



# INSTITUTIONAL FACTORS OF INHIBITION OF SMART CITY PROJECT IMPLEMENTATION

## INSTITUCIONALNI ČIMBENICI INHIBICIJE PROVEDBE PROJEKTA SMART CITY

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**Abstract:** *This article examines the problem of institutional factors inhibiting the implementation of Smart City projects. It is shown that among all the factors capable of creating obstacles for the implementation of Smart City projects, the most dangerous are institutional factors. It was found that the main institutional factors inhibiting the implementation of Smart City projects are the spread of the practice of implementing demonstrative formal rules and the practice of manipulating public sentiment. The main threat to the implementation of Smart City projects, which is caused by the spread of the practice of implementing demonstrative formal rules, is the creation of the illusion of successful implementation of the Smart City project, which significantly slows down the implementation of effective formal rules of project support. In the case of the spread of the practice of manipulating public sentiments regarding the implementation of the Smart City project, there is an exploitation of public fears regarding the possible consequences of the implementation of the Smart City project. The latter is the reason for the implementation of such formal rules for project support, which significantly limit the use of technologies necessary for the successful implementation of the Smart City project. It is shown that the spread of the practice of implementing demonstrative formal rules, due to the symmetry of the transaction costs of their change, does not prevent the reform of ineffective formal rules of project support. At the same time, it has been proven that in the case of manipulation of public sentiments around the problem to be solved through the implementation of the Smart City project, reforming the formal rules of project support is impractical due to induced resistance from the side of society.*

**Keywords:** *Smart City, formal rules, manipulation of public sentiment, reforms*

**Sažetak:** *Ovaj članak ispituje problem institucionalnih čimbenika koji koče provedbu Smart City projekata. Pokazalo se da su među svim čimbenicima koji mogu stvoriti prepreke za provedbu Smart City projekata najopasniji institucionalni čimbenici. Utvrđeno je da su glavni institucionalni čimbenici koji koče provedbu Smart City projekata širenje prakse provedbe demonstrativnih formalnih pravila i praksa manipuliranja javnim raspoloženjem. Glavna prijetnja provedbi Smart City projekata, koja je uzrokovana širenjem prakse provedbe demonstrativnih formalnih pravila, je stvaranje privida uspješne provedbe Smart City projekta, što značajno usporava implementaciju učinkovitih formalnih pravila. pravila projektne podrške. U slučaju širenja prakse manipulacije javnim sentimentima glede provedbe projekta Smart City, dolazi do iskorištavanja strahova javnosti o mogućim posljedicama provedbe projekta Smart City. Potonje je razlog za implementaciju ovakvih formalnih pravila za podršku projektima, koja značajno ograničavaju korištenje tehnologija potrebnih za uspješnu provedbu projekta Smart City. Pokazuje se da širenje prakse primjene demonstrativnih formalnih pravila, zbog simetričnosti transakcijskih troškova njihove promjene, ne sprječava reformu neučinkovitih formalnih pravila projektne podrške. Istodobno, dokazano je da je u slučaju manipulacije javnim sentimentima*

*oko problema koji se rješava provedbom projekta Smart City reforma formalnih pravila potpore projektima nepraktična zbog inducirano g otpora sa strane društvo.*

*Ključne riječi: Pametni grad, formalna pravila, manipulacija javnim raspoloženjem, reforme*

## 1. Introduction

The implementation of Smart City projects allows solving a significant part of the most urgent problems facing society today: from reducing the level of street crime to reducing the consumption of electricity and other resources. Thanks to this, representatives of many interested groups show interest in the implementation of Smart City projects: politicians for whom the implementation of Smart City projects opens up an opportunity to finally overcome the old problems of many cities; entrepreneurs who are interested in reducing their own costs due to the improvement of the existing city infrastructure and ordinary city residents for whom the implementation of Smart City projects means simplifying the daily routine. Therefore, the problem of identifying factors that can slow down, or even make impossible the implementation of Smart City projects, becomes of great relevance. The most dangerous of these factors are the institutional factors inhibiting the implementation of Smart City projects, because their negative impact can persist regardless of the degree of technology development and the reduction in the price of equipment necessary for the implementation of the project.

The purpose of this article is to identify institutional factors inhibiting the implementation of Smart City projects.

## 2. Demonstrative formal rules

One of the most obvious problems associated with the implementation of Smart City projects is their high cost. Most of the Smart City projects can be implemented only if there is a developed infrastructure that allows to combine a large number of sensors with databases and decision-making centers into a single entity. However, the deployment of the relevant infrastructure requires significant capital investments, which may be unaffordable for either the local community or local business. On the other hand, the presence of adequate financing of the Smart City project does not guarantee that the set goals will be achieved, even if the project is implemented. Equally important for the successful implementation of Smart City projects is the provision of an institutional environment that will facilitate both the development and implementation of relevant technologies, as well as their active use by all interested parties. Without interest in the appropriate technologies of business, authorities and ordinary city residents, all attempts to implement Smart City projects will end only in the accumulation of piles of high-cost equipment that no one needs.

Thus, the first mandatory stage of the implementation of any Smart City project is the timely implementation of a number of specific formal rules — formal rules of project support, which regulate the legal aspects of the relevant technology, including the issue of standardization and certification of the relevant equipment, and, most importantly, provide creation of an appropriate system of incentives for representatives of all interested groups whose interests will be affected by the implementation of the relevant project. After all, without the implementation of effective formal rules of project support, any Smart City project, regardless of the technical possibility of its implementation, will be doomed to failure from the very beginning. However, certain institutional factors can become a significant obstacle to the implementation of effective formal rules for project support. The most significant of which are: the practice of implementing demonstrative formal rules

and the practice of manipulating public sentiments around the problem that should be settled through the implementation of the relevant Smart City project.

First, let's consider what effect the spread of the practice of implementing demonstrative formal rules has on the implementation of Smart City projects. The main reason for the implementation of demonstrative formal rules is the desire of the political force that initiated their implementation to demonstrate to the voters their readiness to fight the problems that most concern society, thus winning their support in the upcoming elections (Serzhanov, Abramov, 2022). For this purpose, the political power-initiator of the implementation of demonstrative formal rules will try to settle the relevant problem by implementing such formal rules that, on the one hand, will be able to impress the voters, and, on the other hand, will not affect the interests of powerful influential groups. At the same time, least of all, the initiators of the implementation of demonstrative formal rules will be concerned about their effectiveness, that is, their ability to achieve the set goal with the lowest possible level of transaction costs.

So, for example, one of the tasks of sustainable development, which can be achieved thanks to the implementation of Smart City projects, is the reduction of resource consumption. An increase in the level of concern in society about the problems of sustainable development can encourage representatives of certain political forces to take advantage of the situation and demonstrate their readiness to implement relevant projects. The implementation of such Smart City projects becomes possible thanks to the use of advanced measuring infrastructure. However, the use of advanced measuring infrastructure makes it possible to implement various programs to reduce the consumption of energy and other resources, but does not guarantee that the set goal will be achieved. After all, reducing the consumption of energy carriers and other resources is associated with obvious inconveniences for resource consumers and sometimes requires them to fundamentally change their habits. Therefore, in order to achieve the set goal, in addition to the deployment of advanced measuring infrastructure, formal rules for project support should also be implemented, containing a system of incentives that encourages the population and business to use resources economically. However, consistent adherence to this principle and enshrining it in the formal rules for the provision of the relevant project can bring the initiators of their implementation not only support from voters concerned with sustainable development issues, but also the loss of votes from those voters who are not ready to tolerate inconveniences for the sake of achieving the goals of sustainable development. In view of this, the mentioned political force will try to implement compromise formal rules of project support, which, on the one hand, declare the intentions of the relevant political force to achieve the set goals, and, on the other hand, will not provide sufficient incentives for changing the behavior of consumers. That is, the implemented formal rules for project support will be exclusively demonstrative formal rules characterized by a low level of efficiency.

As can be seen from the above, the negative impact of the demonstrative formal rules on the dynamics of the effectiveness of the formal rules of project support is that the implementation of the relevant demonstrative formal rules creates the illusion of the possibility of successful implementation of the Smart City project and solving the problem that causes concern with it society. As a result, the pressure from the side of society is reduced, regarding the need to find effective formal rules for project support. Thanks to this, the accepted demonstrative formal rules can be preserved for a sufficiently long period of time, until their unworkability becomes obvious and there is a request from the side of society regarding the need to replace them with more effective formal rules. That is, the spread of the practice of implementing demonstrative formal rules does not prevent the search for effective formal rules for project support, but it significantly slows down this process.

### 3. Manipulation of public sentiment

The opposite situation will be observed in the case of the spread of the practice of manipulating public sentiments around the problems that should be solved thanks to the implementation of the Smart City project. The greatest danger for the implementation of the Smart City project arises when the level of concern increases in society due to possible threats caused by the spread of technologies necessary for the implementation of this Smart City project.

So, for example, the widespread use of facial recognition technology makes it possible to achieve significant success in the fight against street crime. All this makes the implementation of a project to deploy a network of video surveillance cameras with the function of face recognition extremely attractive, and the rapid development of this technology and the constant reduction in the price of equipment significantly simplify its technical implementation.

However, the implementation of a project to deploy a network of video surveillance cameras with the function of facial recognition can cause fears of ordinary citizens about the security of their personal data. In most cases, public concern about this problem will have positive consequences, namely: it will force the initiators of the corresponding project to make sufficient efforts to ensure the security of personal data of city residents. However, if the level of public concern reaches a certain level, it can create conditions that are favorable for the manipulation of public sentiment around facial recognition technology. At the first stages of manipulating public sentiment, the main role will be played by opportunistic players (mainly representatives of the yellow press and pseudo public activists looking for cheap popularity) (Serzhanov, Dyachenko, Abramov, 2022). Sensing a demand from the side of society for publications that correspond to the mood of society and its expectations, this category of manipulator players will try to satisfy this demand with a stream of appropriate pseudo-scientific literature that will feed the fears of society. This will create a positive feedback loop between opportunistic players and ordinary citizens, which will lead to an even greater increase in the level of public concern about the respective problem. A gradual increase in the level of public concern will sooner or later attract the attention of the big players-manipulators (in whose role, in this case, may be influential politicians or public figures). This group of manipulative players, trying to increase the support of their political force in the upcoming elections, will obviously try to get the support of a large group of society concerned about the respective problem. For this, the representatives of this group of manipulator players will make a lot of efforts to achieve the implementation of such formal rules of project support, which significantly limit the possible locations of video surveillance cameras with the function of facial recognition, and also limit the ability of the network of relevant video surveillance cameras to collect, process and to store personal data of citizens, including critical data for the prevention or detection of street crimes.

This situation will persist until society's attention is diverted from the problem of personal data security, or manipulator players switch to exploiting society's concern with a more promising, from the point of view of opportunities for exploitation, problem.

In view of the above, it can be argued that the negative influence of the spread of the practice of manipulating public sentiments on the dynamics of the effectiveness of the formal rules of project support is much more dangerous than the corresponding influence of the demonstrative formal rules. After all, unlike demonstrative formal rules, which only slow down the process of implementing effective formal rules for project support, manipulation of public sentiments can lead to the emergence of strong resistance from the side of society to the implementation of the relevant Smart City project. Moreover, any attempts to oppose the actions of manipulator players will be doomed to failure, due to the significant risks of induced resistance from the side of society. The only way is to take



measures (Abramov, 2019) that prevent or minimize the threat of manipulation of public sentiment, before the start of the implementation of the relevant Smart City projects.

Thus, if the problems during the implementation of Smart City projects were not caused by technical miscalculations or insufficient funding, then the future fate of the project, first of all, depends on the possibility of timely reformation of ineffective formal rules for project support. However, in some cases, attempts to replace the old ineffective formal rules of project support with alternative formal rules may not give the expected result, regardless of how effective the new alternative formal rules are. A similar situation can be observed either due to the fact that the new formal rules are ineffective in the existing institutional environment, or due to their significant instability due to their inverse asymmetry (Abramov, 2012, 2015). In such conditions, reforming the formal rules of project support will be impractical. Accordingly, the decision to reform the ineffective formal rules of project support and to continue the Smart City project implementation attempt should be made taking into account the criteria for the expediency of reforming the formal rules. In cases where the situation surrounding the implementation of this project does not meet the feasibility criteria, the reform of the ineffective formal rules for project support should be canceled or postponed until the time when the situation meets the given criteria.

In addition to the traditional criteria for the expediency of reforming formal rules (Abramov, 2016), the expediency of reforming formal rules of project support will also, to a large extent, depend on the dominant factor of their inefficiency. In those cases where the implementation of demonstrative formal rules became the main reason for the ineffectiveness of the formal rules of project support, reforming the formal rules of project support is quite appropriate, because despite the considerable stability, the demonstrative formal rules are characterized by the symmetry of the transaction costs of their change. That is, after the abolition of the relevant demonstrative formal rules, there is no interested group that will try to restore them. In contrast, in those cases where the ineffectiveness of the formal rules of project support was due to the manipulation of public sentiments, reforming the relevant formal rules is impractical, due to the high level of transaction costs of canceling the old ineffective formal rules. And the implementation of this Smart City project should be postponed until the exploitation by the manipulator players of the public concern with the problem that should be solved thanks to the implementation of the corresponding project stops.

#### **4. Conclusions**

Thus, the following conclusions can be drawn.

The Europe Strategy is the EU's agenda and innovation policy for growth and jobs for the current decade. It emphasizes smart, sustainable, and inclusive growth as a means to overcome structural weaknesses in Europe's economy, enhance its competitiveness and productivity, and support a sustainable social market economy. A key goal of regional development in urban areas is to combat climate change and increase the use of energy from renewable sources. (Šostar, Andrić, Popov, 2019).

The aim of this scientific research was to highlight the critical role cities play in improving climate conditions and mitigating negative environmental impacts. As urban centers continue to grow, they are both a challenge and an opportunity for implementing innovative solutions that can reduce greenhouse gas emissions and improve energy efficiency. By adopting integrated approaches to urban development—such as modernizing infrastructure, promoting green technologies, and supporting sustainable transportation systems—cities can become pivotal players in the fight against climate change.

Future research will focus on showcasing specific examples and best practices from European cities that have successfully incorporated sustainable development principles into their strategies, offering a roadmap for other urban areas to achieve the goals outlined in the Europe Strategy for growth, employment, and sustainable development.

First, the main condition for the successful implementation of Smart City projects is the creation of a set of effective formal rules that regulate the legal issues of using appropriate technologies and create an appropriate system of incentives for business, authorities and ordinary city residents.

Secondly, the main institutional factors that prevent the formation of an institutional environment that contributes to the successful implementation of Smart City projects are the spread of practices of implementing demonstrative formal rules and manipulating public sentiments.

Thirdly, the reformation of the existing formal rules that slow down or make impossible the implementation of Smart City projects should take place in accordance with the main criteria for the feasibility of reforming ineffective formal rules. The most significant of which is the lack of widespread practice of manipulating public sentiment around the problem, which should be settled thanks to the implementation of the relevant Smart City project.

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