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## **The IT skills in selected small non-profit and administration organisations of Częstochowa region**

### **Summary**

The article presents some results of the questionnaire research of several small non-profit and administration organisations in Częstochowa region that analysed the level of information technologies skills reached by their employees. The research methodology was based on the specification of 17 skills divided in four groups. Those skills are believed to be representative ones to express sufficiently the scope of what is needed for employees practical work activities. The research extent was constrained by possibilities of student work (no financial support, purely the individual tutorial work of one group).

**Keywords:** information technologies, public administration, public servants, questionnaires, IT skills, grading scale.

### **Introduction**

Information technologies (ITs) are the immanent part of human lives today. We could hardly imagine our day-to-day existence without computers and internet. Impact of information technologies is important on organisational structure and organisational culture. Information technology offers options for the design of organisational structure, the interaction by means of new modalities, joint functions and objectives, facilitating the set-up of working groups with a determined term, as well as communication on large areas. The use of effective IT could provide an attractive work environment, and could motivate the employees by means of job enrichment. At the same time, information technologies could support the basic values of organisational culture, such as service responsiveness and quality. On the other side, the spectrum of various disposable applications is so broad that it is not practically possible their absorption on sufficient level of general public.

Specific area of research analysing the information technologies impact is public administration. Here, for example, *Kumar*<sup>1</sup> sees the following impacts:

- increase in efficiency of public administration
- increase in effectiveness
- increase in completeness and soundness
- transparent administration
- economic feasibility in public administration
- e-government, cyber and virtual administration.

Information technology applications enable (Lucica<sup>2</sup>) the dissemination of a large range of information from the public administration institutions, such as: pre-edited documents, information for social assistance, job search, facilities of payment by credit cards, updating the driving license, tax and charges payment. The use of information technologies supports the delivery of integrated service, based more on the concept of citizen/user, and less on the administrative service. Consequently, the service delivery is improved, the current expenses of public administration are cut, and efficiency, control and effectiveness are improved. For the citizens, the costs are reduced. Nowadays, interactive systems are developed, facilitating the civil servants to provide useful information and services to citizens. We could meet situations that combine information from the public sector with that from the private sector.

There are a number of practical examples of data bases that stock information about users and provide opportunities in order to adapt the service to users' needs within the framework of defined limits. The on-line access to data bases, the intensive utilization of already stored information and the better integration or systems connection reduce the time for completing the documents and enable faster and effective responses. Big data is one of very new technologies that enables processing of huge historic data and produce relevant analyses for users.

The reason to study public administration and IT is the increased demands placed on public sector workers for results. To meet these demands, government needs to use IT to translate goals into outcomes. Therefore, public managers must be cognizant of the impact of IT on their organisation.

It is widely discussable which skills of information technologies should be relevant to administrative workers nowadays. For example, the *Coverletters-andresume.com*<sup>3</sup> that provides free cover letters and resume samples to the job seekers around the world states a list of skills that are required in order to perform the administrative duties efficiently. These statements can be utilized in the resume effectively. The candidate should have:

- proven written and verbal communication skills in English and Spanish,

<sup>1</sup> A. Kumar, *Way to Public Administration*, <http://administrationpublic.weebly.com>.

<sup>2</sup> M. Lucica, *Impact of New Technologies on Public Organisations*, [www.nispa.org/files/conferences/papers](http://www.nispa.org/files/conferences/papers).

<sup>3</sup> *Administrative skills list for resume*, [www.coverlettersandresume.com](http://www.coverlettersandresume.com).

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- proficient in writing and handling business correspondence,
  - proven ability to organize personal work priorities,
  - competent at filing and updating records,
  - adept at making travel and accommodation arrangements,
  - working knowledge of bookkeeping tasks,
  - solid knowhow of general office procedures,
  - demonstrated ability to work independently and as part of a team,
  - able to type at least 50 words per minute,
  - excellent organizational skills,
  - expert in handling office equipment including copiers and fax machines,
  - internet savvy with a *proven* expertise in using MS Office applications,
  - excellent customer service orientation,
  - special talent for researching and analyzing data effectively,
  - exceptional attention to detail with proven interpersonal skills,
  - strong ability to use standard business software and applications,
  - demonstrated ability to remain self-motivated at all times,
  - able to manage stress timely and effectively,
  - flexible in working hours.

This set is, of course, relatively general, not focused purely on IT skills. However, some aggregate IT skills needs are visibly present here: text typing, MS Office expertise, internet utilization, data analysis, business software use. For our purpose, these aggregates are too complex; we need to refine them to formulate a framework for the following research. Good orientation could be gained from various university degrees structures valid for courses linking administration to information technologies. For example, mandatory units included in Administration and IT master degree course in UHI<sup>4</sup> are as follows:

- IT in business – word processing and presentation applications,
- IT in business – spreadsheets,
- IT in business – databases,
- office administration,
- office technologies,
- information and communication technologies in business.

Similar set of subjects linked to the area we are interested in are offered by other higher education providers. Furthermore, Jaarsveldt<sup>5</sup> presented research where IT skills for public servants were put together from earlier OECD, Techlearning, EvaluTech and Northrop's researches. He formulated the resulting set of skills as:

- word/information processing – working on documents, sourcing, storing, retrieval, dissemination and archiving of information,

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<sup>4</sup> *Administration and Information Technology HND*. University of Highlands and Islands. [www.uhi.ac.uk](http://www.uhi.ac.uk).

<sup>5</sup> L. Jaarsveldt, *Information Technology Skills for the South African Public Service*, "Administratio Publica", Vol. 18, No. 4, University of South Africa, 2010.

- spreadsheets/problem solving skills – accounting and budgeting in administration departments, working out formulas, decision support and managing of complex problems, critical thinking,
- graphics/presentation skills – using presentation software to communicate effectively, using pictures to make presentation clearer and more powerful,
- data/information management – keeping track of everything that public servant is working on, from spreadsheets to mailing lists, coordinating and collaborating within and outside department to provide public services and information,
- e-mail/communication tools – communicating faster within and outside the department,
- internet – communicating with citizens and providing services to the public, e-government, accessing, managing, integrating, evaluating information,
- geographical information systems – planning and doing public works, assisting with mapping areas,
- information society skills – understanding new technologies and how technology can relate to service delivery in government,
- acquisition skills – the ability to find, define, use and maintain information technology products and services,
- interpersonal and self-directional skills – the ability to use personal developmental and productivity tools, for example e-learning, time management and collaboration tools, to enhance productivity and personal development.

This set of skills, of course, could be extended by some up-to-date skills being brought by very new information technologies like internet telephony, chats, social networks etc.

More complexed structure has been formulated by Szymanek<sup>6</sup> where the required skills were grouped into four categories: basic computer and internet skills and complementary ones. For the purpose of our research we selected that approach with some modifications. The reason was that the structure was forming logical and complex framework on one side and offered clear formulations applicable directly in questionnaire research on the other side. Each group was composed of 2 to 6 concrete skills that will be specified in detail in chapter 3.

## 1. Our research

Our research done by post-graduate students of AJD was focused on small organisations in Częstochowa region where we analysed some 30 entities trying to explore the level of IT skills from the side of their employees.

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<sup>6</sup> *Spółeczeństwo informacyjne w liczbach 2013*, red. V. Szymanek, Ministerstwo Administracji i Cyfryzacji, Warszawa 2013.

This article reports on part of results we reached within the small non-profit, mostly the administration institutions: state administration organisation, city hall office, city police headquarters, city fire brigades headquarters, centre of children help foundation, *gmina*'s (i.e. smallest territorial administration unit in Poland – also commune) centres of social help.

We realise that the presented pattern of organisations is relatively narrow; however it is caused by limited possibilities of students' access to corresponding institutions although the results we reached are not mutually very varying and could offer certain picture of the real regional situation.

The research has been carried out in 2014 through post-graduate part-time students of the Administration study branch.

## 2. Methodology

As it was mentioned above, the methodological base of the research has been derived from Szymanek<sup>7</sup>. We adopted in accordance with that four groups of skills defined there: basic skills of computer handling, basic skills of internet handling, complementary skills of computer handling and complementary skills of internet handling.

These four groups were specified through the following partial skills:

### A. Basic skills of computer handling:

- 1) Skills of copying and transfer of files/folders
- 2) Utilization of such tools as copying, inserting and pasting
- 3) Utilization of basic mathematical functions in spreadsheets
- 4) File compression
- 5) Installation and inter-connection of new devices

### B. Basic skills of internet handling:

- 6) Utilization of internet search engine
- 7) Sending e-mails with appendices
- 8) Participation on chats and discussion forums
- 9) Utilisation of programs for file exchanges P2P
- 10) Internet telephony
- 11) Creation of internet pages

### C. Complementary skills of computer handling:

- 12) Transfer of files between computer and other devices
- 13) Modification of software parameters configuration
- 14) Production of presentations
- 15) Installation of a new operating system or of a new version of it

### D. Complementary skills of internet handling:

- 16) Security change in internet browser
- 17) Internet placement of texts, games, films, music.

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<sup>7</sup> Ibidem.

The set of those 17 skills is believed to represent the present aggregate technological support of users necessary for their professional work. It is undoubtedly time-dependent although probably stable in horizon of some years.

The skills have been formulated as the questions in paper form questionnaires that were submitted to respondents who were asked to tick the grade corresponding to most relevant value. The scale of grades was 1 to 5 where 1 represented the weakest value and 5 the strongest one. Students addressed directly the respondents each from particular organisation. Due to the fact that small institutions were addressed, the respondents represented 100% of professional employees there.

### 3. Results

As far as a number of respondents of our research per organisation are concerned, it varied from 9 to 25 persons. Their age spectrum was relatively wide – from 15 to 65, most of them between 25 and 45.

Generally stated, the level of basic skills both of computer and internet handling was clearly higher than of the complementary ones. Basic skills values (fig. 1) are varying between 2.4 and 4.34 while the complementary ones are represented by values (fig. 2) between 2.38 and 3.72.

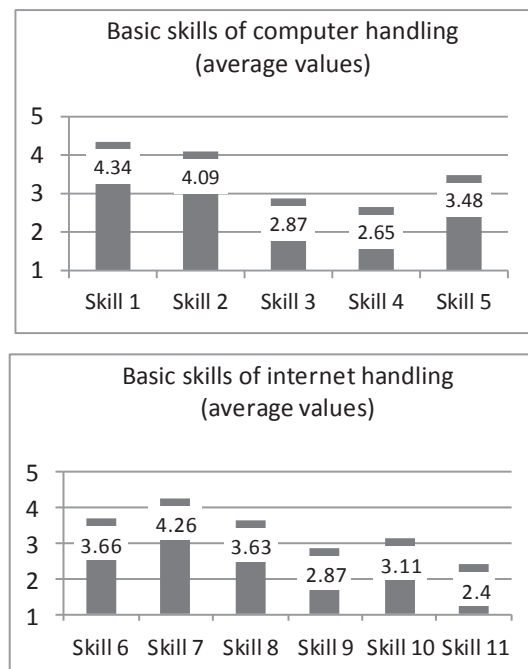
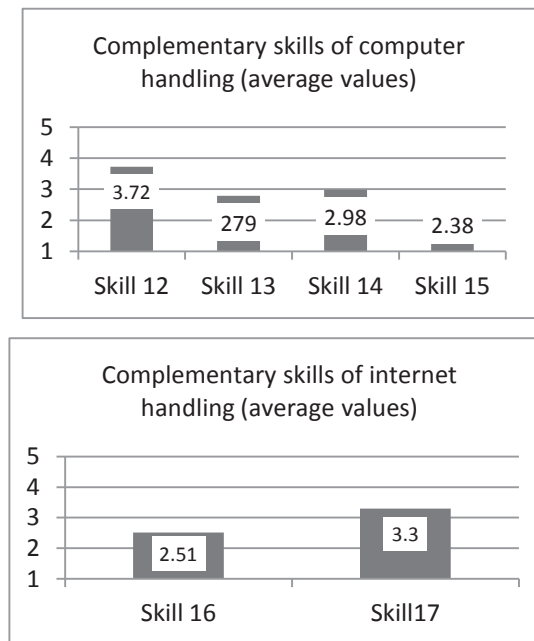


Fig. 1. Basic skills of respondents

The lowest values within the basic skills were reached in creation of internet pages, utilisation of programs for file exchanges P2P, utilization of basic mathematical functions in spreadsheets and in file compression (values from 2.4 to 2.87). Other basic skills are on quite good level (higher than 3 or 4).



**Fig. 2.** Complementary skills of respondents

Within the group of complementary skills the results were, as it was mentioned earlier, worse, the exception is the skill of internet placement of texts, games, films, music (i.e. 3.3).

As far as the handling of particular skills is taken into account, skills of copying and transfer of files/folders and skills of copying, inserting and pasting were on a good level, higher than 4. It is a bit surprising that using of basic mathematical functions in spreadsheets and file compressions were handled at the level of lower than 3. Capability of installation and inter-connection of new devices over crossed the value 3, what is an average result.

Utilization of internet on a basic level brought similar results: e-mail communication in terms of handling offered a very good result between 4 and 5, capability of utilization of search engine (mostly Google) and participation on chats and discussion forums were indicated by respondents on adequate level between grades 3 and 4. Also the internet telephony handling brought the result slightly over crossing the value 3. The remaining two basic internet skills – creation of internet pages (web sites) and utilisation of programs for file exchanges offered poorer results: 2.4 and 2.87.

Complementary skills, as it was stated earlier, were indicated on poorer level (less than 3), only the skill of transfer of files between computer and other devices and putting text, pictures, films and music on internet brought results higher than 3.

At the end a question could arise on the level of mutual differences in terms of the research results among the organisations involved into the pool. Calculation of quadrat and standard deviations brought results in tab. 1.

**Tab. 1.** Average values and deviations

| No. | Skill description                                                | Average value | Quadrat deviation | Standard deviation |
|-----|------------------------------------------------------------------|---------------|-------------------|--------------------|
| 1   | Skills of copying and transfer of files/folders                  | 4.34          | 0.650             | 0.304              |
| 2   | Utilization of such tools as copying, inserting and pasting      | 4.09          | 1.032             | 0.415              |
| 3   | Utilization of basic mathematical functions in spread-sheets     | 2.87          | 2.852             | 0.638              |
| 4   | File compression                                                 | 2.65          | 1.077             | 0.464              |
| 5   | Installation and inter-connection of new devices                 | 3.48          | 2.294             | 0.618              |
| 6   | Utilization of internet search engine                            | 3.66          | 6.680             | 0.977              |
| 7   | Sending e-mails with appendices                                  | 4.26          | 0.764             | 0.330              |
| 8   | Participation on chats and discussion forums                     | 3.63          | 1.345             | 0.580              |
| 9   | Utilisation of programs for file exchanges P2P                   | 2.87          | 2.281             | 0.872              |
| 10  | Internet telephony                                               | 3.11          | 0.479             | 0.346              |
| 11  | Creation of internet pages                                       | 2.40          | 4.305             | 0.847              |
| 12  | Transfer of files between computer and other devices             | 3.72          | 5.593             | 1.058              |
| 13  | Modification of software parameters configuration                | 2.79          | 1.467             | 0.699              |
| 14  | Production of presentations                                      | 2.98          | 1.503             | 0.548              |
| 15  | Installation of a new operating system or of a new version of it | 2.38          | 0.165             | 0.234              |
| 16  | Security change in internet browser                              | 2.51          | 0.359             | 0.346              |
| 17  | Internet placement of texts, games, films, music                 | 3.30          | 0.437             | 0.330              |

Extremal deviations have been found in skills 6, 11 and 12, significant differences in terms of deviations were in skills 3, 5, 8, 9, 13 and 14. The remaining half of skills presented relatively balanced results varying around the average.

## Conclusions

The reason to analyse an interaction between public administration and IT is the increased demand placed on public servants for results. A key question is - what is the current level of IT skills of public servants in rather small organisa-

tions in particular (i.e. Częstochowa) region. The questionnaire research analysed above embraced more than 120 respondents from several institutions belonging to administration and non-profit sector. IT skills of respondents were identified through the pre-defined set of 17 skills grouped into four groups of basic computer and internet handling, complementary computer and internet handling.

The results in grading scale 1 to 5 shows that the basic skills with four exceptions: utilisation of basic mathematical functions in spreadsheets, file compression, utilisation of programs for file exchanges and creation of internet pages are on a good level for professional work of employees. Complementary skills with one exception – transfer of files between computer and other devices – offered poorer results.

In terms of mutual differences of results among institutions, those were not statistically important. Deviations of values in particular skills forming the methodological framework of the research were extremal or significant within roughly the half of classified IT skills. The rest of values were moving around the average for particular skills.

The research was conducted in modest conditions and so it does not offer generally representative results however, it shows rather some picture of the real situation and, possibly, inspires for some broader future research. Finally, the obtained results could motivate small administration and non-profit organisations for further education of their employees.

## Bibliography

- Administration and Information Technology HND*, University of Highlands and Islands, [www.uhi.ac.uk](http://www.uhi.ac.uk).
- Administrative skills list for resume*, [www.coverlettersandresume.com](http://www.coverlettersandresume.com).
- Jaarsveldt L., *Information Technology Skills for the South African Public Service*, “Administratio Publica”, Vol. 18, No. 4, University of South Africa, 2010.
- Kaluza J., *Analiza i projektowanie systemów informacyjnych*, AJD Częstochowa, materiały szkoleniowe, Częstochowa 2015.
- Kumar A., *Way to Public Administration*, <http://administrationpublic.weebly.com>.
- Lucica M., *Impact of New Technologies on Public Organisations*, [www.nispa.org/files/conferences/papers](http://www.nispa.org/files/conferences/papers).
- Szymanek V. (ed.), *Spółeczeństwo informacyjne v liczbach 2013*, Ministerstwo Administracji i Cyfryzacji, Warszawa 2013.

## **IT umiejętności w wybranych małych organizacjach *non profit* i administracji regionu częstochowskiego**

### **Streszczenie**

W artykule przedstawiono niektóre wyniki badań ankietowych przeprowadzonych w małych organizacjach typu *non profit* oraz jednostkach administracji w regionie częstochowskim, prezentujące poziom umiejętności w posługiwaniu się technologiami informacyjnymi osiągnięty przez ich pracowników. Metodologia badania była zgodna ze specyfikacją 17 umiejętności podzielonych na cztery grupy. Umiejętności te są uważane za reprezentatywne i obejmują podstawowy zakres działań i znajomości technologii informatycznych związanych z pracą pracownika. Zakres badania był ograniczony przez możliwości pracy grupy studenckiej (bez wsparcia finansowego, praca seminaryjna jednej grupy).

**Słowa kluczowe:** technologie informacyjne, kwestionariusze, administracja publiczna, urzędnik państwowy, IT umiejętności, skala oceny.