

# When Processes Alienate Customers: Towards a Theory of Process Acceptance

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**Abstract.** Business processes and BPM can deliver great value to process clients. This is, however, only possible if the process is triggered in the first place. The option not to trigger a business process depends on the acceptance of the process by the involved subjects. In the present paper “Grounded Theory” is used to construct a theory of process acceptance from empirical data using qualitative content analysis. The analysis reveals that missing process acceptance can have a substantial economic impact. This indicates that business processes possess inherent social properties which should be measured and managed by process designers.

**Keywords:** Subjects, BPM, Interaction, Process, Acceptance, Failure.

## 1 Introduction

Business process management (BPM) has received much attention in the last 20 years by addressing important business challenges of the globalized postindustrial economy. BPM enables companies to strive towards effective and efficient processes. This endeavor should lead, among other things, to product and process innovation, cost reduction and higher customer satisfaction rates. These positive results, however, can only be achieved by triggering of the process by its users and through correct execution by the process operators. Subject oriented BPM, as an emerging area of BPM research, is highlighting the importance and behavior of these stakeholders in contrast to traditional BPM which focuses on functional process design.

Unfortunately, business scandals in various domains have shown that companies, and therefore the process operating subjects, sometimes do not execute their processes according to own standards or do not use existing processes at all. This failure in process execution can lead not only to suboptimal organizational business structures but also to life threatening disasters<sup>1</sup>. By circumvention of official channels, individuals within the company create shadow organizations.

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<sup>1</sup> Bhopal or Chernobyl Disaster. Increased outbreak of MSRI in Hospitals due to lack of hand washing.

Thus, unofficial processes and shadow IT systems emerge, which run alongside the official organization. The formation of these entities, which signal demand through their existence, can have different causes. These causes include that the established official processes are not well accepted and may even be unknown by their prospective users. Furthermore, users may perceive the value or the usefulness of existing processes, compared to their counterparts in unofficial channels, as low. As a result process execution is changed or not triggered at all. This behavior can lead to higher costs and could render governance, risk, and compliance efforts useless [4]. Therefore, in general, the value delivered by a business process depends on the social interaction patterns of its stake-holding subjects. Subject oriented business process management (S-BPM) focuses on subjects, which are responsible for any process variance and their collaboration via structured communication in business processes. The current paper investigates an airplane boarding process, in which subjects interact with each other and the flight operator in a process, with the goal, to find a suitable seat. To address the aforementioned issues, the present paper adopts an inductive methodology to construct a theory of process acceptance based on empirical company and customer experiences. The data set used draws on information provided by the various process subjects, their interaction patterns and goals. As a methodology “Grounded Theory” was selected.

## 2 Method

### 2.1 Grounded Theory

Qualitative methods based on “Grounded Theory” (GT) [1] enable researchers to inductively formulate new theories from available data. GT provides different comprehensive methods for data acquisition, data analysis, and construct conceptualization. In comparison to research with other methods, GT based research starts without formulating a hypothesis. GT also advocates to conduct a literature review upon formulating the theory, which results from the research process. GT generates substantive theories, which are closely coupled to an area of research. These “substantive theories” are used to formulate a more general theory at a later stage. The whole process has fluid characteristics, i.e., data acquisition and analysis interplay with theory building. Information from new sources is used to modify the theory being generated. The overall goal of GT is to formulate a theory based on empirical data. Several different data sources, e.g., case studies, events, raw data, are useful for GT based research. Contrary to quantitative empirical research, GT sets representative statistical sampling aside. In fact, GT tries to use data sources based on theoretic sampling, which means data is selected actively to show the occurrence or absence of the researched phenomena [2]. Three consecutive research steps are conducted with a given data set. First, concepts are created from analyzing the data. In a later step these concepts are used to formulate the theory. Second, categories are generated to aggregate the developed concepts at a higher level. Third, propositions from generalized relationships, regarding the concepts and categories, are

derived. Therefore, GT and its associated methods strive to uncover the underlying behavior of the observed phenomena by formulating the aforementioned propositions.

In the context of epistemology, qualitative methods have drawn much critique regarding their rigorosity. GT, which has attracted much criticism itself [3], ameliorates these shortcomings by providing a comprehensive research framework. Qualitative methods are often used within a GT research project. This is, however, not mandatory as GT does not exclude any research method. Therefore a mixed methods approach is used in the present paper combining qualitative and quantitative analysis and modeling.

## 2.2 Research Design

In general, methods based on GT are used in the field of information systems, but they are uncommon in the area of BPM. The present paper tries to follow a GT approach for theory construction based on methodological fit [5] and to set out a future research agenda. This is done by applying a mixed methods approach to a publicly available data set which highlights a very peculiar social-economic phenomenon in the context of subject oriented BPM. In the present paper, GT is selected for three reasons. First, GT excels when no prior theory about the research object is available [12]. Second, the current research focuses on how individuals, influenced by business process design, interpret and construct reality [1]. Third, with the collected empirical data of an interesting phenomenon a proposition can be formulated. This results in a higher level of abstraction than the raw data itself.

### *Data Collection*

The data set at hand acts as a first source of inquiry. As GT mandates, the information embedded in the data is conceptualized. This is accomplished by textual labeling and process modeling. Drawing on these entities, categories are formed to develop propositions. The data set, which can be considered suitable in the GT context, results from publicly available information about easyJet PLC, which styles itself as a low cost airline based in the UK, which offers mainly flights to European destinations. The phenomenon observed is a change in the customer seating policy, from open to preassigned seating, inside the airplane. As data sources for the content analysis, financial reports, corporate news, and a press interview with the CEO are used [9][10], as reported in table 1. Two processes are modeled, using the conveyed information in the data sets, to aid theory construction. One before the change in seating policy was implemented and one after. Many news outlets published the story online. Therefore, this study makes use of comments, which were added by users to the news article. These comments are used to gauge the overall reaction of prospective customers. From 201 comments which were posted online 147 could be technically retrieved. However, 23 were off-topic and therefore excluded from further analysis. Additionally, the best and worst rated 20 comments were retrieved and included into the data set.

**Table 1.** Types of data used

Type of raw data	No. of cases
News article (interview/video)	2
Company news	1
Company financial data	2
Comments	147
Top rated comments	20
Worst rated comments	20

### *Data Analysis*

The data was analyzed within each type of raw data as well as across the data types to detect similarities and differences. In the initial coding phase, the data was annotated using open coding on a line-by-line level. Coding makes raw data accessible to further analysis. This is achieved by categorizing the data proposed by the data itself. Coding acts as a link between the collected data and theory construction [6]. About 100 codes were produced by the open coding process. A major concern is the short user comment length. As one comment is treated a single case, it is deemed not useful to employ a memo method, as suggested by Charmaz [6]. In the second stage of data analysis, axial codes were constructed. These axial codes describe the relationships of the open codes discovered in the initial coding phase. The identified codes are further analyzed in the theoretical coding phase. Goal of the theoretical coding is to select a code which conveys the key conceptual category. It should be noted that the concepts identified are not exhaustive. In the last phase, the theory construction stage, the identified codes are used to build a theory.

## **2.3 Content Description**

### *Company View*

Recently, easyJet PLC published financial reports, which are accompanied by an interview with the CEO, Mrs. McCall [8]. During the interview she stated:

*“We’ve also reallocated seating, all the way across the airline, so you can now choose to pay a little bit extra to get an extra leg room seat or any seat you want or a window seat or an aisle seat or whatever. This has gone down very very well with our passengers. We done a lot of thing to the business passenger, flexi-fares are taking of. That means you can change your flight right up to the last minute, up to two hours before...”*

In a different interview [7] she added:

*“There is no question there has been an increase in people who refused to even contemplate flying easyJet beforehand.”*

In the financial statements easyJet reported an increase in revenues by almost 50%, which, according to Mrs. McCall, can be partly attributed to the change in

seating policy. In fact easyJet could also increase the total number of passengers. Interestingly, the average age of all passengers increased from 38 to 42 years. According to easyJet, an older demographic is more likely to spend money on board, making this group very valuable. Also, easyJet reported that 25% of all passengers make use of this seat booking option.

### *Customer View*

As online news articles allow readers to comment on the news, a short sentiment analysis of the available comments is conducted [7]. As seen in table 2, the majority of all comments are positive, considering the new seating policy. In the data source used, commentators could also rate the comments of the other users by marking them with green or red up and down arrows, which are also reported in table 2. These arrows can be interpreted as endorsement of the comment's embodied information. Overall, 650 negative and 2118 positive arrows were distributed by the users. Notably, positive comments about the new seating policy received 969 positive and 163 negative arrows, negative comments received 145 positive and 87 negative arrows. These ratings are useful for interpreting the general sentiment. However, users may have different reasons for rating a specific comment. Therefore, analysis is restrained to descriptive statistics.

**Table 2.** Ratings of User Comments

Type	Number	Positive rating	Negative rating
In favor of new seating policy	52	969	163
Not in favor of new seating policy	13	145	87
Unrelated	48	-	-

### *Model*

Two process models may be deduced from the data sources. One model for the booking and boarding process before the changes took place and one after. As a modeling language the event-driven process chain (EPC) notation is selected. S-BPM is also evaluated but no adequate way of modeling interdependencies could be found. As subjects normally work in an interdependent setting, this aspect of subject orientation in modeling could be addressed in further research. Possibly, S-BPM could adopt suitable work-flow patterns or new elements to facilitate modeling of subject interdependence.

Figure 1 depicts the boarding process before the new seating policy, which is shown in figure 2, was implemented. Both models are deduced from the analyzed data sources. They implement the process as experienced by the passengers. It can be assumed, that both processes are not exhaustive and are likely to be more complex in the real world. It is obvious that the new process, to find the preassigned seat, implies less interaction with other passengers. The communication effort during the booking process is limited to desired seats, because normal seats are automatically preassigned. As a generalization, it can be deduced that

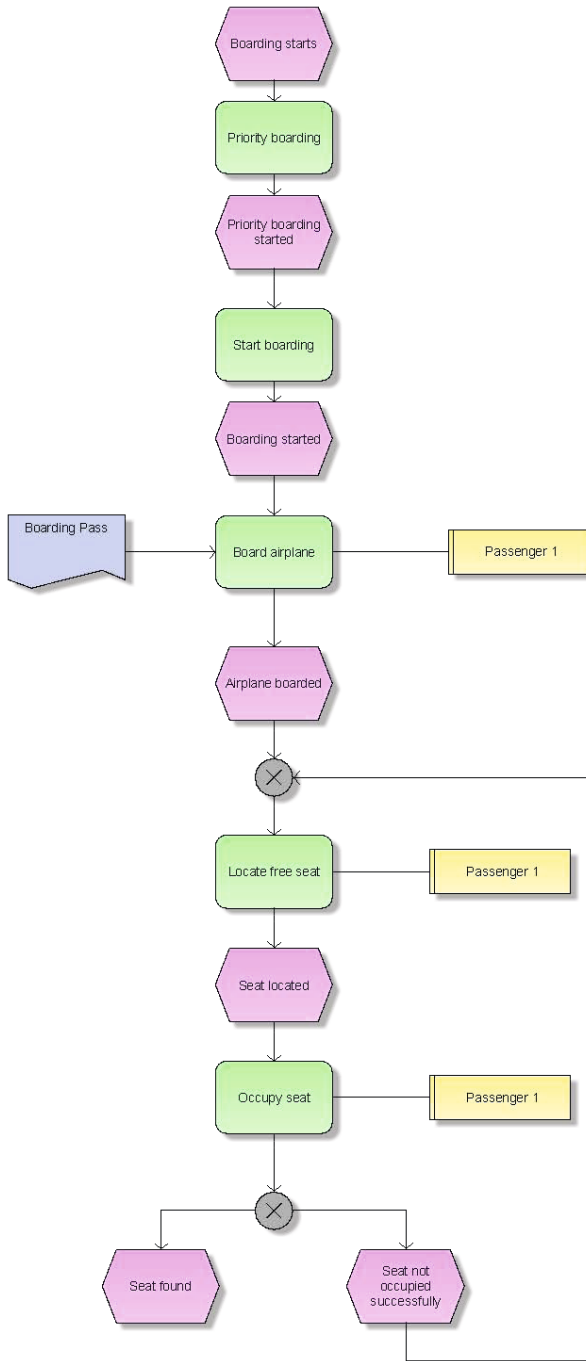
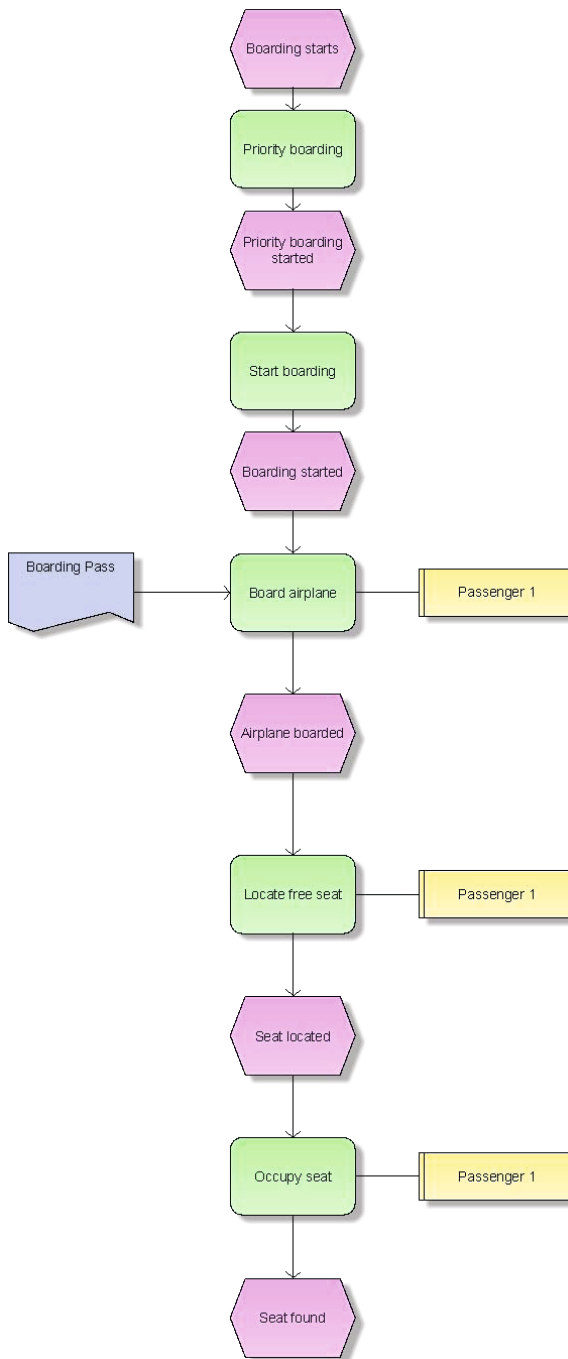


Fig. 1. Deduced boarding process before new seating policy was implemented



**Fig. 2.** Deduced boarding process after new seating policy (preassigned seats) was implemented

less interaction with subjects and resources are beneficial to the boarding experience. On the other hand, the old process required less seat management by easyJet. It is interesting to note that passengers attach more importance to the boarding process than the booking process.

### 3 Results

#### 3.1 Company Perspective

The following concepts are found relevant in devising a new seating policy from a companies point of view.

##### *Customers*

easyJet customers include business and private travelers, which are subjected to customer retention efforts. These efforts focus on choice and affordable prices. Also, easyJet suggests that the implementation of a new seating policy is a reaction to passenger demand. As company research revealed, the new seating policy is very well accepted among its clients.

##### *Corporate Strategy*

As a public listed airline, easyJet is committed to increase profitability. This can be achieved through high customer retention and customer satisfaction. To this end, punctuality is considered as a key performance indicator. As a no-frills airline, easyJet is very cost sensitive. Therefore, the implementation of a new seating policy is not allowed to increase passenger fares.

##### *Conditions for Adopting a New Seating Policy*

As contemplated by management, the old seating policy alienated customers. Therefore, seating was identified as a problem. After receiving positive reaction from passengers, which took part in a test trial, the new seating policy was implemented for all flights. These findings are consistent with experiences reported in the posted user comments. After implementing the new policy, company objectives, e.g., punctuality and stable passenger fares, are still achieved.

#### 3.2 Customer Reaction

As a reaction to the new seating policy the following concepts are found to be relevant from a passenger perspective.

##### *Conditions before New Seating Policy Was Implemented*

Clients were upset with the old seating policy. Many users describe that they actively contacted management to raise awareness of this issue. The old seating policy was connected with feelings of stress and disrespect for the customer. Especially, the high level of unpleasant interaction with other passengers to secure appropriate seating, e.g., for a family or a group, are regarded as a major drawback for flying with easyJet.



### *Attitude towards New Policy and Management*

In general, the new seating policy is very well received. It is regarded as an improvement. Many passengers expressed that, with this new policy, they would fly with easyJet again or give the company a second chance. They stipulate that the competition would implement similar policy changes. Users expressed disregard for the management because the change is viewed as obvious and already requested by customers.

### **3.3 A Grounded Theory of Process Acceptance**

This paper describes how a perceived small change in the design of a process can have an enormous impact on customer satisfaction, which results in higher reported profits. The change in seating policy had major implications for the internal IT systems. It is important to note that, before the new seating policy was implemented, the boarding process was perceived as stressful. As passengers did not accept the boarding process, they executed their option not to book a flight with this airline. In general, they would have the option not to fly at all or choose another airline with a less stressful boarding process. It can be concluded that business processes possess inherent properties. These properties, which result directly from process design, are attributed by subjects exposed to the process. The most important trait is process acceptance. If process acceptance is missing, clients are unlikely to trigger the process, e.g., by booking a flight, at all. In general, this missing process acceptance will result in lower demand and therefore lower profits.

## **4 Discussion and Conclusion**

The goal of this paper is to contribute to the existing literature about subject oriented BPM by highlighting an interesting phenomenon, and to provide empirical insights of which factors are critical to process acceptance. These contributions are twofold. First, and most notably, the data analysis yielded a grounded theory of process acceptance by linking a company decision to client reactions. It is evident that subject-orientation in the design of business processes can help improve process acceptance. In the analyzed data an increase in acceptance of the boarding process results in higher profits for the company. Therefore, it can be concluded, that process acceptance should be measured and managed. It can be further stipulated, that one variable which influences process acceptance is user interaction. Future research should concentrate on identifying other influential variables and their impact on process acceptance. These findings could be integrated into a general process acceptance model. Second, shortcomings in the existing modeling languages, regarding the modeling of subject interdependent decisions, are identified. As subjects are working in a complex interdependent environment, future research should also focus on new modeling methods that map interdependent user interactions in business processes [11]. Especially S-BPM as a modeling language could benefit from the possibility to model interdependent

subject interactions. However, some limitations are worth noting. In this study, only publicly available qualitative data sources regarding one process of one company are analyzed. Therefore, in future research the presented content analysis could be augmented with other quantitative and qualitative research methods. Especially interviews with process managers may be used to elicit information about which elements may influence process acceptance.

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