**Czech University of Life Sciences Prague**

Faculty of Economics and Management

Department of Economics


# Diploma Thesis

**E-COMMERCE AND E-BUSINESS IN THE CZECH REPUBLIC**

Bc. Kateřina Součková

Economics and Management

## Declaration

I declare that I have worked on my diploma thesis titled e-commerce and e-business in the Czech Republic by myself and I have used only the sources mentioned at the end of the thesis.

In Prague March 20, 2011 Bc. Kateřina Součková

**Acknowledgement**

I would like to thank Ing. Mansoor Maitah Ph.D. et Ph.D. and others for their advice and support during my work on this thesis.

**E-KOMERCE A E-PODNIKÁNÍ V ČESKÉ REPUBLICE**

**E-COMMERCE AND E-BUSINESS IN THE CZECH REPUBLIC**

# Souhrn

Cílem této diplomové práce je prozkoumat příležitosti, které přinesla implementace datových schránek pro e-komerci a e-business v České republice. Datové schránky jsou jedna z aplikací e-govermentu české republiky. Protože se jedná o nové a široké téma, je tato diplomová práce soustředěna především na případovou studii společnosti, GTX Invention. s.r.o. Tato společnost začala využívat datové schránky v procesu realizace svých služeb.

Diplomová práce, má tři části. První část je zaměřena na e-komerci a e-business v České republice, její rozvoj a současný význam. Druhá část se zabývá datovými schránkami, související legislativou, technickým řešením a praktickým využitím. Třetí část je případová studie společnosti, GTX Invention. s.r.o. Tato případová studie se zabývá službou, kterou firma nabízí přes Internet a z velké části ji také přes Internet realizuje, zkušenostmi s používáním datových schránek a ekonomikou dané firmy.

Z výzkumu plyne, že používání datových schránek přineslo společnosti úspory nákladů, zkvalitnění služeb, zvýšení kapacity a ekonomických výsledků. Což v důsledku znamená, že datové schránky přinesly příležitost pro rozvoj podobných firem podnikajících na internetu v České republice.

# Klíčová slova

e-komerce, Česká republika, případová studie, datové schránky, služby, e-government,

# Summary

The aim of this diploma thesis is to identify opportunities that brought implementation of data boxes for e-commerce and e-business in the Czech Republic. Data boxes are one part of e-government applications in the Czech Republic. This topic is new and wide, therefore the diploma thesis is focused solely on case study of company GTX Invention s.r.o.

The company uses data boxes in process of services performance.

The diploma thesis has three parts. The first part is about development and actual significance of e-commerce and e-business in the Czech Republic. The second part is about data boxes, related legislation, technical solution and practical utilization. The third part is case study of company GTX Invention s.r.o. The case study is primarily about services of the company, which are offered and almost all of them realized via Internet, company experience with data boxes use and about the business of the company.

The research has proved that use of data boxes brought cost savings, improved services, and increased capacity and economic performance. In fact this means that data boxes brought an opportunity for the development of similar companies operating on the Internet in the Czech Republic.



# Keywords:

e-commerce, the Czech Republic, case study, data boxes, services, e-government

# Abstract

# List of Figures

# List of Acronyms

| | |
|---|---|
| ADSL | Asymmetric Digital Subscriber Line |
| B2B | Business to Business |
| B2C | Business to Customer |
| C2B | Customer to Business |
| CR | The Czech Republic |
| DSL | Digital Subscriber Line |
| EDI | Electronic data interchange |
| EU | The European Union |
| FTTx | Fiber to the x |
| FWA | Fixed Wireless Access |
| ICT | Information and Communication Technologies |
| OECD | Organisation for Economic Co-operation and Development |
| SEO | Search Engine Optimization |
| SSL | Secure Sockets Layer |
| TLS | Transport Layer Security |

# 1 Introduction

The world has never been the same. Quotation which has been always truth underlines perpetuation of changes and development of our society. The changes are usually perceived as small or unimportant on daily live perspective, but long term perspective reveals what changes were real milestones of eras. Milestones are usually fundamental inventions which enable society to jump further, as did for example wheel, agriculture, iron, steam, coal, usage of crude oil. Distances between milestones and durations of eras are getting shorter and shorter. Therefore the question is whether the Internet, another phenomenon that really changes our lives, could be such a milestone.

Some people don't hesitate: *"The Internet has been the most fundamental change during my lifetime and for hundreds of years. Someone the other day said, "It's the biggest thing since Gutenberg," and then someone else said "No, it's the biggest thing since the invention of writing."* Rupert Murdoch [4]

On every moment it is visible, that the Internet changes our lives in almost every way. The recent word is influenced by the Internet not only because of Internet itself, but especially because of utilities, features, and services that Internet enables. [25] At the beginning of the Internet, nobody expected commercial utilities of the network, but it changed promptly. People try to invent ways how to make money via the Internet and they give sense to the new word e-commerce. In developed countries since the year 2000 [25] is the Internet utilisation common in households and usual part of companies' businesses. The Czech Republic follows this development. People in the Czech Republic get used to savings of time and money via the Internet communication, shopping, information search. They change their perception what is modern effective communication and management of their matters.

The Internet could also bring saving to organizations. The massive expansion of the Internet in the Czech Republic and reliable technical solutions enable even the Czech Republic government to build Internet applications for easy communication between government institutions and citizens, as well as application for communication

with/within public authorities. These applications are known as e-government. The e-government applications contribute to the efficiency of relationship between Czech citizens and government as well as to the efficiency of companies. [17] Example of this contribution is content of this Diploma Thesis.

# 2 Objectives and Methodology

The aim of the diploma theses is to identify opportunities of data boxes for e-commerce and e-business in the Czech Republic. There haven't been many researches done about data boxes, because this application is quite new, uploaded in 2009. Data boxes also enlarged possibilities of the Czech Internet, therefore are relevant to study. Moreover it is crucial to study data boxes in connection with e-commerce and e-business.

The theses of the diploma thesis are that data boxes brought new opportunities for e-commerce and e-business in the Czech Republic.

The main methodology is case study research. The case study research consists of an interview, study of documents, observation, web analyses, search engines trial and transaction cost analyses

- The interview is an important method for collecting information in context of the company. The output is in a form of interview protocol.
- The study of documents is focused on real example of company services. Outputs are visible as figures.
- The observation is a method suitable for analyzing and collecting information of IT applications and programs usage. Outputs are protocol and print screens.
- The study of web pages. Output is protocol.
- The search engines trial analyses Internet presentation. Output is figure with results.
- The transaction cost analysis study impact of data boxes on the company's business. Output is the figure with results.

# 3 Literature Overview

This chapter consists of relevant findings about e-commerce in the Czech Republic, e-government of the Czech Republic and data boxes.

## 3.1 E -commerce in the Czech Republic

### 3.1.1 Definitions of E-commerce and Related Terms; E-business, EDI

It is an issue to unify meaning of these terms e-commerce and e-business. There fore this chapter is introducing general definitions, but due to effort to measure e-commerce and e-business more important are definitions of E-commerce and E-business by Czech public authorities.

#### 3.1.1.1 E-commerce; General Definitions

The e-commerce is term often used in mass-media, Internet discussions, at business schools, and strategy meetings of companies. The term also appears in statistic reports analysing the performance of markets or the structure of households' purchases and so on. Therefore, there are too many contexts in which the word is used, and too many organisation, researchers, or institution which need to find definition of the term, so the term e-commerce has infinite number of definition. However the range of definition is so wide, that there are four types of definitions often published. There are semantic definitions, definitions by electronic means used for e-commerce, definition by subjects of e-commerce and definition by business processes involved in it.

Semantics definition of the word e-commerce published in Cambridge dictionary is: "*The e-commerce is business of buying and selling goods and services on the Internet*." [5] Other definitions published in dictionaries are similar, for example The Collins English Dictionary presents: "*The e-commerce*, ecommerce *is (Business / Commerce) business transactions conducted on the Internet"*.[6] On the other hand there are different definitions, for example The American Heritage® Dictionary of the English Language presents: "*The e-commerce is commerce that is transacted electronically, as over the*

*Internet*.[27] The American Heritage® Dictionary includes in to the definition other electronic means of communications, not only the Internet. Collins English Dictionary definition implicates that e-commerce and ecommerce are synonyms.

Definitions by electronic means used for e-commerce published by wide number of authors are usually similar to the definitions published in dictionaries. These definitions include or omit electronic means. Some of them are very wide, for example the OECD definition of e-commerce is: *„Any method of using electronic communications and computer technology to conduct business"*[24] other definition is much more specific: *„Electronic commerce refers to commercial transactions occurring over open networks, such as the Internet. Both business-to-business and business-to-consumer transactions are included*." OECD [20]

*"Business conducted through the use of computers, telephones, fax machines, barcode readers, credit cards, automated teller machines (ATM) or other electronic appliances (whether or not using the internet) without the exchange of paper-based documents."* [3]

The most usual definition by subjects of e-commerce is the definition of OECD: *"Electronic commerce ("e-commerce") involves the buying, selling or exchanging of goods, services, and information through electronic networks. E-commerce has three basic forms: business-to-business transactions (B2B), business-to-consumer transactions (B2C), and consumer-to-consumer transactions (C2C)"*. [23]

Definition by business processes.

*It includes activities such as procurement, order entry, transaction processing, payment, authentication and non-repudiation, inventory control, order fulfilment, and customer support. When a buyer pays with a bank card swiped through a magnetic-stripe-reader, he or she is participating in e-commerce.*

[3] The content of almost all of these definitions introduces e-commerce as conducting business and exchange of products and services over the Internet and other computer networks. It is important to stress the fast development of ICT and its' integration in companies' processes, households and overall influence on economies. Fast development causes that content of terms and definitions is moving in the real life.

#### 3.1.1.2 Definition of E-commerce by Public Authorities in the Czech Republic

The Czech Government, the Czech Ministry of Industry and Trade and the Czech Statistical Office are institutions which have to fine suitable definitions for their purposes.

The Czech Ministry of Industry and Trade has published a document called White Paper on Electronic Commerce. It is a government document. It presents a vision of development electronic commerce in the Czech Republic and ways of its support. In this paper, the concept of e-commerce is defined in a narrower sense. *"Electronic commerce is such a trade where the communication between participants is partly or completely realized via standard data networks, computers, accessories and telecommunications equipment. This includes both products that are sold, and even paid over data networks, but delivered in a tangible form, as well as products that are delivered in digital form over data networks."* [20]

Czech Statistical Office defines e-commerce by definition of purchases and sales. *"Electronic purchases as part of e-commerce are defined as the purchase (regardless of method of orders or delivery and payment) via the Internet or other network (inter-company private information networks) via the website (e-commerce, web site) or via electronic data interchange (EDI commerce). Electronic commerce does not include purchases made on the basis of orders which have been prepared from information obtained on the Internet, but made the classic way (telephone, fax, written order) or via e-mail."* [11]

*"Electronic sale as part of electronic commerce is defined as the sale (receiving / acceptance of order, regardless of method of delivery and payment) via the Internet or other computer networks (inter-company private information network) through the web site (e-commerce site) or via electronic data interchange (EDI commerce)."* [11]

Definitions of The Czech Statistical Office are as much concrete as possible; they are use as background for all researches conducted by The Czech Statistical Office.

#### 3.1.1.3 Definition of E-business

E-commerce and e-business are in practice synonyms, but sometimes are defined as different terms. IBM 1997: "*e-business (e'biz'nis) – the transformation of key business processes through the use of Internet technologies*" [13] And the Business Dictionary: *"firm which, in contrast to an electronic commerce firm, conducts its day-to-day business functions over the Internet and/or other electronic networks such as electronic data interchange (EDI). Electronic business includes collaborating with distributors on sales promotions, interacting with and servicing the customers, and conducting joint research with business partners."* [2]

*"In the Czech Republic the term "electronic commerce" perceived either in all business activities, which includes operational, technical-logistics activities (e-business) or in the narrower sense, as the exchange of goods and services between sellers and buyers, or intermediaries of e-commerce."* [20]

#### 3.1.1.4 Definitions of EDI

Electronic Data Interchange is a structured electronic transfer of information between two independent organizations. The EDI is use in companies which exchange regular types of documents with business partners. These documents transactions can be done with minimum of human effort and these documents are solely in electronic form. [25]

### 3.1.2 Development of E-commerce in the Czech Republic

It is difficult to analyze all types and aspects of e-commerce. Therefore the organization conducting researches in this area chooses realistic ways how to analyze those. Example of this effort is a long term research conducted by The Czech Statistic Office. The set of particular long term researches is called The Information Society. Besides other information the publication includes information about relationship of Households, Companies and Government to the e-commerce in significant measures.

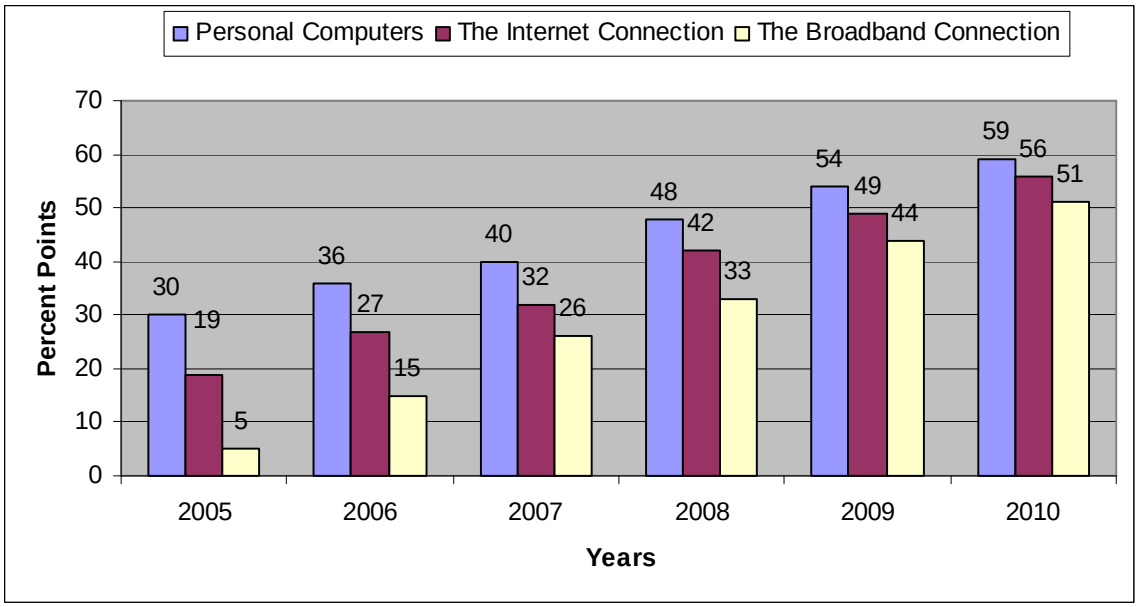
In the market households represent demand for companies' products. Therefore it is important to study how many households have access to the markets on the Internet.

There are basic questions about the presence of computers in households, connection to the Internet, and activities done on the Internet.

### 3.1.2.1 Households; Computers and Internet Facilities

There are two of the basic conditions for e-commerce; the presence of computers in households and the Internet connection. [25] When is important the growing number of broadband connections, since the connections enable much greater volume of data transfers. This ability of the Internet connection allows displaying and interacting of latest web applications, usually demanded for the capacity of connection and computers. It is possible to suggest, that broadband connections represent higher potential for e-commerce. [25]

**Figure 1: Households equipped with a personal computer, the Internet and high-speed of the Internet, 2 quarter reference year ( per cent of all households)**




Source: The Czech Statistic Office [10]

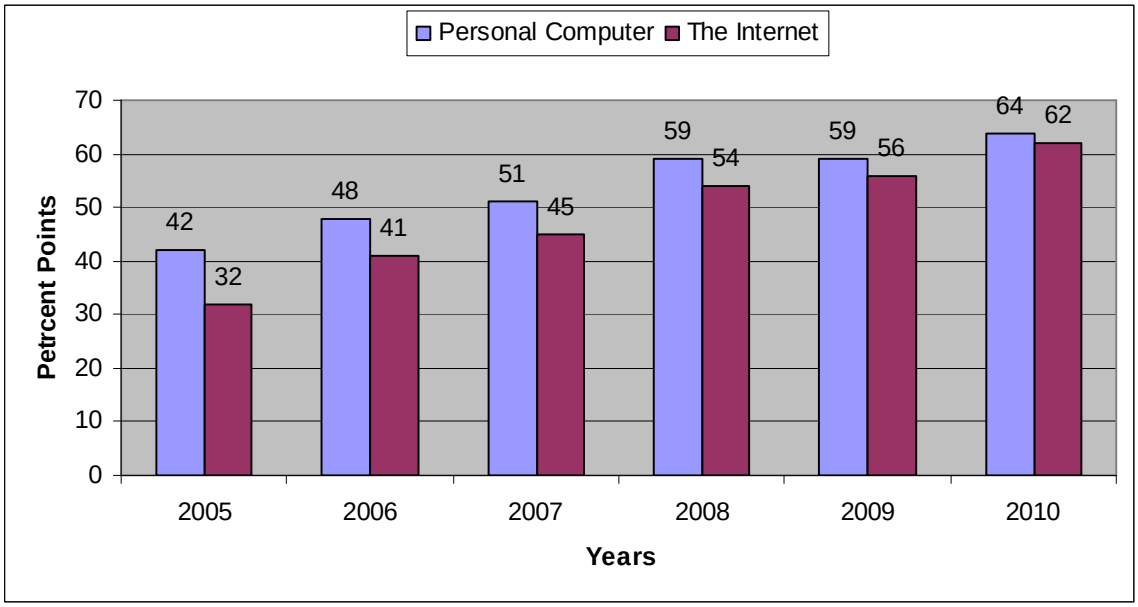
The figure 1 introduces sustainable growth either of households with computer, or households with Internet, moreover increasing number of households with fast broadband connection to the internet. In the second quarter of 2010 more than half of all households were equipped with personal computer. Total number was 2.4 million of households (59 per cent). 2.3 millions had accessed to the Internet (that is 56 per cent). This is more than half of all households in the Czech Republic. Five years ago, in 2005, there were 30 per

cent of households equipped by computer and only 783 000 of households (19 per cent) had access to the Internet. [10]

There are 1.8 million households without access to the Internet. The reasons are; they do not need or want the Internet (39 per cent, respectively. 38 per cent of households without internet). For 22 per cent of households without Internet the money is an issue, and the same number of households won't be able to work with the internet. One tenth of households do not connect to the Internet because they have access to it somewhere else than at home (at work, school, etc.). [10]

Not mentioning number of household equipped with computers and Internet connection it there the total number of people using computers is increasing. As it is mention above, people use computers at different places. [10]

**Figure 2: Users of personal computers and the Internet, 2 quarter of the reference year (percentage of all individuals aged 16 +)**



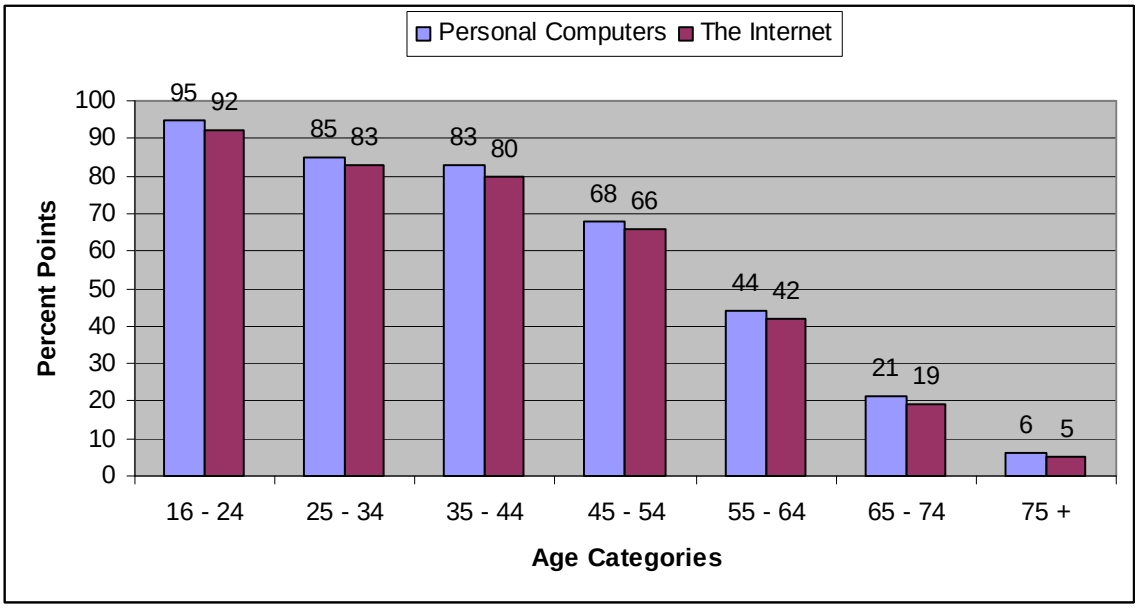

Source: The Czech Statistic Office [10]

The figure 2 shows that, in the second quarter of 2010, almost two thirds of Czech inhabitants over 16 years old (64 per cent, 5.7 million) used the computer. Number of the Internet users was slightly lower that time (62 per cent, 5.5 million).Five years ago, in the second quarter of 2005 3.7 million (42 per cent) of individuals over 16 years old used a PC, and 2.8 million (32 per cent) of individuals used the Internet in that same period. Number of the users of Internet almost doubled over last five years. [10]

### 3.1.2.2 Users of Personal Computers and the Internet

From the marketing point of view, the structure of people using the Internet is important. In 2010 men (66 per cent) used the Internet more often than women (58 per cent). Education is also an influence for the Internet. The Internet is used much often by people with higher education. In 2010 use Internet 15 per cent of people with primary and 88 per cent of people with tertiary education used the Internet. [10]

**Figure 3: Age categories of users of personal computers and the Internet, 2 Quarter 2010 (percentage of individuals in the respective group)**



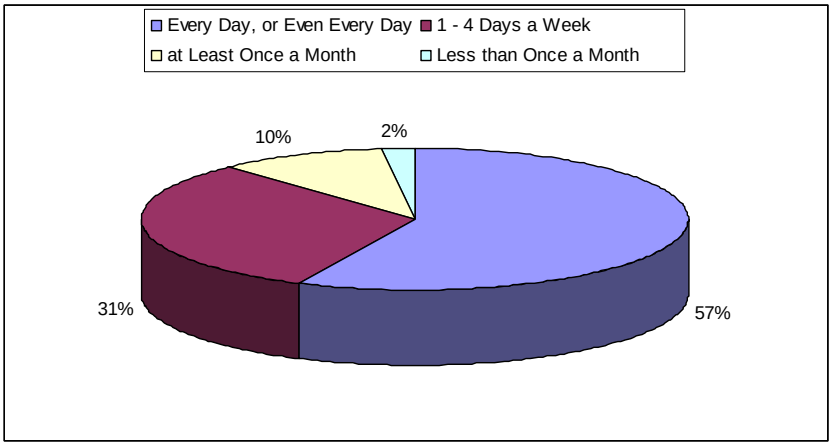

Source: The Czech Statistic Office [10]

The figure 3 illustrates the distribution of computer users in the respective age categories. There are three potent categories, 16 years old to 24 years old, 25 years old to 34 years old and 35 to 44 yeas old, where more than 80 per cent of people use the Internet. The number of people using the Internet in the elder categories is decreasing. [10]

### 3.1.2.3 Households; Using of the Internet

For the estimation of Internet markets potential it is crucial to know how often people use the Internet. The figure 4 shows the frequency of using the Internet and the Internet (Q2 2010) nine out of ten users used the computer and connected to the Internet at least once a week (88 per cent of Internet users). [10]

**Figure 4: Frequency of the Internet use, 2010 2nd quarter (percentage of the Internet users aged 16 +)**




Source: The Czech Statistic Office [10]

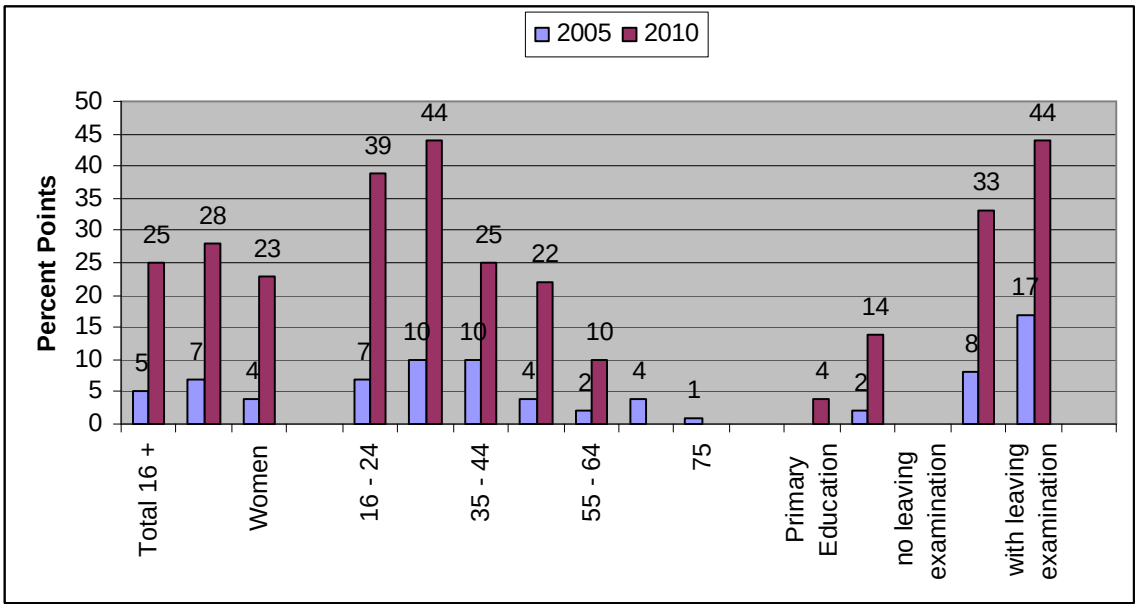
Among the youngest users aged 16-24 80 per cent use the computer every day, and for the Internet it is 75 per cent of users. In 2010, 79 per cent of all students at least once a week use a personal computer at school, 73 per cent of them connect to the Internet at school respectively. Almost in every kind of occupation 47 per cent of employees use a computer at least once a week at work, two of five employees (40 per cent) at work regularly (at least once a week) use the Internet. [10]

Very common is also use of the Internet for information gathering, 81 per cent of Internet users aged 16. Over 4 397 thousands searched online in the 2 quarter of 2010 for information about goods and services, 53 per cent (2 882 thousands) searched information on culture, 40 per cent (2 198 thousand.) interested in information about travel and accommodation, 31 per cent users (1 695 thousand) health information. [10]

### 3.1.2.4 Households; Internet Shopping

In the second quarter of 2010 a quarter of individuals over 16 years old (25 per cent, 2 247 000) bought goods on the Internet. This is five times more than in the 2005 (476 000 online purchases, by 5 per cent of individuals).

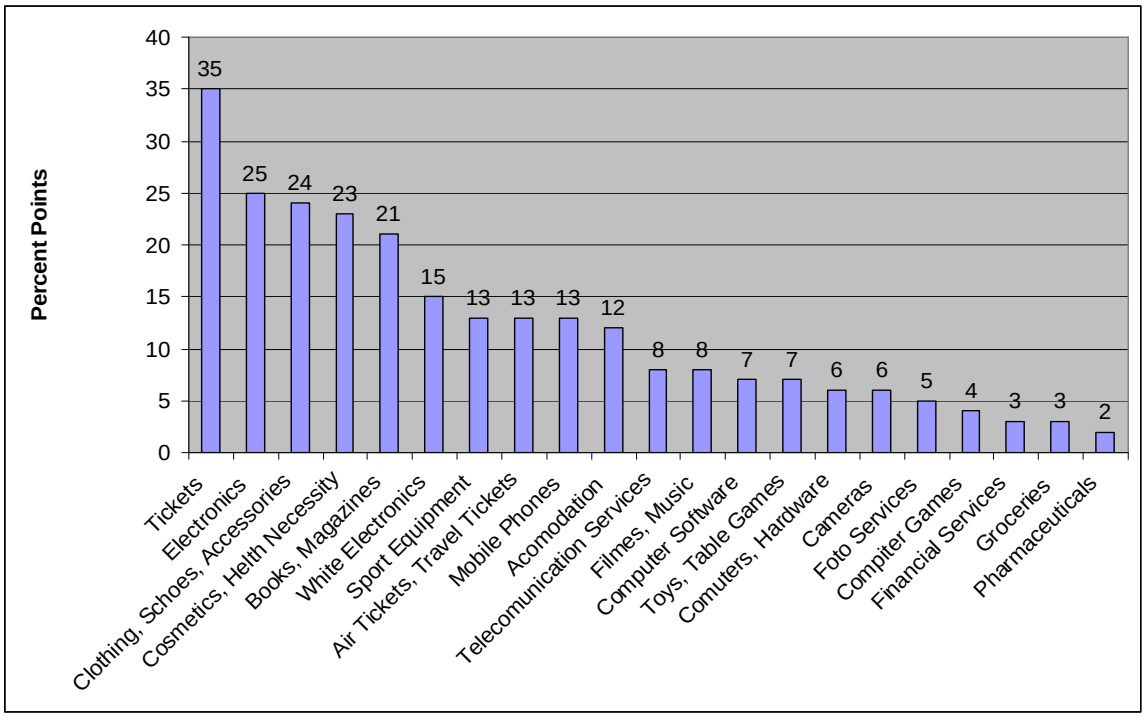
**Figure 5: Individuals purchasing on the Internet, 2 quarter of the reference year (percentage of individuals in the group)**




Source: The Czech Statistic Office [10]

Men (28 per cent) shop online more often than women (23 per cent) more often. In the age group 25-34 years 44 per cent of individuals shop online. [10]

**Figure 6: Goods purchased via the Internet, 2nd quarter 2010 (percentage of individuals who bought via the Internet in the last 12 months)**




Source: The Czech Statistic Office [10]

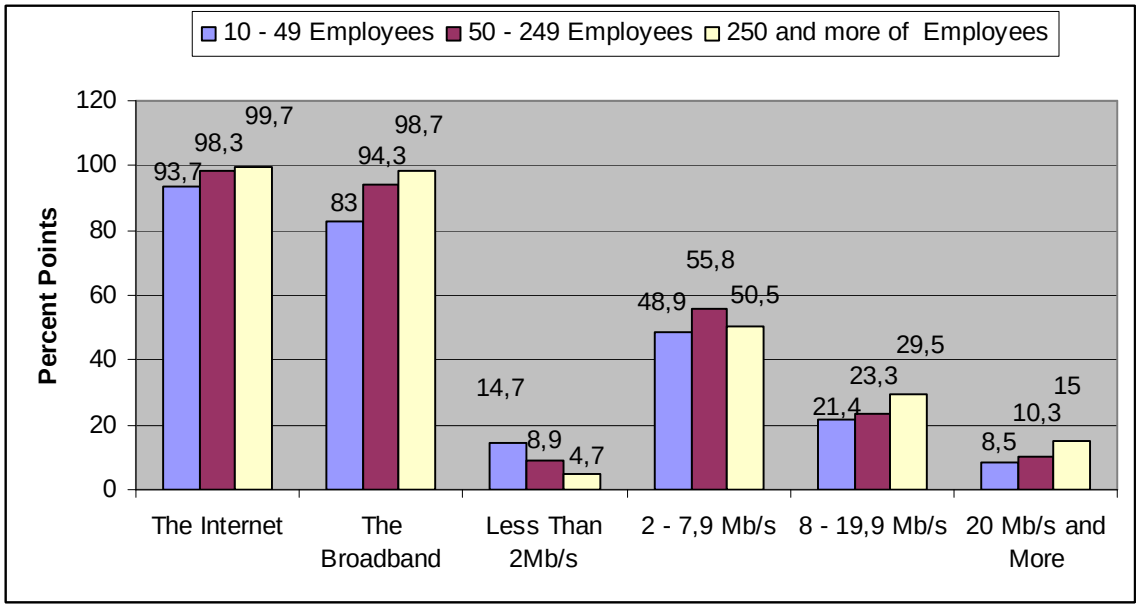
A third of those were purchased over the Internet in the last 12 months for private purposes, has ordered tickets for cultural, sporting or other events, (796 000 shoppers), a quarter of purchased electronics (552 000) or clothing, footwear and fashion accessories (540 000). Among the goods purchased more often by women over the Internet are cosmetics and medical supplies, clothing, shoes and fashion accessories, toys and board games and books. Goods purchased more often by men are computer games, other software, computer hardware, mobile phones, cameras, electronics and sporting goods. It is possible to say that even on the Internet are purchasing preferences of both sexes similar as in the shops. [10]

The most of those who have purchased goods or services over the Internet don't use Internet ways of payment. In 61 per cent all buyers pay in cash on delivery, 22 per cent cash or card with personal pickup. Payment via the Internet (credit card, transfer via Internet banking, through systems such as Pay Pal, etc.) was used by 38 per cent of all shoppers. [10]

### 3.1.2.5 Companies; Use of the Internet

The broad band connection is the key factor for access and management of advanced Internet applications. Fixed broadband connection to the Internet are included: ADSL or other DSL, wireless access (FWA), leased of digital line from telecommunication operators, cable television, and fibber connections (FTTx). [11]

**Figure 7: Connecting to the Internet in the enterprise sector, January 2010**




Source: The Czech Statistic Office [11]

In January 2010 it was 95 per cent of Czech companies that had an Internet connection. This share is almost unchanged in the last five years, in the late 2000, 75 per cent of companies, were connected to the Internet. In 2010 86 per cent of companies had fixed broadband. Since 2002, when broadband was possessed by 20 per cent of companies, the number has increased four times. [11]

Half of businesses using the Internet had a maximum connection speed from 2 Mb/s to 7.9 Mb/s. In January 2007, only 36 per cent of businesses had connected to the Internet faster than 2 Mbps, and at the end of 2002 it was only 1 per cent of the companies; In 2010, it is already 81 per cent of enterprises. Mobile broadband, (3G modem or 3G mobile phone) used in January 2010 was possessed by only 18 per cent of enterprises.

In January 2010 most of enterprises in the Czech Republic accessed the Internet by ADSL or other DSL technologies. This type of connection was utilized by more than half

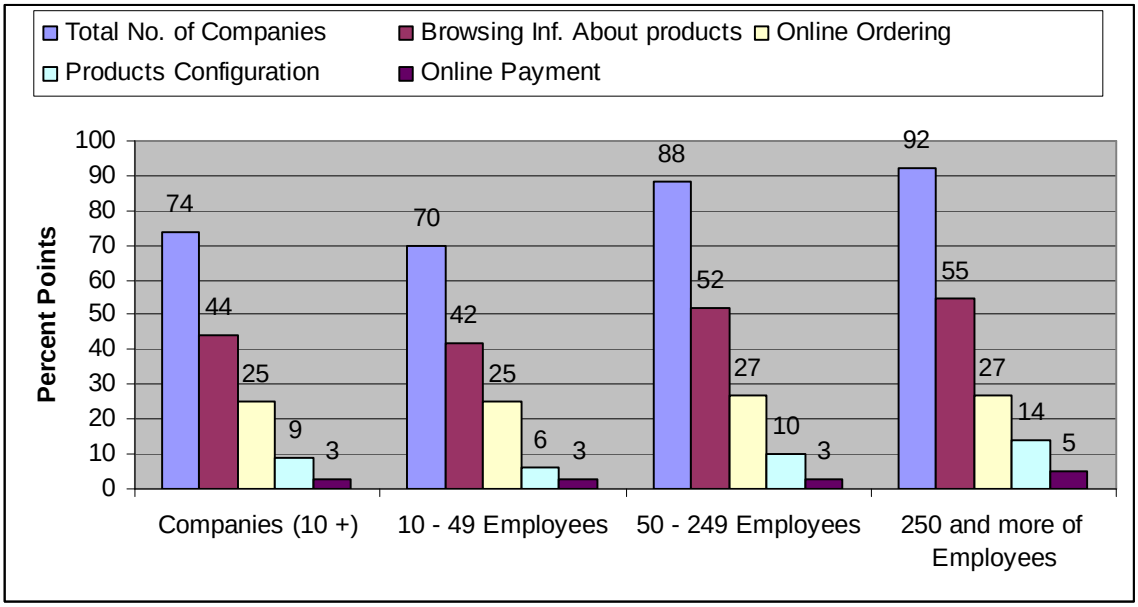
of companies (54 per cent). In December 2003 these types of connection were owned by only 7 per cent of businesses had. The second most common way of connection to the Internet was the wireless connection (up to 30 per cent). 3.6 per cent of small businesses and 23 per cent of large ones had fibber connections. [11]

#### 3.1.2.6 Companies; Web Sites and Their Use

In 2010 74 per cent of companies had own web site. In 2000 only 40 per cent and in 2006 it was 70 per cent. The average of the EU27 January 2010 is (69 per cent).

Content of corporate Web sites in 2010 were managed by an external company (57 per cent). 59 per cent of firms (80 per cent of those who have web sites) let its website be created by an external company. In January 2010, had 30 per cent of Czech companies foreign language versions; content of 40 per cent corporate web site has been completely or partially available in other than Czech language - the share is in the last five years the same. Information included in web sites were 68 per cent contacts of employees, 60 per cent of companies content was product catalogue, and less than a third (29 per cent) job offers.

**Figure 8: Enterprises with web sites and selected functionalities, January 2010 percentage of firms in a given group size**



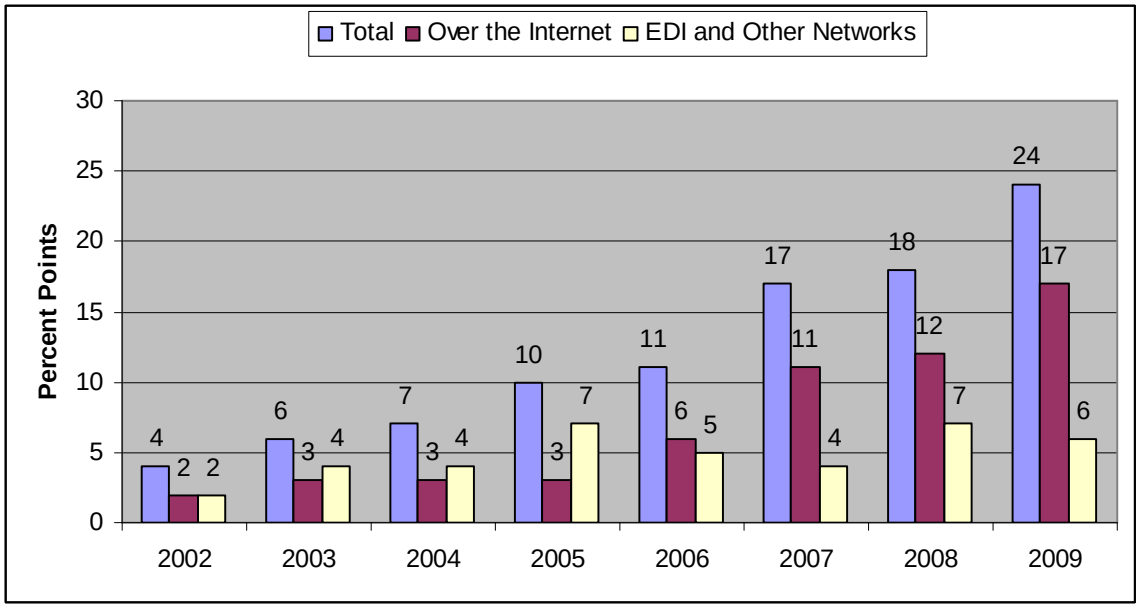

Source: The Czech Statistic Office [11]

Functionalities related to customers were in 25 per cent of cases reservation or order of a product. Very rarely allow web sites online payment (3.4 per cent) or to monitor the process of order implementation (4.7 per cent). Customer support through Web sites provide one fifth of firms - 27 per cent of those who have web page. Almost 11 per cent of companies (but nearly a quarter of large companies) have on their website site certificate about web sites safety. [11]

#### 3.1.2.7 Companies; Electronic Purchasing

The research delivered share of companies purchasing over computer networks (the Internet, EDI), share financial value of purchases over computer networks on total purchases and proportion between purchases over Internet and over EDI. [11]

**Graph 9: Value of purchases effected electronically, share of total purchases in companies with 10 or more employees in the monitored sectors**




Source: The Czech Statistic Office [11]

36 per cent of the companies purchased electronically in 2009 (at least one order over the Internet or other computer networks). The utilization of electronic trading (buying) is strongly dependent on the size of the business. The smallest companies use computer network it in 34 per cent and the corporations in 58 per cent.

Although the percentage of companies purchasing electronically in five past years has not changed much, there is a growing share and financial value of purchases carried out by means of electronic orders via computer network.

In 2002 the average of the electronic business purchases in the Czech Republic was 4 per cent of total purchases, in 2009 accounted for nearly 25 per cent. [11]

Electronic data interchange in 2009 60 per cent participated in the electronic shopping about (60 per cent via the Internet and 40 per cent over other networks) and 30 per cent of purchases were made on public accessible websites. Nowadays the importance of the Internet as the main communication channel for electronic orders is increasing. On the other hand usage of other computer network (usually the private computer network) is declining. [11]

#### 3.1.2.8 Companies; Electronic Sales

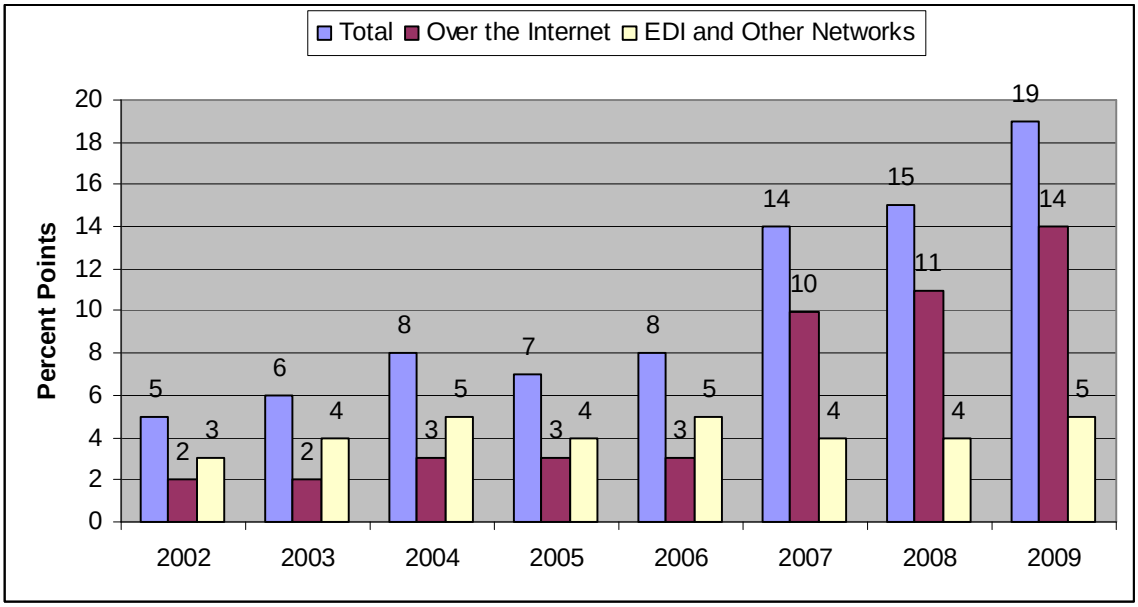
Electronic sale as part of electronic commerce is defined as the sale

(Receiving / acceptance of order, regardless of method of delivery and payment) via the Internet or other computer networks (inter-company private information network) through the web site (e-commerce site) or via electronic data interchange (EDI commerce). Percentage of businesses selling electronically is lower than the percentage of companies electronically purchasing. [11] In 2009 21 per cent of enterprises accept at least one electronic order via the Internet or another computer network. The share of electronic sales of businesses over the Internet or other computer networks in higher than average in the EU27.

In the Czech Republic 14 per cent of firms (67 per cent of those who sold electronically) in 2009 use its web sites for receiving electronic orders, and 10 per cent use electronic data interchange (48 per cent of those who sold electronically). [11]

92 per cent of companies using electronic data interchange for sale do it via the Internet and 25 per cent over other computer networks (17 per cent of businesses use it both ways). Only half of the companies, which sold in 2009 through their Web sites, use a secure protocol (SSL, TLS) for receiving electronic orders. Sales through the Web site are used primarily for sales to final customers and are so typical especially for businesses operating in areas such as travel agencies, where in 2009 it was used 56 per cent of enterprises, or housing (35 per cent). [11]

**Figure 10: Financial values of e-business sales in the Czech Republic share of total sales in enterprises with 10 or more employees in the monitored sectors**




Source: The Czech Statistic Office [11]

However, EDI is typical for trade among enterprises themselves. They use it mainly in large companies - 30 per cent of large companies in 2009 used this possibility to their sale, and only 8 per cent of small businesses. From the perspective of the sector's electronic data interchange it was the automotive industry, where long-term trading was most common. Since 2006, annual electronic sales have been growing in the business sector. In 2005 the revenues from orders received via computer networks contributed to the overall business turnover of approximately 7 per cent and in 2009 it was almost a 20 per cent - the one of the largest shares in the EU. Intensity of electronic sales increased significantly. [11]

Electronic Data Interchange in 2009 contributed to the electronic sales by three-quarters (66 per cent over the Internet and 44 per cent through other networks). From this information it is clear that as regards the volume (among of money) of e-commerce, the most of it is realized among enterprises. The share of sales among money of orders received via computer networks is higher for large enterprises (28 per cent) than middle (12 per cent) or small ones (8 per cent). The share of value of electronic sales in total sales was the largest in sector of the manufacturing industry (about 28 per cent) and in the production and distribution of gas, heat and water (25 per cent). [11]

## 3.2 Data Boxes

Information and communication technologies in public sector are often discused. There are ITC applications already implemented in public sector in the Czech Republic. These applications are usually advanced information systems, determined by common characteristics; strong secure, able to store and proceed huge among of information, consistent with actual legislation. [19]

Despite the fact, that Czech administration uses advanced information systems, databases, and portals and so on, public opinions are rather negative about it. In general people thing, that public sector should maintain more from ITC, so that the quality of the public services increases. These opinions are probably influenced by the fact, that most of these applications are created as internal applications of public sector and public benefits from them indirectly. [17]

This is no excuse for performance of ICT in public sector. Efficiency should be the key success factor in preparation, implementation and evaluation of each ITC application. [19]

A new application that is designed for direct public uses data boxes (Datové Schránky).

Data boxes became new part of e-government applications in the Czech Republic. They are an electronic delivery system of documents and an information system. [21]

A purpose of data boxes is an exchange of official documents within public administration, between public administration, enterprises, citizens.

The key point of the system is technical solution, because it is required the guaranteed delivery, notifications and strong security of all information transactions. [21] Goal of this project is to create tool for complete electronic way of communication and work flow of official documents. Data boxes are possibility for citizens to communicate electronically with public administration with guarantied delivery, security, and legal validity of documents. [21]

### 3.2.1 Definition of Data Boxes

Data Boxes are defined by the call. No. 300/2008 about electronic transactions and authorized conversions of documents (o elektronických úkonech a autorizované konverzi dokumentů).

*Data Box is an electronic data repository that is intended to the delivery from public authorities, and delivery to the public authorities. Data boxes are set up and administered by the Department of Interior.* [28]

### 3.2.2 Introduction of Data Boxes in the Czech Republic

The introduction of the system to public had following steps.

The first of all was proving of the code of law no. 300/2008 about electronic transactions and authorized conversions of documents (o elektronických úkonech a autorizované konverzi dokumentů) It has been proved on 17/7/2008. Than the system was introduced to administration officers for discussions and trainings. After that the application was launched, on July 2009. It was testing time, so that all difficulties or mistakes would revile and would be solved. This time was also preparation period for entities, which had an establishment of data box obligatory according to low. The biggest occasion was on 1/ 11/2009, when the application was launched also for public use. [17] Since the November 2009, many details about data boxes have been already changed. It is continuing process of implementing feedbacks and suggestions. [21]

.The administrator of the information system of data boxes is the Ministry of Interior. Operator of the Information System is holder of the postal license. It is The Czech Post. [28]

### 3.2.3 Data Boxes, Features and Utilities

The aim of this chapter is not to stress all facts from the code of law no. 300/2008, but to pick up only facts related to the public users and companies.

#### 3.2.3.1 Establishing of Data Boxes

The code of law no. 300/2008 defines condition for setting up the data box. Data box can be open for private entities, legal entities, and public authority.

Data boxes are set up by the Ministry of Interior, within 3 working days, free of charge on a request of the entity. Private entities and legal entities can apply for one data box only. Application for data box includes personals or companies identification in formations. If the application is wrong ask for correction. If there is no correction or if there are other reasons, for example private entity already has the data box, the Ministry of Interior informs the entity, that the data box is not possible to establish.

There are also special types of legal entities, lawyers, tax consultants and the insolvency administrators. The Ministry of Interior sets up data boxes to them immediately, when these entities are listed in appropriate registers.

Data box is set up by first log in on web page mojedatovaschranka.cz. A user name and password will be delivered to an entity into the hands by mail from the Ministry of Interior. Before the log in it is necessary to install additive software and test browser.

The Ministry of the Interior can also cancel the data box in defined cases. [28]

#### 3.2.3.2 Communication – Exchange of Documents

Exchange of documents between public authorities and entities has to be done through data box, unless the document is able to be sent as electronic document.

Public authorities also have to send documents to the entities in cases when entities have set up data box and it is possible to send document via a data box.

The documents and messages delivered in to a data boxes are considered as read the tenth day after delivery. It is considered as read even if the owner of the data box did not look in. These documents delivered into the data boxes have same legal validity as document delivered by mail in to hands. The content of data messages and all its parts must be adapted, so that it was possible to introduce and further processed without special technical knowledge [28]

#### 3.2.3.3 Conversion of Documents

There is important fact about messages delivered in data boxes, after 90 days, these messages will be delete from the data box. It is an issue if the document is supposed to be used later. Therefore the code of law defines conversion of documents.

Conversion means complete conversion of paper documents into document in the data message and keeps conformity of the content of these documents and the verification. Conversion means also complete document transfer including hard copy of the data message to a document in paper form and checked conformity of the content of these documents and the verification clause.

Procedure for Conversion is based on verifying of a qualified time stamp and verifying of a qualified certificate or electronic signature. These verifying procedures are provided by accredited certification departments. [28]

#### 3.2.3.4 Information system

Important rules are about information system, because the security is essential for all subjects involved in. Strong legal system is important as prevention from information leaking or as a support in cases of real problems. The information system of data boxes contains information about data boxes and its users. This information is private and can not be given to someone else. The administrator and operator of data boxes information system are required by the call to provide appropriate security for the system. The administrator and operator of the information system are not able to get into the data boxes of other entities. [28]

#### 3.2.3.5 The Ministry of Interior

There are defined responsibilities of the Ministry of Interior. The Ministry ensure creation of qualified time stamps and mark the data message, delivery of the data message from the data box of sender to the receiver, notification the sender that the data message was delivered to the address data box, and this announcement marks by the electronic sign. [28]

### 3.2.4 Figures of Data Boxes Implementation

The utilization of data boxes is increasing. The Czech Post has published first statistics about data boxes, from November 2009 to the end of the year 2009 were 369381 of data boxes opened. 45 per cent of them were not active. Total number of messages transferred were 5 061753. [14] Ing. Jan Fischer, CSc., Prime Minister of the Czech Government at that time said, that the information system transfers more than 100000 of messages a day. [16 ] Since November 2009 till the end of February 2010 the system transfer total number of 6 316 126. [18]

The willingness of citizens to communicate with public administration electronically is increasing. In 2003 28 % of respondents wanted to use electronic means of communication with public administration. In 2008 it was 45 % respondents and 18 % of them already did. [27]

This development is optimistic, but crucial is the number of people really using these applications, so that data boxes brought significant improvement. There is also important attitude of officers to use new application and actively contribute it to their implementations.

Data boxes in synergy with electronic signature, electronic time stamp, and electronic document mark are basement for complete electronic work flow of authorities.

# 4. Case study: GTX Invention s.r.o.

This case study of GTX Invention s.r.o. has three parts. The first part is about case study research. Goals of the research and information about used methods are introduced. The second part is called case study report. This chapter is final report from the research. The last part of the case study is the chapter called discussions. This chapter includes opinions of author on the case study report and new questions for further discussions arise concerning research or development.

## 4.1 Case Study Research

The preparation of the case study research includes definition of the aim of the research, theoretical perspectives, methodological tools, and selection of the object, formulation of research questions, linking of these questions to research tools, preparation of protocols, and time line.

### 4.1.1 Aim of the Case Study

The Aim of the case study GTX Invention s.r.o. is to run detailed research, discover and collect enough information so that it will be possible to write a case study report. The case study report should define in details situation of the company in terms of data boxes, e-business and e-commerce. The case study report should be based for further discussions, question and inspiration for further research and development.

The case study report should also bring information contributing to the final conclusion of the diploma thesis. The conclusion is about proving or disproving the thesis: data boxes brought new opportunities for e–commerce and e-business in the Czech Republic, and there are possibilities for new applications of data boxes solution contributing to the e-commerce and the e-business.

### 4.1.2 Theoretical Perspective

Identifying a theoretical perspective is done according to the aim of the research and the object of the research. The aim of the research is introduced above and object is company GTX Invention s.r.o., its business case, usage of data boxes and relationship to the e-commerce and e-business.

There are three theoretical perspectives; organizational theories, social theories, individual ones. The theoretical perspective of organizational theories is the most suitable for the aim of the case study, because the case study is focused on organisation. Other theories could bring also interesting point of view on the topic, but for the purpose of the case study are less suitable.

It is also important to decide about the type of the case study. There are four main types, illustrative case studies, exploratory (or pilot) case studies, cumulative case studies, critical instance case studies. The illustrative case studie is chosen for the purpose of the research. [7] The main reason for choosing illustrative case study type is the unique usage of data bodes in GTX Invention s.r.o. There is only small number of companies using data boxes as part of their business practice as it does GTX Invention s.r.o.

### 4.1.3 Selected Object of the Case Study

The company GTX Invention s.r.o. was selected for three main purposes. First of all is that the company attracts customers primarily by the Internet presentation. Internet applications create big part of their services, therefore the company contributes to the e-commerce, especially the supply of services and e-business. Second reason is that services provided by the company are based upon the usage of data boxes. The third reason is that the owner of the company has a positive attitude about the research and agreed on publishing of foundlings. The last reason was that company represents good case practise of usage of data boxes; opposite to cases spread by media. Furthermore usage of data boxes in this company is component of their business practice and usage of data boxes contributes to generating of the profit.

### 4.1.4 Research Questions and Related Tools

Other step of research preparation is defining questions and tools that reveal answers.

Case studies are usually based on questions HOW and WHY. Question HOW and WHY bring wide answers, easy to link them with context. This is, in contrast to the quantitative research, based on questions WHO, WHAT, WHERE, HOW MUCH, HOW MANY. These quantitative questions study the past, historical development and the context or reasons behind numbers are hard to identify. It happens very often that reasons behind numbers are influenced by researcher opinions. The quantitative questions usage is a method that can partially avoid such influence. [7]

For the purpose of the case study: GTX Invention s.r.o. it is suitable to ask also questions HOW, WHY and also quantitative questions, because in the fields of economy and management figures complete a picture of the situation in the company.

There are four charts below this paragraph. All of them include questions and appropriate tools for finding answers. Questions are organized into charts according to four topics; organisation of the company and elementary information, services of the company, data boxes in practise, e-commerce, e-business in practise. During the research, collected information included more than the researcher asked for. This is an effect of open questions and added value of the case study research method. The information is involved into the case study report.

**Figure 11: Organization of the company and elementary information**

| Questions | | Tools |
|---|---|---|
| 1 | Where is the company located and why? | Interview |
| 2 | What is legal status of the company and why? | Interview |
| 3 | How many employees the company hires and why? | Interview |
| 4 | What offices and equipment does the company use and why? | Interview |
| 5 | What is historical development of the company and why? | Interview |
| 6 | Why did the company start with the service and how? | Interview |
| 7 | How does the company competing with competitors? | Interview |
| | Why do they use such approach? | Interview |
| 8 | How are the pricings set up and why? | Interview |
| 9 | What are the prices of services? | Interview |
| 10 | What are savings due to data boxes? How much are the savings? | Interview Transaction Cost Analyses |
| 11 | How many permits did the company already realizes and why? | Interview |
| 12 | What types of permits the company realizes? | Interview |
| 13 | How does the economy of the company look like? | Interview |
| 14 | How much are the costs? | Interview |
| 15 | Why do you calculate them like this? | Interview |
| 16 | How do customers usually approach the company? | Interview |
| 17 | How do customers look like? | Interview |
| 18 | How do customers get to know about the company? | Interview |

Source: Own research question

The figure 11 includes questions about organization of the company. Purpose of this question is to collect information about location of the company, employees, customers, and basic information about services. Questions are also focused on economics, especially on assets, costs and revenues. The main tool of information collecting is the interview with owner of the company. The second tool is the Transaction Cost Analyses. This analyses should prove, that implementation of data boxes brought cost saving to the company.

**Figure 12: Services of the company**

| | Questions | Tools |
|---|---|---|
| 1 | How is the service provided and why? | Interview<br>Study of Doc. |
| 2 | What do customers usually expect from the company? | Interview |
| 3 | What services does the company do and why? | Interview |
| 4 | How does the company communicate with institutions and why? | Interview<br>Observation<br>Study of Doc. |
| 5 | Why do they consume the services of the company? | Interview |
| 6 | How does the company use data boxes? | Interview<br>Observation |
| | Why do they use such approach? | Interview |
| 7 | What is the process of services and why? | Interview |
| 8 | What is average duration of the process and why? | Interview |
| 9 | Which institutions does the company communicate with through data boxes? | Interview<br>Observation |
| 10 | What documents does the company exchange through data boxes? | Interview |

Source: Own research questions

The figure 12 contains questions about services, which the company offers. These questions should primarily point out sequences of processes during services realization, so that it will be clear where the company uses data boxes. The main tool is the interview with owner of the company. The second tool is the observation of data boxes web application usage. Output from the observation is supported by print screens. The last tool is the study of documents. These documents are represented by complete number of letters exchanged between the company and institutions during realization of building permits for a production and storage hall with photovoltaic power station.

**Figure 13: Data boxes in practise**

| | Questions | Methods |
|---|---|---|
| 1 | When did the company start with data boxes and why? | Interview |
| 2 | How did they get the first information about data boxes? | Interview |
| 3 | What is reliability of the system? Was every message delivered? | Interview |
| | How do you know it? | |
| 4 | What is reliability of the system? Was every message delivered? | Interview |
| | How do you know it? | |
| 5 | What is the safety of the system? | Interview |
| 6 | What is technical solution of data boxes? How was it installed? | Interview |
| 7 | Haw fast is the application? | Interview |
| | Are there any problems with connection demanding, computer capacity? | Interview |
| 8 | What is your experience with conversion of documents? | Interview |
| 9 | What is experience with validity of documents delivered trough data box? | Interview |
| 10 | What are the outputs of documents? Why? | Interview |
| 11 | How does the company use data boxes in its business case? | Interview Observation Study of Doc. |
| | Why do they use such approach? | |
| 12 | How fast do institutions respond? | Interview |
| 13 | How does the time stamp look like, do you use it? | Interview |
| 14 | What are recommendations for possible changes of data boxes and why? | Interview |
| 15 | What could be other commercial possibilities of data boxes? | Interview |
| 16 | What capacity is Data Box? Is it satisfactory? | Interview |
| 17 | What about allowance formats of documents? Is it satisfactory? | Interview |
| 18 | What are saving due to data boxes? | Interview Transaction Cost Analyses |
| | How big are the savings? | |

Source: Own research question

Figure 13 includes question about en experience with data boxes. The aim of these questions is to investigate, how is the company using data boxes, how is satisfy with technical solution and functioning of the system. The main tool is interview with owner of the company. Also for this topic are used findings from transaction cost analyze, observation, and study of documents.

**Figure 14: E-commerce, e-business in practice**

| | Questions | Tools |
|---|---|---|
| 1 | How does the company attract customers and why? | Interview<br>Study of Web S. |
| 2 | How does the company do promotion and why? | Interview |
| 3 | What do they promote and why? | Interview |
| | How does the company communicate with customers and why? | |
| 4 | What is the content of web pages and why? | Interview<br>Study of Web S. |
| | What are the priorities of the company presentation on the Internet and why? | |
| 5 | What are the key words of web pages and why? | Interview |
| 6 | What are the performance statistics of the web pages? | Interview<br>SE Trial |

Source: Own research question

The figure 14 displays questions about relations of the company with e-commerce and e-business. The aim of these questions is to find out how is the company contributing to the e-commerce and e-business in the Czech Republic. The main method is the interview. The second method is the study of web sites focused on content and structure of web pages. The last tool is trial of key words searched by Google and Seznam.

## 4.2 Case study: GTX Invention s.r.o. Report

Text o tom co je v reportu, jake ma casti, co v nich je

### 4.2.1 Company Introduction

The business was set up by Mr. Miroslav Světlík in 2008. After two successful years the company became a company limited under the name of GTX Invention s.r.o. Miroslav Světlík is the only owner. The company was founded in Ladví u Prahy. It is a small village near Prague, Czech Republic.

The company provides consulting and deputizing of clients for communication with Building Department of the Czech Republic in cases of Building Permit Application and Building Announcements. The company is focused on specific areas: Prague-east, Prague-west, Benešov, Kladno, Beroun, and Prague.

Company GTX Invention s.r.o. builds its success on the experience in applying for permits and it is aspiring to the high effectiveness of its processes. The company gains much from the Internet and other communication technologies. The company promotion is based on Internet and a web presentation. Since 30$^{th}$ of May 2008 the company uses websites on following domains PAPIROVANI.CZ, OHLASENI-STAVBY.CZ, STAVEBNI-POVOLENI.COM. Realizations of company's services are also as much as possible based on the internet. Very important impulse for further development of the company was data boxes introduction by the Ministry of the Interior of the Czech Republic. GTX Invention s.r.o. started to use data boxes in the first days of its launching.

### 4.2.2 Services of the Company; Introduction

Services of the company are based on consulting and deputizing of clients for communication with Building Departments of the Czech Republic and other institutions in cases of Building Permit Application or Building Announcement. These documents are necessary for starting up building projects.

The Building Permit Application and the Building Announcement are official permits resulting from call.183/2006 Act. Building Act (183/2006 Sb. stavební zákon).

These permits are issued by Building Departments, which is administering specific areas. Any subject in the Czech Republic, legal or private entities who want to start building, have to follow current legislation related to the building and apply for the Building Permit and the Building Announcement. Without Building Permit or the Building Announcement it is not allowed to do any building activities on the spot. The code of law 183/2006 defines when it is possible to apply for Building Permits or to do only the building announcement. The main condition is a size of the planed building. In booth cases applications are collections of official statements from various number of institutions and other documents.

To get positive reply for Building Permit or Building Announcement is necessary to fulfil requirements according to legislation and also according to specific Building Department. These conditions issued by Building Departments depend for example on type of the building, purpose of use, land, character surrounding architecture and so on.

The process of getting Building Permit Application or Building Announcement has two parts. The first part is preparation and collection of all documents, the second part is the final application, reviewing the application by the Building Department and final statement of the Building Department.

The first part looks like a simple process, but practically it is much more complicated. In the Czech Republic, there are Building Departments on the level of cities and municipalities. Each Building Department has specific requirements depending on the area that is administered. This practically means that requires are always different, however, the legislation background is the same. The content of application is set of statements from various institutions.

Every applicant has to know which institutions approach and what documents to collect. The issue here is that each institution has specific respond time and also documents have specific time expiration.

In practice it can the missing of one document could cause expiration of other document and all the process is getting into the circle. Time of the preparation the application is getting longer and longer. These difficulties occur often. Time is important factor in building in many ways, it is important because of financing, investments and returns of investment planning. The time is also an important factor because of weather; it is not

possible to build in winter. Furthermore families have to manage their place to live. There is also a phenomenon of high percentage of divorces during time of house building.

The second part is final application subsistence, and waiting a probation time for statement from the Building Department. The accuracy during preparations of documents influences the result of the Building Department. Applications without mistakes are likely to be sent back.

Legal and private entities, who want to start building, are clients of the company. The reasons why they are interested in services of GTX Invention s.r.o. are difficulties in collecting all necessary documents for applications. It is unlikely to succeed for the first time. Applicants are in unpleasant and risky situation, waiting for other chance to apply.

### 4.2.3 Services of the Company; Categories

The character and the conditions of applying for Building Permit and the Building Announcement determines various needs of customers. Every case differs. The range of services is agreed at personal meeting with all customers. The price of the service is agreed after discovering all requires for an application from appropriate Building Department. The company creates and publishes on web pages certain categories of their services and prices.

#### 4.2.3.1 Building Announcement Application I

There are two categories. Customer who wants to start building on the plot, where all necessary engineering utilities (water, electricity, canalization, gas) are permitted and already built, can chose the first category.

**Figure 15: Building Announcement Application I**

| **Building Announcement**<br>**all engineering utilities are permitted and already built** |
|---|
| Price includes |
| • One personal meeting with applicant<br>• One introductory meeting at the Building Department<br>• Maximum of 15 statements of institutions (average amount is 10-15)<br>• Application delivery |
| Price does not include |
| • Travelling<br>• Fees<br>• The final formal session at the Building Office<br>• Removal from the Agricultural Land Fund<br>• Preparation and sending of letters with building documentation to neighbors |

Source: www.gtx.cz

That situation is rare or even non-existing. The main purpose of creation and promotion of this category is reaction on cheap competitors. These competitors are new on the market and they promote lower prices than GTX Invention s.r.o.

#### 4.2.3.2 Building Announcement Application II

Much more often there are customers who want to build on the plot without permits for engineering utilities. For them there is the second category. This category includes all necessary collection of documents required for engineering utilities permits.

**Figure 16: Building Announcement Application II**

| **Building Announcement**<br>**permits applications for engineering utilities are included** |
|---|
| Price includes |
| • One personal meeting with applicant<br>• One introductory meeting at the Building Department<br>• Maximum of 15 statements of institutions (average amount is 10-15)<br>• Application delivery<br>• Four engineering utilities (electricity, gas, water, canalization) |
| Price does not include |
| • Travelling<br>• Fees<br>• The final formal session at the Building Office<br>• Removal from the Agricultural Land Fund<br>• Preparation and sending of letters with building documentation to neighbours |

Source: www.gtx.cz

In the case of engineering utilities there is one exception. The company GTX invention s.r.o. provides only prearrangement of final contract. There is no chance to act according to power of attorney. Engineering utilities permits are necessary part of either Building Announcement or Building Permit Application.

#### 4.2.3.3 Building Permit Application I

Client who does not reach conditions for Building Announcement has to apply for Building Permits. There are also two categories of services divided according to same rules as previous categories.

**Figure 17: Building Permit Application I**

| **Building Permit**<br>**all engineering utilities are permitted and already built** |
|---|
| **Price includes** |
| • One personal meeting with applicant<br>• One introductory meeting at the Building Departement<br>• Maximum of 15 statements of institutions (average amount is 10-15)<br>• Application delivery |
| **Price does not include** |
| • Travelling<br>• Fees<br>• The final formal session at the Building Office<br>• Removal from the Agricultural Land Fund |

Source: www.gtx.cz

Customer who wants to start building on the plot, where all necessary engineering utilities (water, electricity, canalization, gas) are permitted and already built can chose the first category, Building Permit Application I.

#### 4.2.3.4 Building Permit Application I

Customers who want to build on the plot without permits for engineering utilities can choose the second category. This category includes all necessary collection of documents required for engineering utilities permits.

**Figure 18: Building Permit Application II**

| **Building Permit**<br>**permits of applications for engineering utilities are included** |
|---|
| Price includes |
| • One personal meeting with applicant<br>• One introductory meeting at the Building Departement<br>• Maximum of 15 statements of institutions (average amount is 10-15)<br>• Application delivery<br>• Four engineering utilities (electricity, gas, water, canalization) |
| Price does not include |
| • Travelling<br>• Fees<br>• The final formal session at the Building Office<br>• Removal from the Agricultural Land Fund |

Source: www.gtx.cz

All these figures contain two parts. The first part is about services included in the price, the second part includes list of services that are not in the agreed price. Reason for this strict definition is increase of costs control.

### 4.2.3 Services of the Company; Pricing

Since the beginning of the company, GTX Invention s.r.o. has presented their prices on web pages. They have presented 18000 CZK per case. The final price for each case was proved after the first introductory meeting at a Building Department. Purpose of this meeting is to find possible complications in advance. When the case is more difficult than usual, the price increases. In average, cases have been done for 18000 CZK. The price included everything, travelling, one personal meeting, first introductory meeting with Building Department, collection of documents, delivering application and final meeting at Building Department. Common of this approach was that customers knew the possible price before they approach the company. It was easy to reach agreements with clients. Disadvantages on the site of GTX Invention s.r.o. were substandard workflow of institutions a specific condition for each case. It was hard for the company to manage costs and estimated profit. Therefore since the year 2011 GTX invention s.r.o. has introduced new price list and concrete specification what is included and what is not included in each category.

**Figure 19: Prices of services categories**

| Services | Price |
|---|---|
| Building Announcement<br>All Engineering Utilities are Permitted and Already Built | 5.000 CZK |
| Building Announcement<br>Permit Applications for Engineering Utilities are Included | 8.000 CZK |
| Building Permit<br>All Engineering Utilities are Permitted and Already Built | 7.000 CZK |
| Building Permit<br>Permit Applications for Engineering Utilities are Included | 10.000 CZK |

Source: www.gtx.cz

From the first point of view the new prices of the year 2011 are lower than previous pricing. But the final price includes also fees related to the differences of each case.

**Figure 20: Prices of variable services**

| Variable Services | Price |
|---|---|
| Removal of the land from the Agricultural Land Fund Including the Processing of Documentation | 1,500 CZK |
| Preparation and Sending of Letters with Building Documentation to Neighbours by Certificate Mail | 140 CZK / 1 letter |
| Charge for Travelling | 9 CZK / Km |
| Time out of the frame of agreed services | 300 CZK / hour |

Source: www.gtx.cz

This approach increases overview of customers, depends on what they pay for and GTX Invention s.r.o. has control over costs covering.

Important strategy about pricing is division of payment into the two parts. At the time of agreement between client and GTX Invention s.r.o. the company charge advance payment. The rest of the price is paid when the company collects all required documents and prepares the application. This strategy is fair for both sides. The company eliminates unpaid services to the zero. The company presents this strategy as advantage for customers; due to the zero percentage of unpaid services the company can keep low prices.

**Figure 21: Payments conditions**

| Payments Conditions | Price |
|---|---|
| Advance payment | 2,000 CZK |
| The rest of the price is paid when the application is ready and before sending it the Building Department | |

Source: www.gtx.cz

The company GTX Invention s.r.o. does not pay and charge Value Added Tax (VAT). Prices which they promote are final.

### 4.2.4 Reference Completed Project; Communication with Authorities

This chapter is all about one concrete application for Building Permit. The firs part of this chapter includes introduction of the case. The second part includes list of requests for statements from various institutions and their responds. The last part is concluding this chapter by quantification of data boxes usage frequency, either of the company and institutions.

The company GTX Invention s.r.o. was asked to do Building Permit Application for another company which wonted to build production and storage hall with photovoltaic power station.

The hall was plan in village near to Kladno. The process of collecting all necessary documents started on 23rd of April 2010. Specifics of this case were determined by the location. In that area were historically coal mine, therefore there were risks of ground drops due to undermining. Information about the situation under concrete plot was given from local mining office and this information was obligatory part of Building Permit Application. Other specific requirement was about planed colour of the building, according to a local environmental office the colour had to be changed from red and shadow to light-green or shadow. New colours fit better in to landscape. During the process of collecting all documents for Building Permit Application was decided about stopping of realizing the photovoltaic power station. Reasons were late preparation of project by an architect and consequently lost of an endowment.

**Figure 22: Communication to institutions; means of communication**

| No. | Name of an Institution in Czech / Description in English | Date | Means of Com. |
|---|---|---|---|
| 1 | Městský úřad Slaný, Odbor životního prostředí<br>Municipality of Slaný, The Environment Department | 23 April 2010 | Mail |
| 2 | Středočeská Plynárenská a.s.<br>Gas distributor | 28 April 2010 | DB |
| 3 | Slavos s.r.o.<br>Water distributor | 28 April 2010 | DB |
| 4 | VUSS<br>Czech army properties | 28 April 2010 | DB |
| 5 | Obvodní báňský úřad<br>Regional mining authority | 28 April 2010 | DB |
| 6 | ČEZ Distribuce a.s.<br>Electricity distributor | 28 April 2010 | DB |
| 7 | Telefónika O2<br>Telecomunication company | 28 April 2010 | WEB |
| 8 | Palivový kombinát s.p.<br>Operator of collieries | 28 April 2010 | DB |
| 9 | ČEZ Distribuce a.s.<br>Electricity distributor | 21 October 2010 | DB |
| 10 | Archeologický ústav AV ČR<br>Institute of Archaeology of the Academy of Sciences of the CR | 28 April 2010 | DB |
| 11 | Krajský úřad středočeského kraje, Oddělení posuzování vlivů na ž.p.<br>Central Bohemia Region Office, The Environment Department | 05 May 2010 | Mail |
| 12 | KHS Kladno<br>Regional Hygiene Service | 23 April 2010 | Mail |
| 13 | Obec Žižice<br>Municipality of Žižice | 28 April 2010 | Mail |
| 14 | Český Hasičský záchranný zbor Středočeského kraje<br>Fire Rescue Service of Central Bohemia region | 28 April 2010 | Personal |

Source: Study of documents from GTX Invention s.r.o.

The figure 22 includes list of institutions that were approached during preparation of Building Permit Application. There are names of these institutions in Czech language with short description of the institution in English. Each communication is listed with date of the letter and communication mean. The company used four means of communication with these institutions. They used mail and the Czech Post, data boxes, web application of an institution and personal visit. From the most used means of

communication is visible strong afford of the company to use electronic means of communication instead of traditional means of communication. On the other hand institutions and offices of state administration have different affords. Institutions still prefer traditional means of communication and paper forms of documents than electronic means of communication. List of letter sand beck to the company is in figure 6.

**Figure 23: Communication from institutions; means of communication**

| No. | Name of an Institution in Czech / Description in English | Date | Means of Com. |
|---|---|---|---|
| 1 | Městský úřad Slaný, Odbor životního prostředí<br>Municipality of Slaný, The Environment Department | | |
| 2 | Středočeská Plynárenská a.s.<br>Gas distributor | 27 May 2010 | Mail |
| 3 | Slavos s.r.o.<br>Water distributor | 29 April 2010 | Mail |
| 4 | VUSS<br>Czech army properties | 12 May 2010 | Mail |
| 5 | Obvodní báňský úřad<br>Regional mining authoritiy | 11 May 2011 | Mail |
| 6 | ČEZ Distribuce a.s.<br>Electricity distributor | 29 April 2010 | Mail |
| 7 | Telefónika O2<br>Telecommunication company | 29 April 2010 | Mail |
| 8 | Palivový kombinát s.p.<br>Operator of collieries | 30 April 2010 | Mail |
| 9 | ČEZ Distribuce a.s.<br>Electricity distributor | 26 October 2010 | Mail |
| 10 | Archeologický ústav AV ČR<br>Institute of Archaeology of the Academy of Sciences of the CR | 13 May 2010 | DB |
| 11 | Krajský úřad středočeského kraje, Oddělení posuzování vlivů na ž.p.<br>Central Bohemia Region Office, The Environment Department | 25 May 2010 | DB |
| 12 | KHS Kladno<br>Regional Hygiene Service | 23 May 2010 | DB |
| 13 | Obec Žižice<br>Municipality of Žižice | 11 January 2010 | Mail |
| 14 | Český Hasičský záchranný zbor Středočeského kraje<br>Fire Rescue Service of Central Bohemia region | 18 May 2010 | Mail |
| 15 | Česká Geologická služba – Geofond<br>Geological Service | 04 May 2010 | Mail |
| 16 | Městský úřad ve Slaném, Stavební úřad<br>Municipality of Slaný, The Building Department | 16 February 2010 | Personal |

Source: Study of documents from GTX Invention s.r.o.

The list of communication from institutions in the figure 6 includes names of institutions in Czech language with English description, dates of answers and communication means.

According to study of information in figure 22 and 23 is possible to do quantified comparison between approaches to means of communication between the company and institutions.

**Figure 24: Comparison of use of various means of communication by the company and institutions**

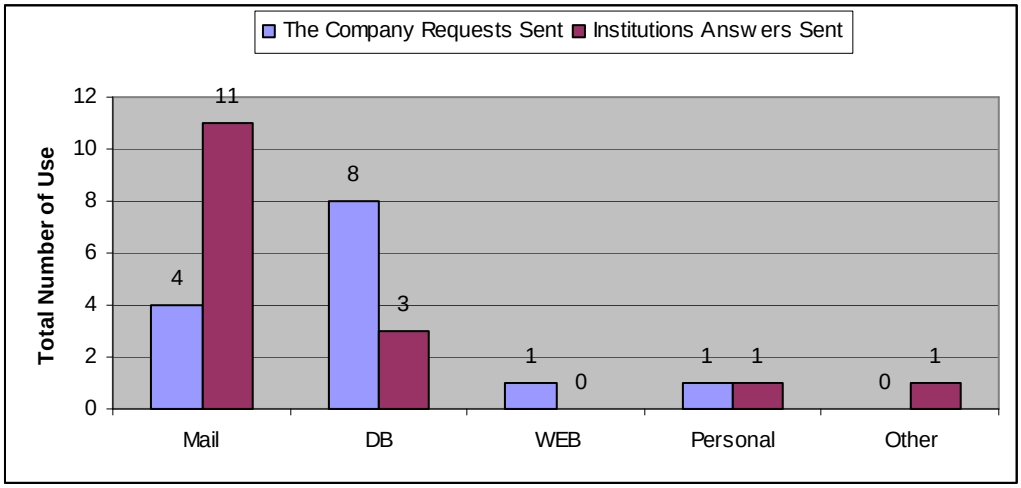
| Means of Communication | | |
|---|---|---|
| | Requests Sent | Answers Received |
| Mail | 4 | 11 |
| DB | 8 | 3 |
| WEB | 1 | 0 |
| Personal | 1 | 1 |
| Other | 0 | 1 |
| Suma | 14 | 16 |

Source: Study of documents from GTX Invention s.r.o., own computation

Figure 24 is created according to experience in communication during the case of production and storage hall with photovoltaic power station. The company approaching institutions with requests for statements was using electronic means of communication as much as possible. Total number of requests sand by electronic means is 9 from 14. It is 63 per cent. On the other hand institutions use often traditional ways of communication to sand answers. Institutions used electronic means only in 3 cases from 16. It is 19 per cent. Traditional means of communication were used in 13 cases from 16 it is 81 per cent.

The company used in 8 cases data box and get only 3 answers via data box. It is only 14 per cent. The difference between number of request sent and answers receive is in internal cooperation is institutions. Two institutions received one request and split it in to two departments.

**Figure 25: Comparison of use of various means of communication by the company and authorities**




Source: Study of documents from GTX Invention s.r.o., own computation

The figure 25 is graphical illustration of proportion between company and institutions approaches to different communication means.

From this research is also resulting, that the company is able both sent and receive documents via Data box but institutions often documents only receive and answer by mail.

### 4.2.5 Example of Realization; Usage of Data Boxes

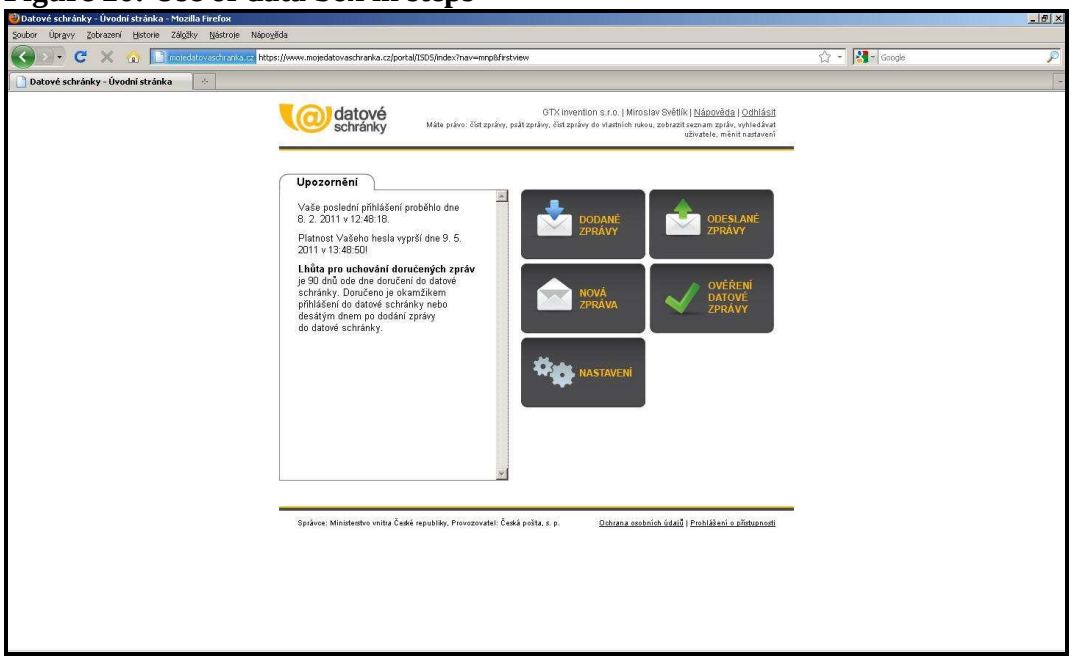
This chapter is about practical experience of the company with usage of data boxes. Information in this chapter are based on the observation of sending request to the building department in case of Building Permit Application for other company which wonted to build production and storage hall with photovoltaic power station. An indispensable in this chapter are four figures, which are print screens done during process of sending request to Building Department of Slaný.

To sand document via data boxes has several steps.

The first of all log in to the application on www.mojedatovaschranka.cz. The login is code received from Ministry of the Interior. Password is expiring fast and all he time it is necessary to create new one. The figure 26 is print screen after successful log in to the data boxes application. The first home page displays two parts. On the left site, there are

attentions connected to the actual state of data box. In the figure 26 it is visible that these attentions are about date of last log in, date of password expiration, and information that messages delivered in to the data box will be delete after 90 days. On the right site of the home page are options of home page navigation; the message delivered, the sent messages, the new message, validation of a message, settings.

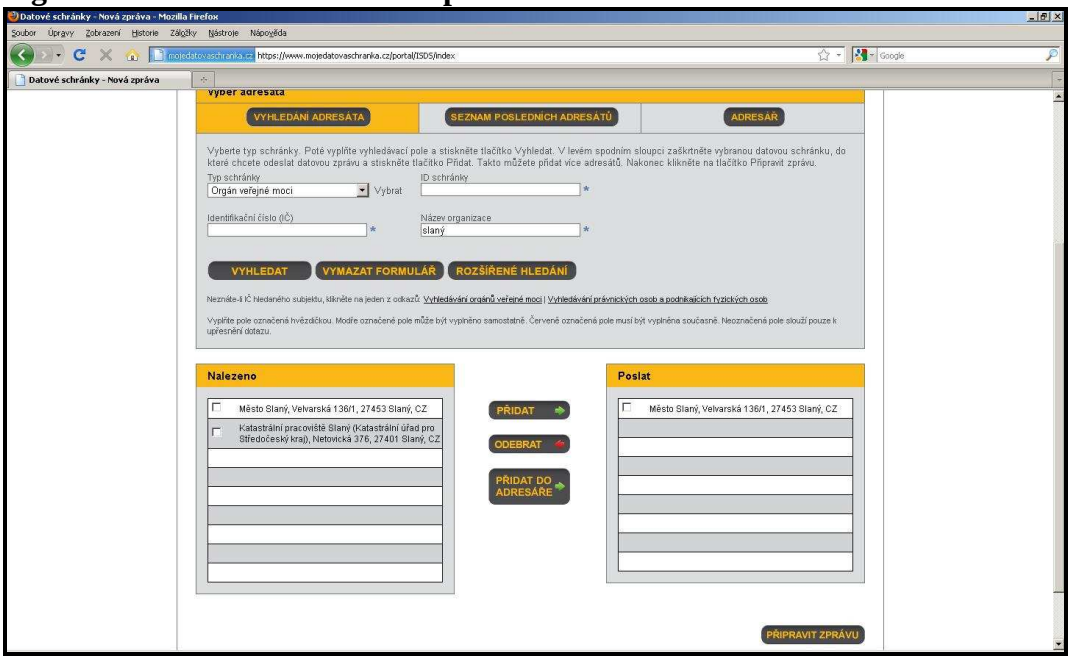
**Figure 26: Use of data box in steps**




Source: the observation, print screen

To send message is necessary to click on New Message bottom. Then there will be visible page called the new message, figure 27. This web site has two parts, upper part is use to select type of subject, in the case of communication with Building Departement is choosing public authorities, then has to be fill in city or other information, for example an company identification number, or data box identification number. After filling this filter the system is searching for suitable data boxes and the result will be display in the lower part of the web site. Then it is necessary to choose concrete data box which the message will be send and continue to another web page called message preparation.

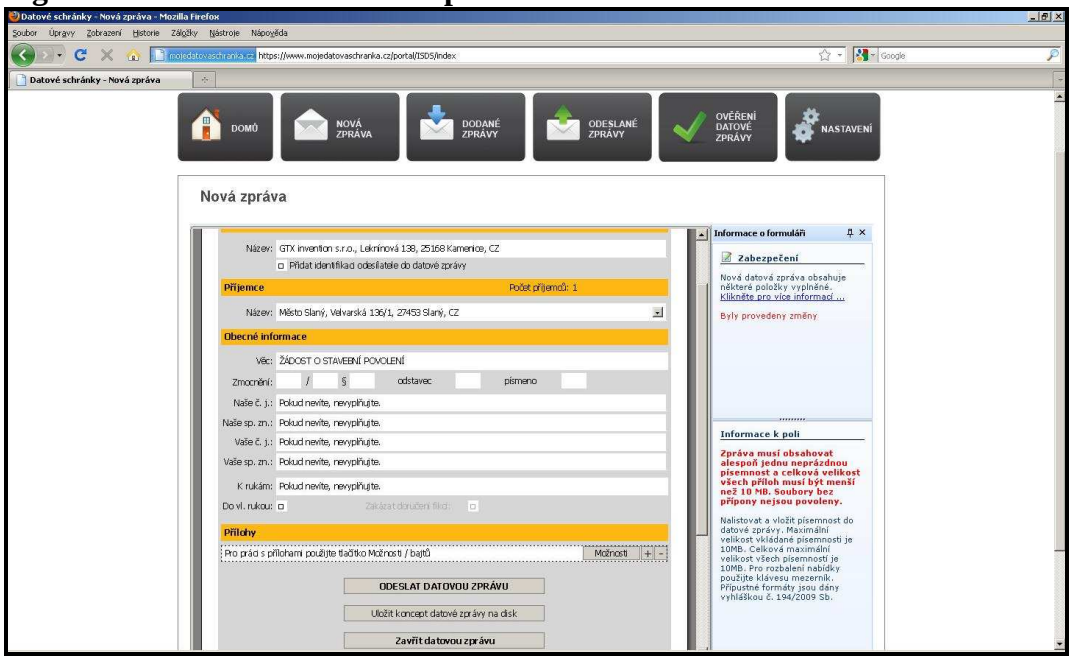
**Figure 27: Use of data box in steps**




Source: the observation, print screen

The web page for message preparation is displayed in figure 28. There is name of sender and of recipient. There is no place where to write text as it is common in an email application. There is only cell to fill in subject of the message. The body of the message is uploading as attachment, usually in PDF. The web page also enables options to fill in more details about case of communication, for example official code number of the document. But this information is optional and in the case there is no official number of the document.

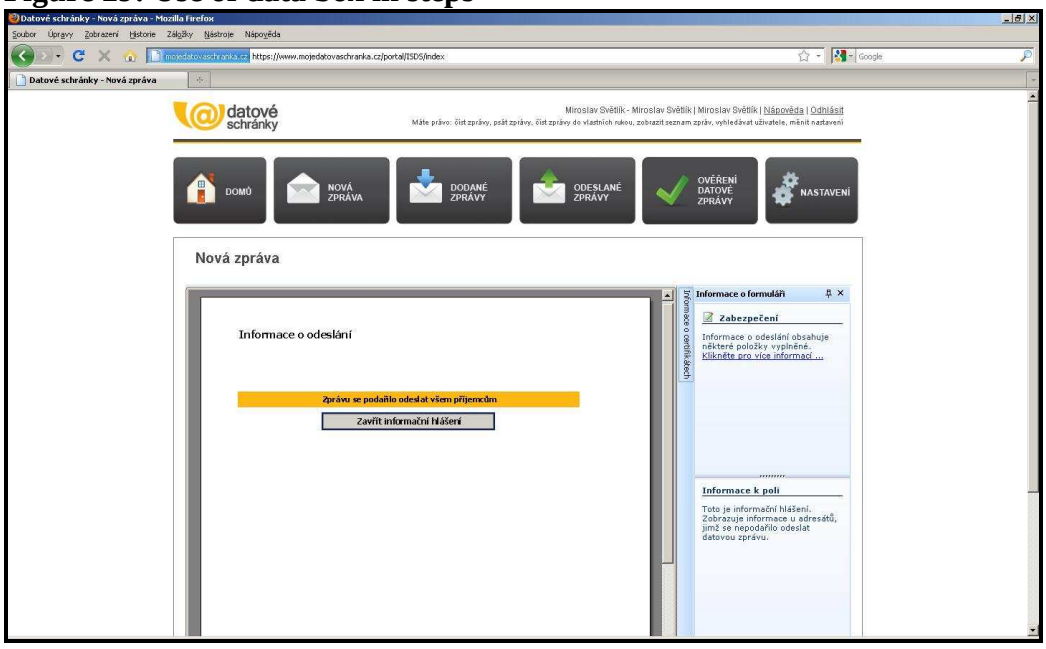
**Figure 28: Use of data box in steps**




Source: the observation, print screen

Then the message is prepared and it is possible to send it. After sending there is displayed last web site as it is in figure 29. The web site inform about success of the message sending.

**Figure 29: Use of data box in steps**




Source: the observation, print screen

This web page also displays navigation from home page, so that it will be possible to continue with activities in this application.
Preparation and sending of the data message is process similar to sending classical email.

### 4.2.6 Use of Data Boxes; Company Point of View

The company started using data box immediately, when it was possible. The first information about existence of data boxes had the owner of the company from bill board on high way D1. The implementation of data boxes immediately influences workflow of the company. Before data boxes usage they went to the post office or personally to institutions. The company estimates use of data box in 95 per cent of all cases. Some cases do not need usage of data box or it is not possible to use it because of character of documents. GTX Invention s.r.o. uses data box to requests for statements of public authorities, and exchange of documents.
Experience with the system of data boxes is positive. Formats of documents allowed to be sent through data boxes are satisfactory. The system from technical point of view is reliable, 100 per cent of messages were delivered, but it happened sometimes that officer printed the document and then lost it. Interesting is findings of the company, that messages delivered to the public authorities are usually printed.
When it is a message from the company delivered to the public authority, there is not immediate answer or reaction. Officers answer according to legal time limits.
They did response to each message sent through data box. To send answers back officers use data box or guaranteed mail. Proportion between number of answers delivered by post and data boxes is 50 per cent to 50 per cent. It is estimated proportion according to experience of all cases done by the company.
It happens sometimes that the whole application is not available online because of some maintenances of the system. It is usually fixed up approximately in one hour. Positive is also the fact that there are no special needs for extra capacity of a computer or an Internet connection demanded for data boxes implementation.
The conversion of documents from the electronic form to the printed form, as it is described in the call, the company has never done. Officers do not know about this possibility of the document conversion. They accept scanned documents delivered through data box. This happened in 100 per cent of all cases. The company benefits from

data boxes especially due to difference between data boxes and Email. If the same document is sent by email, offices would not accept it, the delivery is not guaranteed. Using emails cold causes weak position when it is necessary to find information about the document, discus with officers or complain for their procedures.

The company GTX Invention s.r.o. does not print documents received in to the data box. They forward back those documents to customers. Format of documents exchanging through data box is usually PDF. In one case happened, that officer sent a document without signature on it.

The main advantage is that the delivery is guarantied with immediately information whether the message was delivered or not. Communication with public authorities within Data box is friendlier to environment, less travelling, printing, papers even officers at public authorities usually print delivered documents.

The company also suggests some changes of the system. The home page where is visible only menu should be changed. Immediately after log in should be visible delivered messages.

Searching for data boxes of institutions should be improved. Till the date of 10.3.2011 the application can not work with inflection of Czech language. For example searching for institutions called Magistrát města Kladna is not possible, by keyword Kladno. The key word has to be Kladna.

Owner of the company also wants to be sure, that the notification from the data box about received message will be always delivered into the private email. The notification never should be marked as spam.

Week point is also missing concrete addressing. The Building Department has one data box address. If the communication is run with concrete officer it is not possible to address message directly to him over data box. The message is delivered to the data box first and than someone sorts it out to concrete officers, referents. Last suggestion is about user name. It will be easier to be able to choose user name instead of receiving username created by the Ministry of Interior.  User name is recently code, hard to remember.

#### 4.2.3.1 Web Presentation of the Company

The presentation of the company is based on three domains; stavebni-povoleni.com, papirovani.cz, ohlaseni-stavby.cz. These domains are in Czech language, because of company's focus on the Czech market. Meaning of these domains is close to building permits and building announcements. The presentation on web sites is fostered by search engines optimization. The SEO is administering in house. Since the beginning of the company SEO has displayed company's web sites on the first page of Google and Seznam. Google and Seznam are significantly the most important searching portals. Due to successful SOE the company has done only a few promotion companies based on PPC system. A mechanism of searching of Google and Seznam is changing continually. Therefore there are often completely different approaches of SEO. The company had to change design of their web sites, they also change one part of the test on the web sites and together with changes of searching mechanisms their web sites dropped as it is visible from figure 30.

**Figure 30:** Position at Google and Seznam

| **Position at Google and Seznam Serching** | | | |
|---|---|---|---|
| | Key word for Searching | The Internet Searching Tool | Internet Searching Tool |
| | | google.com | seznam.cz |
| stavebni-povoleni.com | stavební povolení | 1st. page 6th. position | 22nd. page 1st. position |
| | stavební povolení formulář | 10th. page 9.th position | |
| papirovani.cz | ohlášení stavby | 3th. page 9th. position | 1st.page 8th. position |
| | ohlášení stavby formulář | | 2nd. page 1st. position |
| ohlaseni-stavby.cz | ohlášení stavby | 1st. page 5th. position | 3th. page 1st. position |
| | ohlášení stavby formulář | 2nd. page 5th. position | 2nd. page 6th. position |

Source: the seach engines trial

Principles of SEO are not only purpose of text on web sites. These texts are formulated for sales purposes as well. Key points are price lists and introduction of large number of institutions to approach. All domains together have approximately 100 unique accesses per week.

**Figure 31: The key word statistics**

| Number of searching for the word | | | | |
|---|---|---|---|---|
| from 7 Nov. 2011 | Building Permit | | Building Announcement | |
| to 11 Marc. 2011 | Stavební povolení | | Stvební Povolení | |
| | Day | Week | Day | Week |
| Maximum | 171 | 2182 | 0 | 0 |
| Minimum | 580 | 3014 | 246 | 1209 |
| Average | 266 | 2564 | 105 | 732 |

Source: the Seznam

To analyse web presentations of the company is useful to look at statistics of searching portals. The Seznam.cz for example promotes, that 2182 of people searching weekly for key word 'Stavební povolení', building permits. In comparison with accesses to company's web sites, there is much bigger potential, that the company should reached.

### 4.2.7 Economy of the Company

Since the beginning of the company 2008 were realized 30 Building Permits and the Building Announcements. This number of permits includes complete application for 25 family houses, 1 manufacture hall, and for 4 projects. Example of this partial documents collection is, for example permit for entrance to the land. Price of these services are defining individually from CZK 15000 to CZK 50000. Estimated income of the company is CZK 450000.

The fix costs for the Internet, office, and car, are nearly irrelevant, because the company GTX s.r.o. has other business activities. Variable costs are related to the development of a specific case. Variable costs are especially travel costs, petrol, mail and mobile phone.
The company use simplification of cost calculation and define CZK 2000 per average case.
There is simulation of costs according to information about real case; Building Permit Application for another company which wonted to build production and storage hall with photovoltaic power station.

**Figure 32: Simulation of costs without use of data boxes**

| | Real Situation | | | Alternation wit out DB | | |
|---|---|---|---|---|---|---|
| Means of C. | Frequency | Unit Costs (CZK) | Total (CZK) | Frequency | Unit Costs (CZK) | Total (CZK) |
| Mail Guaranteed | 1 | 26 | 26 | 10 | 26 | 260 |
| Mail Pack | 3 | 50 | 150 | 3 | 50 | 150 |
| DB | 8 | 0 | 0 | 0 | | 0 |
| WEB | 1 | 0 | 0 | 0 | | 0 |
| Personal | 2 | 600 | 1200 | 2 | 600 | 1200 |
| Total Costs on C. (CZK) | **1376** | | | **1610** | | |
| Savings due to DB (CZK) | **234** | | | | | |

Source: Author's computations

The figure 32 includes calculation of the real case and than there is comparison to the situation without use of data boxes. The result is that difference between these two situations is CZK 234. This among of money is very small. But according to the opinion of the owner of GTX Invention s.r.o., impact of data boxes in his company is not possible to measure only by money. The greater impact is in time savings. The time saving is estimated about four days. This is very important, the company usually struggles with unexpected statements of authorities. At the same time customers expecting fast top quality of company's services.

**Figure 33: Costs and revenues of the case**

| | Real Situation | | |
|---|---|---|---|
| Costs | Frequency | Unit Costs (CZK) | Total (CZK) |
| Travelling, Meetings | 2 | 600 | 1200 |
| Mobile Phone | / | 1500 | 1500 |
| Working Ours | 30 | 100/h | 3000 |
| Communication | / | / | 1376 |
| Total Costs on C. (CZK) | **7076** | | |
| Revenue (CZK) | **50000** | | |
| EBIT (CZK) | **42924** | | |

Source: Author's computations

This calculation in figure 33 illustrates economy of company's business case. The company usually realises huge profit on each case. This is positive for further development of the company.

# 5 Conclusion

E-commerce and e-business in the Czech Republic is sustainably developing. The number of households and total number of people using the Internet is increasing up to following figures. In 2010 it was 56 per cent of households in the Czech Republic that use the Internet connection, 80 per cent of people, in age category 16 to 44 years old, used the Internet, and 25 per cent of people over 16 years old did shopping over the Internet.

Similar development is also visible on side of companies. Almost all companies in the Czech Republic use the Internet, and 24 per cent from all purchases of these companies was realized via electronic networks. In 2009 19 per cent of all sales were realized via electronic networks. Also the amount of money for which purchases and sales on the Internet are generated is increasing. These facts mean that there are both significant demand and supply on the Internet. Therefore the huge number of companies enters the internets markets every day and at the same time huge among of companies leaves the internet market with out success. Reasons are the similar rules on the internet markets as well as on traditional markets. Companies without strong added value of its products and ability to compete with competitors can not exist for long time.

As well as popularity of using the Internet for shopping, purchasing and sales is increasing. There is increasing willingness of people to communicate electronically with public sector. In 2008 45 per cent of people want to communicate with public administration electronically and 18per cent of people already did it.

Electronic communication and electronic work flow is also a direction where Czech politicians want to follow. Czech government has already introduced tools like electronic signature, Data boxes, time stamp, or conversion of documents. These tools are based on legislation and ICT solutions and their purposes are to enable guaranteed electronic communication between public sector and citizens. Data boxes are the newest application, they were launched in 2009. It is an electronic data repository that is intended to the delivery from public authorities, and delivery to the public authorities. Data boxes introduction is great leap forward. From the point of users, data boxes enlarge possibilities of the Czech Internet; therefore they are relevant to study as well as relations

to e-commerce and e-business. Due to short existence of data boxes and specific question arising, the study was based on case study of selected company GTX Invention s.r.o.

The research has proved that use of data boxes brought cost savings, improved services, and increased capacity and economic performance of the selected company. In fact this means that data boxes brought an opportunity for the development of similar companies operating on the Internet in the Czech Republic.

The conclusion is about proving or disproving thesis: The first theses was proved. Data Boxes brought new opportunities for e–commerce in the Czech Republic. The theses were proved. Data Boxes brought new opportunities for e–commerce and e-business in the Czech Republic.

# 6 Bibliography

[1] BOTHA, J. *Managing e-commerce*. 5th ed. Claremont: Juta and Copany Ltd., 2004.

[2] BUSINESSDICTIONERY.COM. *E-Business* [online]. 2011 [accessed 2011-02-5]. Available at: http://www.businessdictionary.com/definition/electronic-business-E-Business.html.

[3] BUSINESSDICTIONERY.COM. *E-Commerce* [online]. [accessed 2011-02-7]. Available at: http://www.businessdictionary.com/definition/electronic-commerce-E-Commerce.html.

[4] BUSINESS QUOTAS. *Internet Quotes* [online]. [accessed 2011-02-10]. Available at: http://www.woopidoo.com/business_quotes/internet-quotes.htm.

[5] CAMBRIDGE DICTIONARY ONLINE. *E-commerce* [online]. 2011 [accessed 2011-02-5]. Available at: http://dictionary.cambridge.org/dictionary/british/e-commerce.

[6] COLLINS ENGLISH DICTIONARY. New York: HarperCollins Publishers, 2009.

[7] COLORADO STATE UNIVERSITY. *Writing Guide: Case Studies* [online]. 2010 [accessed 2010-03-08]. Available at: http://writing.colostate.edu/guides/research/casestudy/.

[8] ČESKÝ STATISTICKÝ ÚŘAD. *Informační společnost 2010 v číslech, Česká republika a EU* [online]. 2010 [accessed 2011-02-01]. Available at: http://czso.cz/csu/2010edicniplan.nsf/t/F20039D56A/$File/970510.pdf.

[9] ČESKÝ STATISTICKÝ ÚŘAD, ODBOR STATISTIK ROZVOJE SPOLEČNOSTI. *Využívání informačních a komunikačních technologií v domácnostech a mezi jednotlivci v roce 2009* [online]. 2009 [accessed 2011-11-17]. Avelable at: http://www.czso.cz/csu/2009edicniplan.nsf/p/9701-09.

[10] ČESKÝ STATISTICKÝ ÚŘAD, ODBOR STATISTIK ROZVOJE SPOLEČNOSTI. *Využívání informačních a komunikačních technologií v domácnostech a mezi jednotlivci v roce 2010* [online]. 2010 [accessed 2011-02-03]. Available at: http://www.czso.cz/csu/2010edicniplan.nsf/t/45002BC1E6/$File/970210.pdf.

[11] ČESKÝ STATISTICKÝ ÚŘAD, ODBOR STATISTIK ROZVOJE SPOLEČNOSTI. *Informační a komunikační technologie v podnikatelském sektoru za rok 2010* [online]. 2010 [accessed 2011-02-05]. Available at: http://www.czso.cz/csu/2010edicniplan.nsf/t/45002BC1E6/$File/970210.pdf.

[12] ČESKÝ STATISTICKÝ ÚŘAD, ODBOR STATISTIK ROZVOJE SPOLEČNOSTI. *Informační a komunikační technologie ve veřejné správě v roce 2009* [online]. 2010 [accessed 2011-02-01]. Available at: http://www.czso.cz/csu/2010edicniplan.nsf/t/F3004122A7/$File/970310.pdf.

[13]CHAFFEY, D. E-business and e-commerce management: strategy, implementation and practice. Edinburgh: Pearson Education, 2007.

[14] DATOVESCHRANKY.EU. *Statistiky použití datových schránek* [online]. 2009 [accessed 2011-02-27]. Available at: http://www.datoveschranky.eu/informace-o-datovych-schrankach/zaver-teorie/statistiky-pouziti-datovych-schranek.

[15] EUROPEAN COMMISSION. *What is "e-Business"* [online]. 2010 [accessed 2011-02-5]. Available at: http://www.ebusiness-watch.org/about/what_is.htm.

[16] INVESTORWORD.COM. *E-commerce* [online]. 2011 [accessed 2011-02-7]. Available at: http://www.investorwords.com/1637/e_commerce.html.

[17] ISSS. *Konference Internet ve státní správě a samosprávě* [online]. 209 [accessed 2011-02-25]. Available at: http://www.isss.cz/archiv/2009/download/isss2009.pdf.

[18] ISSS. *Konference Internet ve státní správě a samosprávě* [online]. 2010 [accessed 2011-02-25]. Available at: http://www.isss.cz/archiv/2010/download/isss2010.pdf.

[19] LAUDON, K.C. *E-commerce 2010.* 6th ed. Upper Saddle River: Prentice Hall, 2009.

[20] MINISTERSTVO INFORMATIKY ČR. *Bílá kniha o elektronickém obchodu* [online]. 2003 [accessed 2011-02-02]. Available at: whitepaper.ises.org/ISES-WP-72-Czech.pdf.

[21] MINISTRY OF THE INTERIOR OF THE CZECH REPUBLIC. *Data Box - Another Step in Electronification of Public Administration* [online]. 2009 [accessed 2010-11-15]. Available at: http://www.mvcr.cz/mvcren/article/meet-egon-804228.aspx.

[22] OECD. Glossary of statistical terms [online]. 2003 [accessed 2011-02-10]. Available at http://stats.oecd.org/glossary/detail.asp?ID=4721.

[23] OECD. The conference on empowering e-consumers [online]. 2009 [accessed 2011-02-11] http://www.oecd.org/dataoecd/44/13/44047583.pdf.

[24] RISABURO, N. The *Impact of E-commerce on Transport* [online].2001. [cit. 2011-02-5]. Available at: http://www.oecd.org/dataoecd/55/13/2682630.pdf.

[25] SEDLÁČEK, J. *E-komerce internetový a mobilní marketing od A do Z.*1st ed. Prague: Nakladatelství BEN – technická literatura, 2006.

[26] STEM/MARK. *Analýza a průzkum, sledování trendů v oblasti veřejných informačních služeb* [online]. 2009 [accessed 2011-02-28]. Available at: http://www.isss.cz/archiv/2009/download/isss2009.pdf.

[27] THE AMERICAN HERITAGE® DICTIONARY OF THE ENGLISH LANGUAGE. 4th ed. Chicago: Houghton Mifflin Company, 2009.

[28]THE CZECH REPUBLIC. Call.*no. 300/2008 in July 17, 2008* [online]. 2008 [accessed 2011-01-20] Available at: http://www.sagit.cz/pages/sbirkatxt.asp?zdroj=sb08300&cd=76&typ=r.

# 7 Appendices

## A. Example of interview summary transcript

1. When did you start with data boxes and why?
    - Immediately, when it was possible
2. How did you get the first information about data boxes?
    - The first information about existence of data boxes I had from billboard on highway
3. How reliable is the system? Was every message delivered? How do you know it?
    - My experience with the system of data boxes is positive
      100 per cent of messages were delivered
    - Officers did response to each message sent through data box
    - It happened that officer printed the document and then lost it
4. What is technical solution of data boxes? How was it installed?
    - It happens sometimes that the whole application is not available online
    - Reasons are some maintenances of the system
    - It is usually fixed up approximately in one hour.
6. How fast is the application?
    - Satisfying
7. Are there any problems with connection demanding, computer capacity?
    - There are no special needs for extra capacity of a computer or the Internet connection
8. What is your experience with conversion of documents?
    - We had never done the conversion
    - Officers do not know about this possibility
9. What is experience with validity of documents delivered through data box?
    - Officers accept scanned documents delivered through data box
    - This happened in 100 per cent of all cases.
    - We benefit from data boxes due to difference between data boxes and Email.
    - If the same document is sent by email, offices would not accept it.

# B. Example of graphical design of web sites;

# GTX Inventions s.r.o.

# C. Example of letters from GTX Invention s.r.o. to public authorities; Municipality of Žižice

28.4.2010

**Obvodní báňský úřad**
**Kozí 4, Box31**
**11001 Praha**

**Věc: Vyjádření ke stavbě výrobní a skladové haly s fotovoltaickou elektrárnou Žižice, Vítov**

Žádám o vyjádření **ke stavbě výrobní a skladové haly s fotovoltaickou elektrárnou Žižice, Vítov pro účely vydání „územního rozhodnutí o umístění stavby".**
**Pokud jsou podklady dostačující i k vyjádření ke stavebnímu povolení, žádám i o toto vyjádření.**
Záměr se bude realizovat na pozemcích [redacted], obec Žižice.

Pokud by bylo nutné dodat další podklady nutné pro vyjádření, kontaktujte mne prosím přednostně telefonicky nebo emailem.

Ve stavebním řízení zastupuji společnost [redacted]

Vyjádření prosím zašlete do datové schránky 8e4h2nc nebo na adresu:

Miroslav Světlík
Leknínová 138, Ládví
251 68 Kamenice

telefon: 607 211 311
email: info@papirovani.cz

**www.ohlaseni-stavby.cz**

# D. Example of letters from GTX Invention s.r.o. to public authorities;

28.4.2010

**Obec Žižice**
**Žižice 31**
**274 01 Slaný**

**Věc: Vyjádření ke stavbě výrobní a skladové haly s fotovoltaickou elektrárnou Žižice, Vítov**

Žádám o vyjádření **ke stavbě výrobní a skladové haly s fotovoltaickou elektrárnou Žižice, Vítov pro účely stavebního řízení.**
**Přikládám kompletní projektovou dokumentaci**
Záměr se bude realizovat na pozemcích [redacted] v KÚ Vítov, obec Žižice.
Maximální výška haly bude 6m nad okolním terénem..

Ve stavebním řízení zastupuji společnost [redacted]

Vyjádření prosím zašlete do datové schránky 8e4h2nc nebo na adresu:

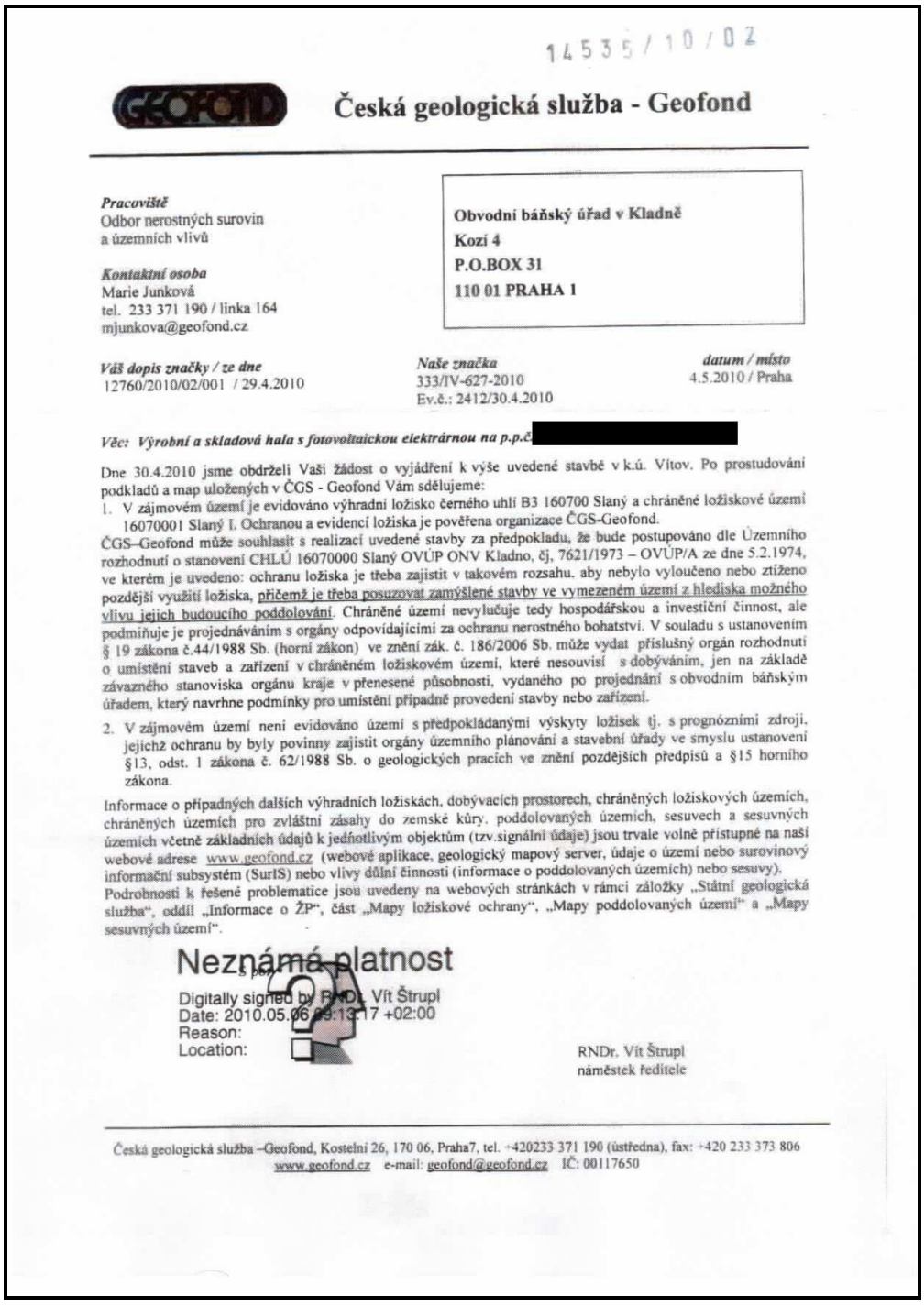
Miroslav Světlík
Leknínová 138, Ládví
251 68 Kamenice

telefon: 607 211 311
email: info@papirovani.cz

www.ohlaseni-stavby.cz
Miroslav Světlík
Leknínová 138, 251 68 Ládví
IČO: 6906/891
email: info@papirovani.cz, tel: 607 211 311

**www.ohlaseni-stavby.cz**

# E. Example of letters from public authorities to GTX Invention s.r.o.; Geological Service



14535/10/02

**Česká geologická služba - Geofond**

*Pracoviště*
Odbor nerostných surovin
a územních vlivů

*Kontaktní osoba*
Marie Junková
tel. 233 371 190 / linka 164
mjunkova@geofond.cz

**Obvodní báňský úřad v Kladně**
**Kozí 4**
**P.O.BOX 31**
**110 01 PRAHA 1**

| *Váš dopis značky / ze dne* | *Naše značka* | *datum / místo* |
|---|---|---|
| 12760/2010/02/001 / 29.4.2010 | 333/IV-627-2010<br>Ev.č.: 2412/30.4.2010 | 4.5.2010 / Praha |

***Věc: Výrobní a skladová hala s fotovoltaickou elektrárnou na p.p.č.*** [redacted]

Dne 30.4.2010 jsme obdrželi Vaši žádost o vyjádření k výše uvedené stavbě v k.ú. Vítov. Po prostudování podkladů a map uložených v ČGS - Geofond Vám sdělujeme:

1. V zájmovém území je evidováno výhradní ložisko černého uhlí B3 160700 Slaný a chráněné ložiskové území 16070001 Slaný I. Ochranou a evidencí ložiska je pověřena organizace ČGS-Geofond.

ČGS–Geofond může souhlasit s realizací uvedené stavby za předpokladu, že bude postupováno dle Územního rozhodnutí o stanovení CHLÚ 16070000 Slaný OVÚP ONV Kladno, čj. 7621/1973 – OVÚP/A ze dne 5.2.1974, ve kterém je uvedeno: ochranu ložiska je třeba zajistit v takovém rozsahu, aby nebylo vyloučeno nebo ztíženo pozdější využití ložiska, přičemž je třeba posuzovat zamýšlené stavby ve vymezeném území z hlediska možného vlivu jejich budoucího poddolování. Chráněné území nevylučuje tedy hospodářskou a investiční činnost, ale podmiňuje je projednáváním s orgány odpovídajícími za ochranu nerostného bohatství. V souladu s ustanovením § 19 zákona č.44/1988 Sb. (horní zákon) ve znění zák. č. 186/2006 Sb. může vydat příslušný orgán rozhodnutí o umístění staveb a zařízení v chráněném ložiskovém území, které nesouvisí s dobýváním, jen na základě závazného stanoviska orgánu kraje v přenesené působnosti, vydaného po projednání s obvodním báňským úřadem, který navrhne podmínky pro umístění případně provedení stavby nebo zařízení.

2. V zájmovém území není evidováno území s předpokládanými výskyty ložisek tj. s prognózními zdroji, jejichž ochranu by byly povinny zajistit orgány územního plánování a stavební úřady ve smyslu ustanovení §13, odst. 1 zákona č. 62/1988 Sb. o geologických pracích ve znění pozdějších předpisů a §15 horního zákona.

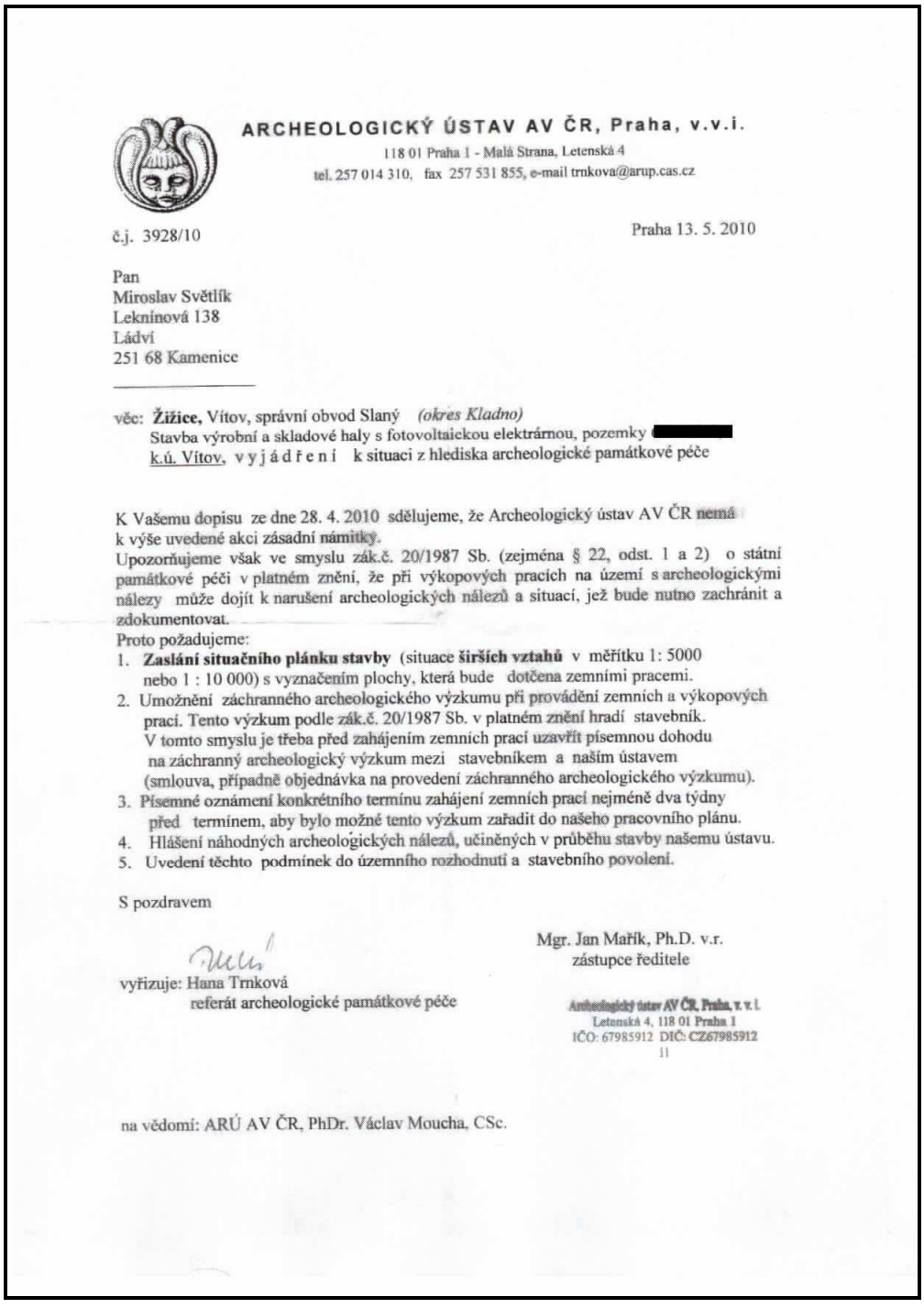
Informace o případných dalších výhradních ložiskách, dobývacích prostorech, chráněných ložiskových územích, chráněných územích pro zvláštní zásahy do zemské kůry, poddolovaných územích, sesuvech a sesuvných územích včetně základních údajů k jednotlivým objektům (tzv.signální údaje) jsou trvale volně přístupné na naší webové adrese www.geofond.cz (webové aplikace, geologický mapový server, údaje o území nebo surovinový informační subsystém (SurIS) nebo vlivy důlní činnosti (informace o poddolovaných územích) nebo sesuvy). Podrobnosti k řešené problematice jsou uvedeny na webových stránkách v rámci záložky „Státní geologická služba", oddíl „Informace o ŽP", část „Mapy ložiskové ochrany", „Mapy poddolovaných území" a „Mapy sesuvných území".

Neznámá platnost
Digitally signed by RNDr. Vít Štrupl
Date: 2010.05.06 09:13:17 +02:00
Reason:
Location:

RNDr. Vít Štrupl
náměstek ředitele

Česká geologická služba –Geofond, Kostelní 26, 170 06, Praha7, tel. +420233 371 190 (ústředna), fax: +420 233 373 806
www.geofond.cz e-mail: geofond@geofond.cz IČ: 00117650

# F. Example of letters from public authorities to GTX Invention s.r.o.; Institute of Archaeology



ARCHEOLOGICKÝ ÚSTAV AV ČR, Praha, v.v.i.
118 01 Praha 1 - Malá Strana, Letenská 4
tel. 257 014 310, fax 257 531 855, e-mail trnkova@arup.cas.cz

č.j. 3928/10

Praha 13. 5. 2010

Pan
Miroslav Světlík
Leknínová 138
Ládví
251 68 Kamenice

věc: **Žižice,** Vítov, správní obvod Slaný *(okres Kladno)*
Stavba výrobní a skladové haly s fotovoltaickou elektrárnou, pozemky [redacted]
k.ú. Vítov, v y j á d ř e n í k situaci z hlediska archeologické památkové péče

K Vašemu dopisu ze dne 28. 4. 2010 sdělujeme, že Archeologický ústav AV ČR nemá k výše uvedené akci zásadní námitky.
Upozorňujeme však ve smyslu zák.č. 20/1987 Sb. (zejména § 22, odst. 1 a 2) o státní památkové péči v platném znění, že při výkopových pracích na území s archeologickými nálezy může dojít k narušení archeologických nálezů a situací, jež bude nutno zachránit a zdokumentovat.
Proto požadujeme:

1. **Zaslání situačního plánku stavby** (situace **širších vztahů** v měřítku 1: 5000 nebo 1 : 10 000) s vyznačením plochy, která bude dotčena zemními pracemi.
2. Umožnění záchranného archeologického výzkumu při provádění zemních a výkopových prací. Tento výzkum podle zák.č. 20/1987 Sb. v platném znění hradí stavebník. V tomto smyslu je třeba před zahájením zemních prací uzavřít písemnou dohodu na záchranný archeologický výzkum mezi stavebníkem a naším ústavem (smlouva, případně objednávka na provedení záchranného archeologického výzkumu).
3. Písemné oznámení konkrétního termínu zahájení zemních prací nejméně dva týdny před termínem, aby bylo možné tento výzkum zařadit do našeho pracovního plánu.
4. Hlášení náhodných archeologických nálezů, učiněných v průběhu stavby našemu ústavu.
5. Uvedení těchto podmínek do územního rozhodnutí a stavebního povolení.

S pozdravem

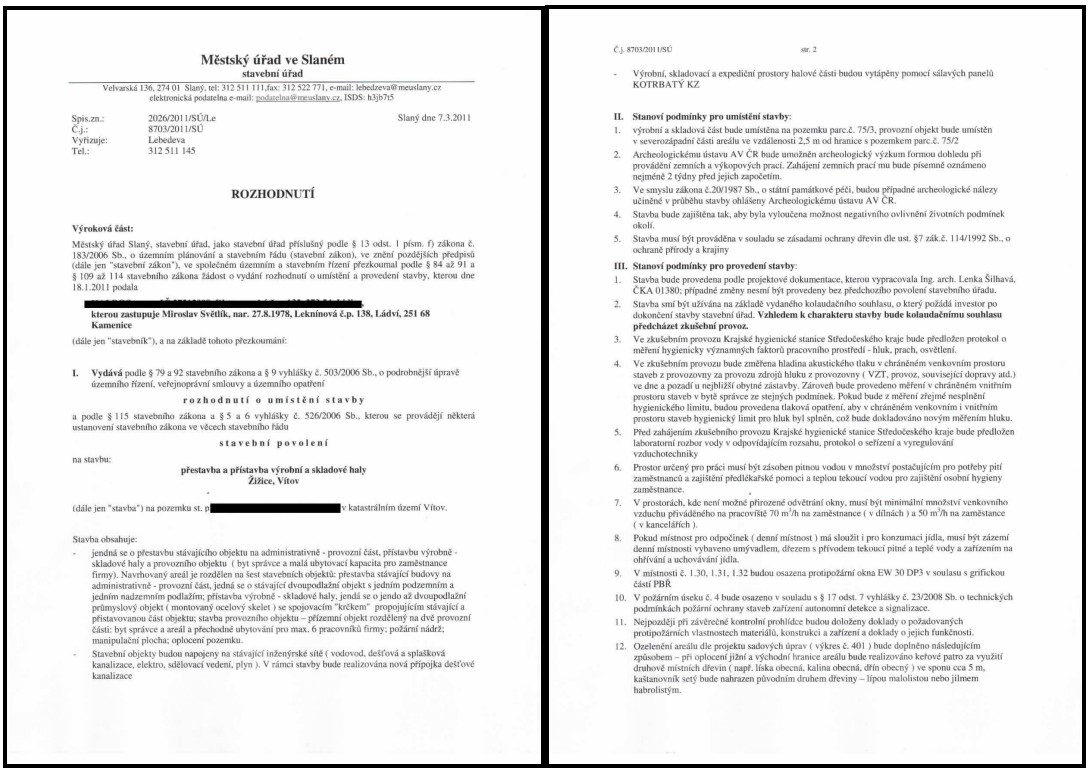
Mgr. Jan Mařík, Ph.D. v.r.
zástupce ředitele

vyřizuje: Hana Trnková
referát archeologické památkové péče

Archeologický ústav AV ČR, Praha, v. v. i.
Letenská 4, 118 01 Praha 1
IČO: 67985912 DIČ: CZ67985912

na vědomí: ARÚ AV ČR, PhDr. Václav Moucha, CSc.

# G. Example of letters from public authorities to GTX Invention s.r.o.; The Building Permit



**Městský úřad ve Slaném**
**stavební úřad**

Velvarská 136, 274 01 Slaný, tel: 312 511 111,fax: 312 522 771, e-mail: lebedzeva@meuslany.cz
elektronická podatelna e-mail: podatelna@meuslany.cz, ISDS: h3jb7t5

Spis.zn.: 2026/2011/SÚ/Le Slaný dne 7.3.2011
Č.j.: 8703/2011/SÚ
Vyřizuje: Lebedeva
Tel.: 312 511 145

**ROZHODNUTÍ**

**Výroková část:**

Městský úřad Slaný, stavební úřad, jako stavební úřad příslušný podle § 13 odst. 1 písm. f) zákona č. 183/2006 Sb., o územním plánování a stavebním řádu (stavební zákon), ve znění pozdějších předpisů (dále jen "stavební zákon"), ve společném územním a stavebním řízení přezkoumal podle § 84 až 91 a § 109 až 114 stavebního zákona žádost o vydání rozhodnutí o umístění a provedení stavby, kterou dne 18.1.2011 podala

[redacted]

**kterou zastupuje Miroslav Světlík, nar. 27.8.1978, Leknínová č.p. 138, Ládví, 251 68 Kamenice**

(dále jen "stavebník"), a na základě tohoto přezkoumání:

**I. Vydává** podle § 79 a 92 stavebního zákona a § 9 vyhlášky č. 503/2006 Sb., o podrobnější úpravě územního řízení, veřejnoprávní smlouvy a územního opatření

**r o z h o d n u t í o u m í s t ě n í s t a v b y**

a podle § 115 stavebního zákona a § 5 a 6 vyhlášky č. 526/2006 Sb., kterou se provádějí některá ustanovení stavebního zákona ve věcech stavebního řádu

**s t a v e b n í p o v o l e n í**

na stavbu:

**přestavba a přístavba výrobní a skladové haly**
**Žižice, Vítov**

(dále jen "stavba") na pozemku st. p. [redacted] v katastrálním území Vítov.

Stavba obsahuje:

- jedná se o přestavbu stávajícího objektu na administrativně - provozní část, přístavbu výrobně - skladové haly a provozního objektu ( byt správce a malá ubytovací kapacita pro zaměstnance firmy). Navrhovaný areál je rozdělen na šest stavebních objektů: přestavba stávající budovy na administrativně - provozní část, jedná se o stávající dvoupodlažní objekt s jedním podzemním a jedním nadzemním podlažím; přístavba výrobně - skladové haly, jedná se o jendo až dvoupodlažní průmyslový objekt ( montovaný ocelový skelet ) se spojovacím "krčkem" propojujícím stávající a přistavovanou část objektu; stavba provozního objektu – přízemní objekt rozdělený na dvě provozní části: byt správce a areál a přechodně ubytování pro max. 6 pracovníků firmy; požární nádrž; manipulační plocha; oplocení pozemku.
- Stavební objekty budou napojeny na stávající inženýrské sítě ( vodovod, dešťová a splašková kanalizace, elektro, sdělovací vedení, plyn ). V rámci stavby bude realizována nová přípojka dešťové kanalizace



Č.j. 8703/2011/SÚ str. 2

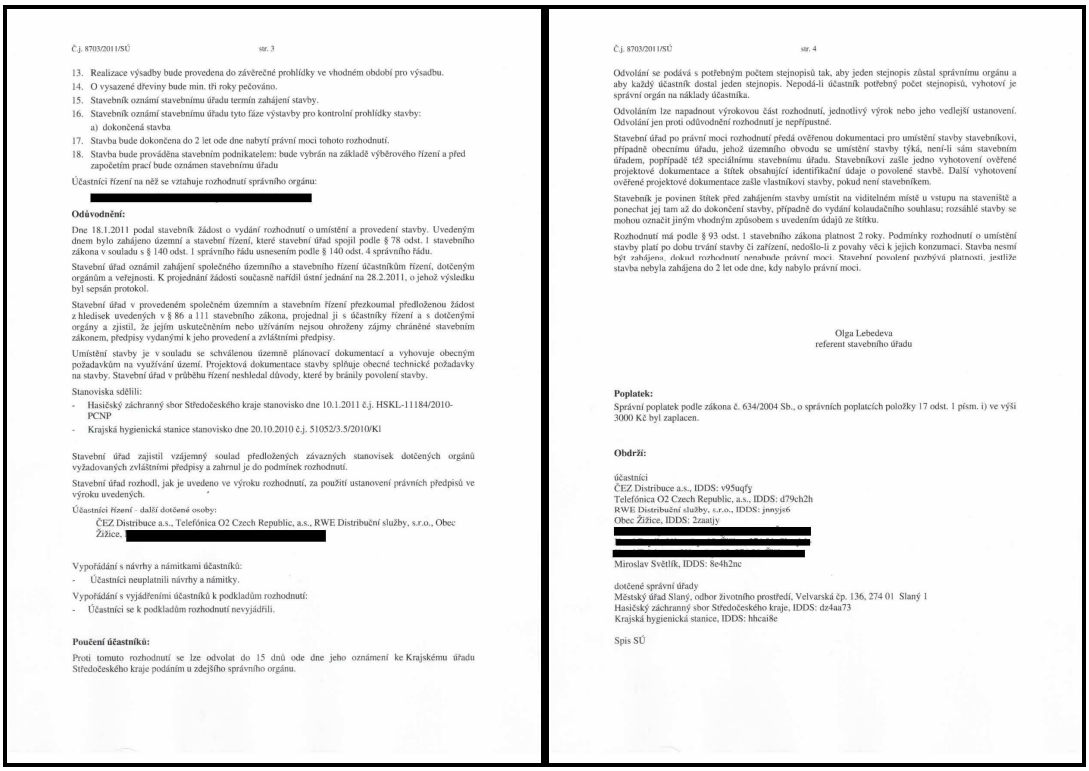
- Výrobní, skladovací a expediční prostory halové části budou vytápěny pomocí sálavých panelů KOTRBATÝ KZ

**II. Stanoví podmínky pro umístění stavby**:

1. výrobní a skladová část bude umístěna na pozemku parc.č. 75/3, provozní objekt bude umístěn v severozápadní části areálu ve vzdálenosti 2,5 m od hranice s pozemkem parc.č. 75/2
2. Archeologickému ústavu AV ČR bude umožněn archeologický výzkum formou dohledu při provádění zemních a výkopových prací. Zahájení zemních prací mu bude písemně oznámeno nejméně 2 týdny před jejich započetím.
3. Ve smyslu zákona č.20/1987 Sb., o státní památkové péči, budou případné archeologické nálezy učiněné v průběhu stavby ohlášeny Archeologickému ústavu AV ČR.
4. Stavba bude zajištěna tak, aby byla vyloučena možnost negativního ovlivnění životních podmínek okolí.
5. Stavba musí být prováděna v souladu se zásadami ochrany dřevin dle ust. §7 zák.č. 114/1992 Sb., o ochraně přírody a krajiny

**III. Stanoví podmínky pro provedení stavby**:

1. Stavba bude provedena podle projektové dokumentace, kterou vypracovala Ing. arch. Lenka Šilhavá, ČKA 01380, případné změny nesmí být provedeny bez předchozího povolení stavebního úřadu.
2. Stavba smí být užívána na základě vydaného kolaudačního souhlasu, o který požádá investor po dokončení stavby stavební úřad. **Vzhledem k charakteru stavby bude kolaudačnímu souhlasu předcházet zkušební provoz.**
3. Ve zkušebním provozu Krajské hygienické stanice Středočeského kraje bude předložen protokol o měření hygienicky významných faktorů pracovního prostředí - hluk, prach, osvětlení.
4. Ve zkušebním provozu bude změřena hladina akustického tlaku v chráněném venkovním prostoru staveb z provozovny za provozu zdrojů hluku z provozovny ( VZT, provoz, související dopravy atd.) ve dne a pozadí u nejbližší obytné zástavby. Zároveň bude provedeno měření v chráněném vnitřním prostoru staveb v bytě správce ze stejných podmínek. Pokud bude z měření zřejmé nesplnění hygienického limitu, budou provedena tlaková opatření, aby v chráněném venkovním i vnitřním prostoru staveb hygienický limit pro hluk byl splněn, což bude dokladováno novým měřením hluku.
5. Před zahájením zkušebního provozu Krajské hygienické stanice Středočeského kraje bude předložen laboratorní rozbor vody v odpovídajícím rozsahu, protokol o seřízení a vyregulování vzduchotechniky
6. Prostor určený pro práci musí být zásoben pitnou vodou v množství postačujícím pro potřeby pití zaměstnanců a zajištění předlékařské pomoci a teplou tekoucí vodou pro zajištění osobní hygieny zaměstnance.
7. V prostorách, kde není možné přirozené odvětrání okny, musí být minimální množství venkovního vzduchu přiváděného na pracoviště 70 $m^3/h$ na zaměstnance ( v dílnách ) a 50 $m^3/h$ na zaměstnance ( v kancelářích ).
8. Pokud místnost pro odpočinek ( denní místnost ) má sloužit i pro konzumaci jídla, musí být zázemí denní místnosti vybaveno umývadlem, dřezem s přívodem tekoucí pitné a teplé vody a zařízením na ohřívání a uchovávání jídla.
9. V místnosti č. 1.30, 1.31, 1.32 budou osazena protipožární okna EW 30 DP3 v soulasu s grifickou částí PBŘ
10. V požárním úseku č. 4 bude osazeno v souladu s § 17 odst. 7 vyhlášky č. 23/2008 Sb. o technických podmínkách požární ochrany staveb zařízení autonomní detekce a signalizace.
11. Nejpozději při závěrečné kontrolní prohlídce budou doloženy doklady o požadovaných protipožárních vlastnostech materiálů, konstrukcí a zařízení a doklady o jejich funkčnosti.
12. Ozelenění areálu dle projektu sadových úprav ( výkres č. 401 ) bude doplněno následujícím způsobem – při oplocení jižní a východní hranice areálu bude realizováno keřové patro za využití druhově místních dřevin ( např. líska obecná, kalina obecná, dřín obecný ) ve sponu cca 5 m, kaštanovník setý bude nahrazen původním druhem dřeviny – lípou malolistou nebo jilmem habrolistým.



Č.j. 8703/2011/SÚ str. 3

13. Realizace výsadby bude provedena do závěrečné prohlídky ve vhodném období pro výsadbu.
14. O vysazené dřeviny bude min. tři roky pečováno.
15. Stavebník oznámí stavebnímu úřadu termín zahájení stavby.
16. Stavebník oznámí stavebnímu úřadu tyto fáze výstavby pro kontrolní prohlídky stavby:
    a) dokončená stavba
17. Stavba bude dokončena do 2 let ode dne nabytí právní moci tohoto rozhodnutí.
18. Stavba bude prováděna stavebním podnikatelem: bude vybrán na základě výběrového řízení a před započetím prací bude oznámen stavebnímu úřadu

Účastníci řízení na něž se vztahuje rozhodnutí správního orgánu:

[redacted]

**Odůvodnění:**

Dne 18.1.2011 podal stavebník žádost o vydání rozhodnutí o umístění a provedení stavby. Uvedeným dnem bylo zahájeno územní a stavební řízení, které stavební úřad spojil podle § 78 odst. 1 stavebního zákona v souladu s § 140 odst. 1 správního řádu usnesením podle § 140 odst. 4 správního řádu.

Stavební úřad oznámil zahájení společného územního a stavebního řízení účastníkům řízení, dotčeným orgánům a veřejnosti. K projednání žádosti současně nařídil ústní jednání na 28.2.2011, o jehož výsledku byl sepsán protokol.

Stavební úřad v provedeném společném územním a stavebním řízení přezkoumal předloženou žádost z hledisek uvedených v § 86 a 111 stavebního zákona, projednal ji s účastníky řízení a s dotčenými orgány a zjistil, že jejím uskutečněním nebo užíváním nejsou ohroženy zájmy chráněné stavebním zákonem, předpisy vydanými k jeho provedení a zvláštními předpisy.

Umístění stavby je v souladu se schválenou územně plánovací dokumentací a vyhovuje obecným požadavkům na využívání území. Projektová dokumentace stavby splňuje obecné technické požadavky na stavby. Stavební úřad v průběhu řízení neshledal důvody, které by bránily povolení stavby.

Stanoviska sdělili:

- Hasičský záchranný sbor Středočeského kraje stanovisko dne 10.1.2011 č.j. HSKL-11184/2010-PCNP
- Krajská hygienická stanice stanovisko dne 20.10.2010 č.j. 51052/3.5/2010/Kl

Stavební úřad zajistil vzájemný soulad předložených závazných stanovisek dotčených orgánů vyžadovaných zvláštními předpisy a zahrnul je do podmínek rozhodnutí.

Stavební úřad rozhodl, jak je uvedeno ve výroku rozhodnutí, za použití ustanovení právních předpisů ve výroku uvedených.

Účastníci řízení - další dotčené osoby:

ČEZ Distribuce a.s., Telefónica O2 Czech Republic, a.s., RWE Distribuční služby, s.r.o., Obec Žižice, [redacted]

Vypořádání s návrhy a námitkami účastníků:

- Účastníci neuplatnili návrhy a námitky.

Vypořádání s vyjádřeními účastníků k podkladům rozhodnutí:

- Účastníci se k podkladům rozhodnutí nevyjádřili.

**Poučení účastníků:**

Proti tomuto rozhodnutí se lze odvolat do 15 dnů ode dne jeho oznámení ke Krajskému úřadu Středočeského kraje podáním u zdejšího správního orgánu.



Č.j. 8703/2011/SÚ str. 4

Odvolání se podává s potřebným počtem stejnopisů tak, aby jeden stejnopis zůstal správnímu orgánu a aby každý účastník dostal jeden stejnopis. Nepodá-li účastník potřebný počet stejnopisů, vyhotoví je správní orgán na náklady účastníka.

Odvoláním lze napadnout výrokovou část rozhodnutí, jednotlivý výrok nebo jeho vedlejší ustanovení. Odvolání jen proti odůvodnění rozhodnutí je nepřípustné.

Stavební úřad po právní moci rozhodnutí předá ověřenou dokumentaci pro umístění stavby stavebníkovi, případně obecnímu úřadu, jehož územního obvodu se umístění stavby týká, není-li sám stavebním úřadem, popřípadě též speciálnímu stavebnímu úřadu. Stavebníkovi zašle jedno vyhotovení ověřené projektové dokumentace a štítek obsahující identifikační údaje o povolené stavbě. Další vyhotovení ověřené projektové dokumentace zašle vlastníkovi stavby, pokud není stavebníkem.

Stavebník je povinen štítek před zahájením stavby umístit na viditelném místě u vstupu na staveniště a ponechat jej tam až do dokončení stavby, případně do vydání kolaudačního souhlasu; rozsáhlé stavby se mohou označit jiným vhodným způsobem s uvedením údajů ze štítku.

Rozhodnutí má podle § 93 odst. 1 stavebního zákona platnost 2 roky. Podmínky rozhodnutí o umístění stavby platí po dobu trvání stavby či zařízení, nedošlo-li z povahy věci k jejich konzumaci. Stavba nesmí být zahájena, dokud rozhodnutí nenabude právní moci. Stavební povolení pozbývá platnosti, jestliže stavba nebyla zahájena do 2 let ode dne, kdy nabylo právní moci.

Olga Lebedeva
referent stavebního úřadu

**Poplatek:**

Správní poplatek podle zákona č. 634/2004 Sb., o správních poplatcích položky 17 odst. 1 písm. i) ve výši 3000 Kč byl zaplacen.

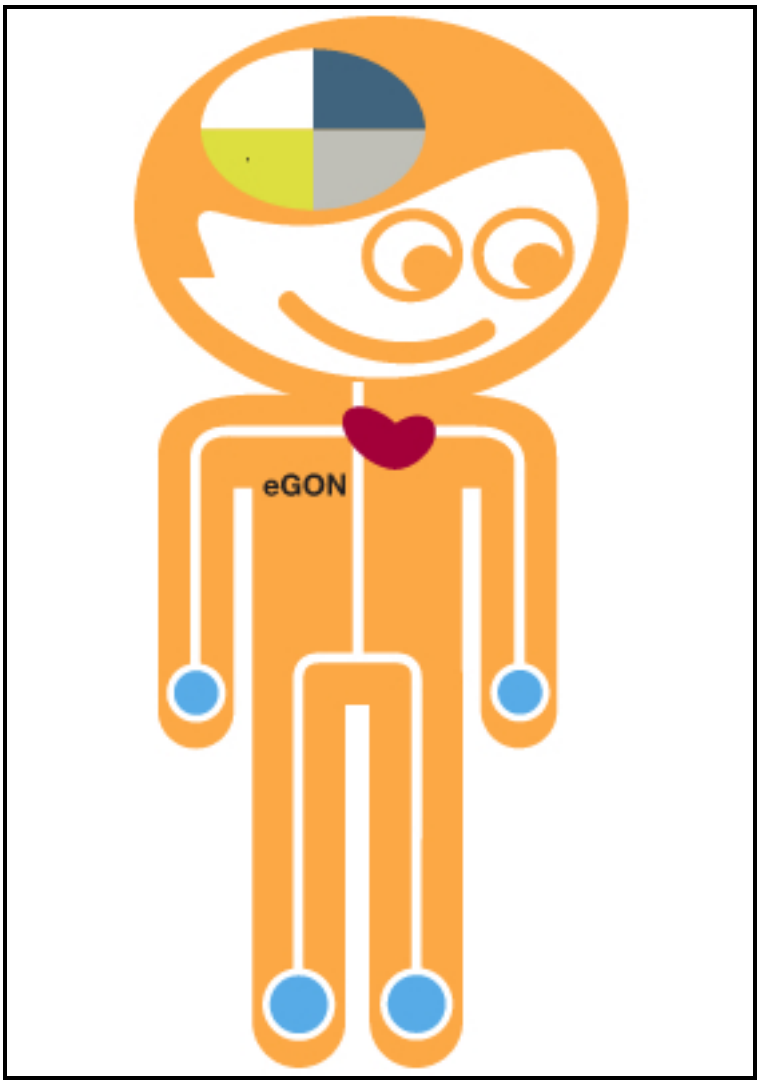
**Obdrží:**

účastníci
ČEZ Distribuce a.s., IDDS: v95uqfy
Telefónica O2 Czech Republic, a.s., IDDS: d79ch2h
RWE Distribuční služby, s.r.o., IDDS: jnnyjs6
Obec Žižice, IDDS: 2zaajty
[redacted]
Miroslav Světlík, IDDS: 8e4h2nc

dotčené správní úřady
Městský úřad Slaný, odbor životního prostředí, Velvarská čp. 136, 274 01 Slaný 1
Hasičský záchranný sbor Středočeského kraje, IDDS: dz4aa73
Krajská hygienická stanice, IDDS: hhcaiše

Spis SÚ

# H. Visualisation of e-government of the Czech Republic




Source: The Ministry of the Interior of the Czech Republic (http://www.mvcr.cz/clanek/egon-93.aspx)