Designing a Game-based Experimentation Service for Simulating and Evaluating Highly Flexible and Individual Process Settings: Expert Interviews

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1 Expert Interview: Software Sales and Support

- **Subjects:** The individual subjects are the support cases created by the customers and retailers. Although each support case is different, some parallels such as the concerned build number, the window and the type of the support case can be found.
- **Process Instances:** For each individual support case there exists a process instance which aims at solving the problem at hand.
- **Organizational Units:** software developers, support staff, sales team, ...
- **Environment:** The environment is the software company with all its resources.
- **Process Fragments:** Process fragments are the tasks to be executed, e.g. implementing a new feature, fixing a bug, updating the documentation, informing the customer etc.
- **Problem List:** In some cases, the commonly preferable solution to a certain kind of support case may not be possible, e.g. because all resources are already otherwise occupied.
- **Bonus List:** Sometimes a certain solution to a support case can be preferred, e.g. because a requested feature is of use to many customers.
- **Triggers:** During the lifecycle of a support case, different triggers can appear: For example if it becomes evident that a certain problem is indeed a bug and not a problem on the customer’s side, the support case has to be handled differently.
- **positive Goals:** solve the problem
- **negative Goals:** procrastinate solution, make requesting customer angry, loose this customer
- **Individualism:** Each support case is unique regarding its parameters: Although some may tackle the same problem or wish, the handling might still be different.
- **Limitation of available resources:** The developer, support and sales team only consist of a limited number of people who cannot handle everything instantaneously
– **Ambiguity of triggers:** The same problem description of two or more support cases does not mean that it is the same problem (in one case, there may be an actual bug; in the other, the customer did not read the manual).

– **Diversity of possible solutions:** There is never only one way to deal with a certain situation; for example, depending on the workload, a new feature may be handled either instantaneously and directly in the company, later, or not at all.

### 2 Expert Interview: Hotel Management and Guest Care

– **Subjects:** The individual subjects are the guests who stay in the hotel, i.e. leisure guests, business guests, seminar groups and trainers

– **Process Instances:** Each individual has to be treated according to his preferences. The service management plan contains all tasks which have to be done to keep seminar groups and other customers happy.

– **Organizational Units:** In a hotel, multiple roles are involved in the process of keeping the customer happy, among others the hotel manager, front desk officers, back office, housekeeping, service, cooks, etc.

– **Environment:** The environment is the hotel with all its individual features and resources.

– **Process Fragments:** Fragments vary depending on whether they deal with a business or a leisure guest; examples include to help seminar group with the equipment, prepare a special dinner, etc.

– **Problem List:** Depending on the situation, there are multiple reasons for a certain fragment not to be executed. In case of the special dinner it may be allergic guests who may not receive all kinds of food

– **Bonus List:** As with the problem list, also here we can find multiple examples. For example seminar guests which are known to have problems with the equipment will preferably be supported more.

– **Triggers:** Guest wishes and complaints have been identified as the main events which trigger some change in the service management plan.

– **positive Goals:** keep customer as a regular, surprise him, do not disappoint him (expectations were too high)

– **negative Goals:** guest may not come again, negative impact on other guests, negative assessment in online portals about the hotel, ...

We have identified the following dynamic properties of the hotel management and guest care scenario:

– **Individualism:** Depending on the type of guest different parameters make them individual. For leisure guests, the number of children and dogs, age, holiday category (relaxing, sports, culture, etc.) etc. are relevant. For business guests and trainer the size of seminar group, equipment requirements, number of required rooms etc. are crucial.
– **Limitation of available resources:** In the hotel, resources are also limited, i.e. there is only a finite number of rooms, beds, equipment, restaurant tables etc.

– **Ambiguity of triggers:** A guest’s problem description does not have to mean that it is always the same problem. (“Our beamer does not work” may require a different reaction from the hotel staff, depending on the actual condition of the beamer.)

– **Diversity of possible solutions:** Depending on environmental parameters of the hotel (such as the current occupancy rate of the rooms), there may be different solutions for the same problem. For example if a trainer asks for a seminar room for two days with 10 hotel rooms for the night, but there are only 5 hotel rooms available, different solutions are possible (moving them to a partner hotel, give them another date where enough rooms are free, cancel the event, etc.) If the hotel staff already knows they are dealing with a troublesome guest who complains a lot each time he is at the hotel, their reactions to his complaints may be different than if the guest is known to be friendly.

3 **Expert Interview: Special Needs School**

– **Subjects:** School children with special needs are the individual subjects which have to be treated according to their personal needs.

– **Process Instances:** The teaching plan which is used to teach children can be seen the general process instance. Depending on the requirements of each individual, this teaching plan can be different (within certain legal boundaries). Also, all other kind of necessary interaction between the teacher and the child’s social environment can be seen as part of this process instance, since it also has to be individual.

– **Organizational Units:** Organizational units include, besides the teacher, psychologists, pedagogical consulting (contact to the parents), psychopedagogic consulting, language pedagogic teachers (for children with speaking problem, foreign mother language etc), native speakers etc.

– **Environment:** The school with its characteristics and resources is the relevant environment.

– **Process Fragments:** Depending on the problem at hand, possible solutions include different types of teaching, like teacher-centered teaching, group or single person work, group discussions etc. Additionally, when there are acute social problems at hand, working with the parents and the child’s social environment may provide positive influence.

– **Problem List:** For some children it is known that talking to their parents can be hard - in this case, different approaches may be required (like adding an advisory teacher with special training to the discussion)

– **Bonus List:** For some children it is known that they prefer certain types of teaching or discussion when dealing with problems. In those cases, these types of working with the children will be preferred.
- **Triggers**: Triggers which require some change in the way the children are handled include observably different social behavior, difficulties with learning, etc.
- **positive Goals**: child feels better about himself, symptoms are reducing
- **negative Goals**: child shows harder symptoms, refuses to learn or socialize
- **Individualism**: Each child has its own individual circumstances which require special care of their teacher.
- **Limitation of available resources**: As in other domains, the available resources - in this case, mainly the time and number of available teachers - are limited. The teachers have to take care of all the students which are in the classroom and provide the best possible care for them.
- **Ambiguity of triggers**: Most triggers, like noticeable social behavior can be based on a number of problems: it may be problems at home or with friends, physical conditions, or problems with the teacher.
- **Diversity of possible solutions**: Depending on the situation at hand there are multiple possible solutions for one problem, including to work exclusively with the child, trying to communicate with its parents, the headmaster, a specially trained advisory teacher, or - in the worst cases, child protective services.

4 Expert Interview: Doctoral Program Supervision

- **Subjects**: The subjects are the projects the PhD students have to complete in order to finish their studies.
- **Process Instances**: Each student has a plan he follows in order to complete his PhD project. Since this plan has to react constantly to the current situation, and one usually does not know how exactly the project is going to end until it is declared to be finished, it can be seen as a long running process instance.
- **Organizational Units**: Professors, administrative personnel, examining board, etc. are all organizational units which play a role during the course of a PhD project.
- **Environment**: The environment is mainly the university the students are working in. Possible alternatives include companies which are in some form associated with the project.
- **Process Fragments**: Things students can do to solve their problems are highly depending on the situation at hand, but clearly their is a big variety. For example, if a student has no data to evaluate his studies, possibilities include to do a literature study, ask related companies for collaboration, or generate new data on his own.
- **Problem List**: Some process fragments may not be applicable in certain situations. For example if it is known that in the field of research data is hard to get, some of the solutions mentioned above may not be applicable at all. If the student has already asked all possible contacts which could provide him data, such steps may not be the optimal way to proceed.
– **Bonus List:** In some situations, a certain fragment may return better results. For the above mentioned fragment of asking some companies for data, a bonus feature could be that there are some personal connections to a company which can provide the data.

– **Triggers:** Examples for triggers which make an adaption necessary include new problems which have to be solved, new ideas which may change the course of the dissertation etc.

– **positive Goals:** Problem is solved, new data is available, idea is integrated

– **negative Goals:** Time is lost, the student gives up on his project, etc.

– **Individualism:** Each PhD student has his own, individual thesis he has to complete. Although many theses can be approached in a similar way, each thesis has its individual requirements and work plan which has to be completed.

– **Limitation of available resources:** Many resources (like lab equipment) are only available in a limited fashion and students may have to plan their work according to the accessibility of such resources.

– **Ambiguity of triggers:** A student’s problem description may not always indicate for the same problem. For example, a student who is not able to get any data for his current project may actually not have access to any data sources, or may not be able to use them correctly.

– **Diversity of possible solutions:** There are always multiple solutions to a given problem; for example, if the student has no access to data sources, he may try to redesign the project so that the data sources are not needed any more, try to get new contacts which may provide him with the required data, or find some other solution.