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Beyond ticketing digitalization? An analysis of a money and ticket passing practice in Ukrainian public transport with learning points from past to future.

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Abstract. This paper documents and describes the empirical phenomenon of a ticketing practice where passengers pass money and paper tickets forth and back between each other in order to pay for the bus fare. The paper secondly aims to establish a historical perspective on the empirical phenomenon through contemporary history archiving and historical writing. Lastly the paper aims at contributing theoretically by 'theorizing' the empirical phenomenon facilitated by a unique combination of material, social and symbolizing practices.

Keywords: paper tickets, bus, institutional theory, symbolic dimension

1 Introduction

During a study trip with Danish IT-graduate students to Ternopil and Lviv in Ukraine in 2016, we experienced a distinctive ticketing practice in public transport. We found it interesting that money and tickets are manually passed forth and back between passengers and the driver. While contemporary research focuses on intelligence in digitalization of 'Smart Cities' [1], the ticketing practice we observed seems to be in contrast to the on-going digitalization in society. This prompted us to examine the phenomenon in order to obtain a deeper understanding of contemporary digitalization and modernization processes.

The primary aim of this paper is to document and describe the *empirical phenomenon* of a ticketing practice where passengers pass money and paper tickets

forth and back between each other in order to pay for the bus fare. The ticketing practice is unique and has to our knowledge not yet been documented or examined in a research context. It is quite predictable that different forms of e-ticketing will be introduced in Ukraine in future, and the ticketing practice will cease to exist. Consequently, this ticketing practice needs description, documentation and interpretation as soon as it represents symbolic interaction. This documentation can help to preserve and share knowledge about the symbolic meaning of these institutional practices.

The paper secondly aims to establish a historical perspective on the empirical phenomenon through contemporary history archiving and historical writing. Through the empirical contribution, the paper will ensure that the phenomenon is documented and described. The *historical contribution* of the paper is thus to facilitate our historical knowledge and consciousness by bringing this documentation and description into the context of contemporary information systems research. Thereby, the paper serves as a foundation for information systems scholars to learn from history in their current research endeavors.

Lastly the paper aims at *contributing theoretically* by 'theorizing' the empirical phenomenon facilitated by a unique combination of material, social and symbolizing practices. Thereby, the paper contributes to a part of the contemporary theorizing within the information systems research community. This research points to the necessity of including symbols and symbolic dimensions into our theorizing besides material and social dimensions [2, 3]. It also resonates with a long-standing interest for symbolic dimensions within institutional theory [4, 5].

The paper is organized as follows: First we present the research method including the case context. Moving forward the case is presented through a narrative and afterwards theorized. Finally we discuss our findings and point to limitations and directions for future research.

2 Research Approach

This section presents the case, its related context and explains how we collected and analyzed the data in form of observational studies. The case study approach was, in the terms of Cavaye [6], a single case with the interpretive use of qualitative data for discovery. An interpretive approach is particularly useful when addressing problems with a dominant social or cultural dimension.

2.1 The case context

This paper examines the ticketing practice that takes place in parts of the public transportation network in Ukraine. Among others, the urban transportation network includes street trams, trolleybuses and buses. Urban transport is coved by state-owned and privately owned companies. The privately owned companies became part of the transportation network in the late 1990s and offer transport with the marshrutki buses. The state-owned companies offer bus rides with the avobusy. Based on the latest

data from the Ministry of Infrastructure of Ukraine, the marshrutki[1] passenger flow accounts for 50% of urban transport in Ukraine [7].

In parts of the urban transportation network it is not possible to buy tickets in advance of the tram, trolley or bus ride and there are no self-service ticket purchasing or controlling systems. Many of the buses and other means of public transport are heavily crowded and despite of this, the passengers are supposed to pay the ticket fare either upon entrance or exit directly and immediately to the bus driver. The purchase is often hindered since the passengers cannot squeeze through the crowd to purchase the ticket.

In the following the case is presented through a narrative that sheds light on the ticket practice.

2.2 Data Collection and analysis

The collection of data and the corresponding analysis have been done using a narrative written in journalistic style. The narrative is based on observations made by the authors during stays in Ukraine. A narrative is a story with a set of connected events forming a plot [8] and is a distinct way of making sense of the world [9].

The narrative functions as a framing theory [10]. The narrative draws on the distinction between material, social and symbolic dimensions [3].

3 Framing and analysis

This section first provides the narrative telling the story of the ticketing practice in a Ukrainian context. The narrative is followed by a framed analysis identifying interesting constructs from the case. Several possible conceptualizing paths are possible. During this study we take the Barley way thus identifying material, symbolic and social aspects in the narrative.

3.1 Practices from a bus on a standard day – the narrative

The ticketing practice is explained in the following narrative. The first examples involve the handing of an exact payment of the bus ticket to the driver in return for the tickets. The latter example of the ticketing practice involves an additional temporal condition in cases where passengers pay with large bills and need money in return together with the ticket.

Usually, I enter the bus, give cash to the driver, get the change and the ticket, and sit down or stand if the seats are occupied. During rush hour, the bus is full of passengers; I cannot reach the driver and pass the money via people standing ahead of me. I touch the shoulder of the woman in front of me and say, "For one, please (Za odnoho, bud laska)." She does not look at me, takes the money, touches the shoulder

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[1] State-owned buses are called avtobusy; privately-owned buses, which became part of the Ukrainian transportation network from the late 1990s, are called marshrutki.

of the man next to her, says, "For one," and passes the fare; he follows the same pattern. This is how the money, accompanied by the "For one" phrase, reaches the bus driver. The ticket and the change travel all the way back and come to me silently without the phrase "For one (Za odnoho)."

Figure 1 Paper Ticket

The other day, I meet my colleague at the bus stop and we go to the university together. We occupy the only vacant back seats of the bus and decide that we cannot get through the bus to pay ticket fare. So we take out money and the cash starts its voyage: the passengers sitting in front of us tap the shoulders of one another, say, "For two (Za dvokh)," and pass the payment. The tickets sent by the driver in return find us in a few minutes.

At the next bus stop, more people enter the bus so the bus now is packed with people. They all have to pay the ticket fare to the driver. A woman standing close to me starts the procedure of money passing. She needs change and passes the cash to the woman standing next to her. The latter travels together with her friend and intends to pay for two; she looks at the banknote and says, "I will give you the change (the fare for two tickets equals the change she needs), and we will pass the money for three tickets together instead of one and two separately, Ok?" They got three tickets in return and shared them.

Two students pass their money saying, "For two student tickets." The passengers engaged in the chain of cash moving onwards repeat this phrase until it reaches the driver; he gives the tickets in return and says, "Two student tickets." This phrase follows the tickets along the bus on its way back to the students.

An elderly woman comes into the bus. "Pension certificate! (Pensiine posvidchennya!)", she exclaims and shows it to the driver. The driver nods, the woman looks around but does not see any vacant seat; a young woman stands up and gives place to her.

A man sitting next to me passes a 50 hryvnias note to pay for one ticket (the ticket fare is four hryvnias). After it reaches the bus driver, he yells, "Who gave 50? I will pass the change later." After he issues all tickets, it is the turn of 50-hryvnia banknote "transaction". The driver cries out, "For 50 hryvnias!" and passes the ticket together with the change. The passengers hand ticket and money on like a baton repeating the phrase "For 50 hryvnias" until it comes into the proper hands. Sometimes the driver looks into the rear-view mirror and shouts out, "Who hasn`t passed the fare? Pass the fare, please."

3.2 Contributions from the case

As long as this ritual is included into the social life of most city and town dwellers in Ukraine, it is a part of the everyday organizational routine. To categorize the described phenomenon of ticketing, it is reasonable to use the term *flexible routine* coined by Leonardi [11]. This is due to the reason that the passengers themselves define the way they perform the action and adjust it to the situation in the bus. The shared social practices of cash-and-ticket-handling create certain norms and rules of behavior. Passengers perform and demonstrate constant interaction and cooperation; they interact and cooperate to pass the ticket fare or to solve change issues independently of the driver. They become interdependent concerning the transaction. In addition, the driver is dependent on the passengers' honesty. Control carried out by passengers inside the bus serves as an efficient surveillance system which operates smoothly and fluently. On the other hand, such interdependency symbolizes mutual knowledge-based trust both of the driver and passengers. The driver trusts the passengers and allows them to pass not only tickets but also change; sometimes the change constitutes quite a big sum.

The interaction of passengers generates unwritten action rules and results in a special type of communication with the symbolic meaning of collectivism. Passengers follow special norms of verbal (small-talk, discussions) and non-verbal communication (tapping of shoulders). Personal distance on the bus equals zero.

The small-scale view on the cash and ticket flow helps us explain large-scale phenomena of symbolic, material and social meaning. According to Barley, Meyerson [3], these meanings weave together. As a material representation of social behavior, the ticket fare and the ticket itself embrace a symbolic meaning. The symbolism of the described phenomena lies in the collective aspect of the Ukrainian lifestyles.

In this case, verbal communication has certain discourse rules. The essential element is its elliptical constructions. Ellipses are used in sentences both for asking to pass the money (on the way to the driver) and for sending the change and tickets back to the passengers. Passengers tend to omit the words *to pass* and *please*. The reality inside the bus presupposes rules and norms understandable for all passengers and taken for granted by them. This is the reason why ellipses are used for this social practice. It is also easy to distinguish non-verbal communication signs used in the context of bus ticket fare payment. These are gestures, nods, touches, and eye-contact. They are often used as a silent request to pass money.

4 Conclusions and discussions

We review our analysis of the paper ticket practice in relation to the concepts presented in the introductory section and our aim to contribute Empirical, Historical and Theoretical.

4.1 The empirical contribution

The empirical contribution is a first-person narrative. It is based on observations and participation by the authors. Through examples the narrative describes a complex ticketing practice unfolded by passengers in Ukrainian public transport. This ticketing practice as empirical phenomenon contrasts other contemporary practices for example paper and e-ticketing practices.

4.2 The historical contribution

The analysis in this paper pointed to two interrelated conceptualizations of the depicted ticketing practice.

Our examination of the empirical phenomenon in a historical perspective points to the following two conceptualizations:

First, in comparison to contemporary digital ticketing practices, the depicted ticketing practice illustrates a re-embedding of an abstract information system [12]. Second, this re-embedding practice in its manual and embodied form can be conceptualized as non-simultaneity (German: Ungleichzeitigkeit) [13]. We suggest that the concepts re-embedding [12] and non-simultaneity [13] theorize the ticketing practice as the passengers' response to the historical modernization of ticketing practices. These concepts may be pertinent in understanding past, present and future ticketing systems. The paper ticket passing praxis exist in a specific local context where other, more contemporary, contexts would offer a technological grounded praxis in form of mobile telephone, plastic cards or alike.

4.3 The theoretical contribution

Research in ticketing in public transportation tends to focus on material dimensions [14]. The analysis in this paper furthermore brings social and symbolic dimensions back in [5]. These dimensions are interwoven in actual empirical practices. However, we will separate them in order to direct attention to each of the dimensions and create analytical clarity. See table 1.

Table 1. Theoretical contributions

Dimension	Concept	Examples
Material	Material imbrication [11]	Bus as physical space Bus as means of transportation Physical interior of bus Paper ticket Paper bill Bus space
Social	Flexible routine [11] Surveillance [15]	Verbal and non-verbal messaging that coordinate the ticketing as social practice Interpersonal observation
Symbolic	Shared lifeworld [16] Re-embedding[12]	Common pre-understanding of communicative situation, illustrated in the elliptical verbal practices. Trust building construction through the communication between passengers and bus driver: the ticketing practice comes to symbolize trust.

The material dimensions such as bus as a physical space, bus as a means of transportation, the physical interior of bus, paper ticket, paper bill and bus space establish the material ground for the paper ticket passing practice. These material dimensions have a specific and characteristic manifestation. However, they also have similarities to public transportation in other parts of the world on a deeper structural level.

The social dimensions include verbal and non-verbal messaging that coordinate the ticketing as social practice. It furthermore includes interpersonal observation. In our analysis we suggest to theorize these social dimensions of the paper ticket passing practice as flexible coordination and interpersonal surveillance. The analysis points to an interesting element where flexible coordination and surveillance become enacted as an interpersonal social phenomenon between the bus passengers and the bus driver.

The symbolic dimensions include a common pre-understanding of the communicative situation, illustrated in the elliptical verbal practices. This analysis indicates a shared lifeworld [16] or institutionalized practice [12]. Furthermore, the analysis unfolds how this shared lifeworld is unfolded through a trust building construction in the communication between the passengers and bus driver. The ticketing practice as a re-embedding [12] process produces a shared lifeworld and symbolize trust herein.

The three dimensions are, however, interweaved: The paper ticket passing as social practice works as both a material source and a symbol of trust. An example is the verbal messaging and embodied practice which interweaves material, social and

symbolic dimensions. Like-wise the forwarding of the paper tickets as a shared lifeworld practice works as both source and symbol.

Hereby, the passengers and bus driver in their ticketing practice construct an interweaving of Lifeworld and System [17].

5 Further studies

We acknowledge the limitations of the present research and understand that the conceptualization must be challenged further by applying it on more cases (or narratives) thus interviewing bus passengers supplemented with documentation such as video and sound recordings. This would provide a more in-depth and objective basis for the analysis.

The authors would especially appreciate feedback on how to frame the further development of the paper and ideas for theorizing.

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