 1:** Have you read the introduction? *

Please choose **only one** of the following:

- Yes
- No

**Question 2:** The IT helpdesk wants to improve its processes so customers know at all times when their ticket will be resolved. How can the process be changed to implement this improvement? Provide as many options as you can think of.

**Question 3:** The IT helpdesk wants to increase customer contact in the process. How could more customer contact be used to improve the process? Provide as many options as you can think of.

**Question 4:** The IT helpdesk wants to spend less time to resolve upcoming issues. How could the process be changed to become faster? Provide as many options as you can think of.

**Page 3: Demographics**

**Question 5:** How old are you? *

Please choose **only one** of the following:

- 18 - 25
- 26 - 35
- 36 and above

**Question 6:** What is your gender? *

Please choose **only one** of the following:

- Female
- Male

**Question 7:** What is the highest degree or level of school you have completed? *

Please choose **only one** of the following:

- No high school diploma / no Abitur
- High school diploma / Abitur
- One or more years of college / university
- Bachelor's degree
- Master's degree
- Doctoral degree

**Question 8:** Have you ever studied or done process modeling (e.g., with BPMN, flow charts, or similar)? *

Please choose **only one** of the following:
- Yes
- No

**Question 9:** How often do you work with process models? *

Please choose **only one** of the following:

- Never
- Rarely
- Sometimes
- Often
- Always

**Question 10:** Approximately how many process models have you seen, read, or created to date? *

Only numbers may be entered in this field.

Please write your answer here:

**Question 11:** During your studies or working life, how often have you contributed to a process improvement initiative (e.g., an initiative to redesign a process or to develop new IT support for a process)? If yes, how often? If no, please enter '0'. *

Only numbers may be entered in this field.

Please write your answer here:

| |
|---|

**Question 12:** For the following part, please think back to your first task on improving the depicted process. To what extent do you agree or disagree with the following statements? *

Please choose the appropriate response for each item:

| | 1: Strongly disagree | 2 | 3 | 4: Neither agree nor disagree | 5 | 6 | 7: Strongly agree |
|---|---|---|---|---|---|---|---|
| I found the task of providing improvement ideas for the depicted process to be enjoyable. | | | | | | | |
| The actual process of performing the task of providing improvement ideas was pleasant. | | | | | | | |
| I had fun performing the task of providing improvement ideas. | | | | | | | |

## Page 4: Conclusion

Thank you very much for participating and helping us! Please let us know if you have any questions or feedback.

In the following, the demographic information about the survey participants for the quantitative pre-study is displayed:

| | | With ProcessGAN | Without | Total |
|---|---|---|---|---|
| **Total** | | 17 | 26 | 43 |
| **Age** | 18-25 | 8 | 10 | 18 |
| | 26-35 | 9 | 16 | 25 |
| | 36 and above | 0 | 0 | 0 |
| **Gender** | Female | 7 | 7 | 14 |
| | Male | 10 | 19 | 29 |
| **Highest degree or level of school completed** | No high school diploma / no Abitur | 0 | 0 | 0 |
| | High school diploma / Abitur | 0 | 0 | 0 |
| | One or more years of college / university | 0 | 1 | 1 |
| | Bachelor's degree | 6 | 6 | 12 |
| | Master's degree | 11 | 18 | 29 |
| | Doctoral degree | 0 | 1 | 1 |
| **BPM Experience** | **Experience with process modelling** | | | |
| | Yes | 16 | 24 | 40 |
| | No | 1 | 2 | 3 |
| | **Frequency of working with process models** | | | |
| | Never | 0 | 4 | 4 |
| | Rarely | 10 | 9 | 19 |
| | Sometimes | 6 | 8 | 14 |
| | Often | 1 | 5 | 6 |
| | Always | 0 | 0 | 0 |
| | **Number of process models seen, read, or created** | | | |
| | 0-5 | 2 | 7 | 9 |
| | 6-10 | 3 | 4 | 7 |
| | 11-15 | 3 | 1 | 4 |
| | 16-20 | 2 | 5 | 7 |
| | 21-30 | 4 | 4 | 8 |
| | 31 and more | 3 | 5 | 8 |
| | **Number of times contributed to a process improvement initiative** | | | |
| | 0 | 5 | 9 | 14 |
| | 1-5 | 10 | 13 | 23 |
| | 6-10 | 1 | 3 | 4 |
| | 11 and more | 1 | 1 | 2 |