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# ICT Book Aspect Case Study

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## Abstract

LD 6 is our “Generalized Colleague”, a Leading Designer specialized in computer and communication system hardware, and pioneering/emerging/novel ICT application projects, in particular those intended for computer control systems, especially for the electric power industry. He assumed that the pioneers of the computing industry, of the best results in computer hardware, software and application projects should have the best results in defining and investigating the technological as well as off-technology (not technological aspects) of the computer development around the world. The Ld 6 is the nickname of the Leading Designer who devised an ICT book (Book 1) to disclose the impacts of the technological and off-technology aspects upon the ICT development in the countries similar to Hungary and Poland that were the most successful East Europe (Comecon) Countries developing ICT by their own and meeting the requirements of the general human culture, i.e. the ICT honest design and development. The history of writing the Book and publishing it is the subject matter of our paper (This paper). The publishing process of our Book was, generally and unfortunately, similar to rather popular of the ICT rather technology transfer process when the citizens of the technology beneficiary countries are treated similarly to the Ld 6, the basic complex hero of this paper.

**Keywords:** computer, computer network, hardware, software, pioneer, ICT, pioneering application, emerging application, novel application, technological aspects, off-technology (non-technological) aspects

## 1. Introduction

The problems of the technological and off-technology ICT development aspects being the a important basis of E-service domain, were discussed in the scientific mode and, soon after, this branch of technology and science was developed in a considerable degree. Examples of articles of this domains, resulting in high reference index may be as follows [1–3].

A survey of these and other journals that could be called using the keywords: ICT, ethics, human behavior showed that they were written, first of all, by theoreticians and not practitioners, being interested, primarily, in general and not detailed problems.. On the other side, LD 6 was interested in teaching good ICT design and development practices devised and/or learned during adequately long project periods in order that they were validated well by the Authors. In addition, LD 6 believed that the best good and ethical ICT development E-service practices could be described by the most experienced leading designers of the biggest knowledge of

ICT development covering the additional aspect of professional ethics and human behavior [4–22].

Therefore, Book 1 was devised to analyze the very successful Elwro (the former biggest Polish manufacturer of computers, complete with their E-service activities) involvement period in preparation to manufacture (1959–1961) and in production and implementation of computers (1961–1993). The history of development of Book 1, including its E-service aspect, is described in the Section 2 hereinafter.

## **2. Book 1 E-service development history (main body): a description of some Ld 6's grammar school education and upgrading period**

This article discusses some conflicts theoretically implied from some pathological relations between his nation and the Semite nation, or from, de facto, between the Ld 6 and his, in practice, unplanned boss in this Book 1, who was invited for developing the description of the ICT theoretical aspects of ICT E-service development: the professional ethics and the Human Behavior (HB). To understand the views and believes of the Ld 6, we have to return to his secondary school (i.e. his Grammar School No. 1 (in Legnica, Lower Silesia) period.

He was alone, no his girl-schoolmates were apt to become his girl-friends due to his views and convictions. He was the best student in his Class and used to help his Colleagues by whispering answer to the questions asked by the School Teachers. The Teachers granted bad notes for him but he did not resign of whispering. All girls of his Nation called him a kind of a stupid bastard and ignored him. A positive change happened in the 4-th class when a Jewess of the Rose name joined his class: she, like her nation, simply loved the comradeship, especially that free of any financial or interest limitations. The comradeship of LD 6 was his basic characteristic encouraging him to be involved in E-service activities needing interest in helping other people.

In his 2-nd class, he was officially recognized the best Mathematician of his School, since he learned, himself, the integral calculus from an academic book on the Mathematical Analysis. But his Classmates made light of it and laughed of him: he may be used for solving mathematical problems, only. When a new class mate, Rose, joined them, she confessed that she, as well as her Nation, had a big respect to a real knowledge. Of course, the LD 6 advantage in mathematics proved to be a very important scientific basis enabling him a successful involvement in the E-service domain.

He was very poor then and some of his girl Classmates sneer of him and his old-fashioned clothes, especially two of them, trying to force him off his primus position. He was ashamed of his poverty and felt uneasy, and began to joke on the girls who wanted to change him on his primus position. They stopped to interfere him soon, so he stopped too. They gained a consensus: the Ld 6 continued whispering and received bad marks, the Girls received better marks than him and were treated as better students by the Teachers, but, for the Class, he would remain to be the Primus. When Rose joined their Class, she told him what she and her Wise Nation thought: the boy who, from his childhood years, had to struggle for anything, he wanted, is a much better candidate for a husband than the one whose parents were capable of buying him anything, he wanted. And, thus, Rose healed him of the poverty complex. Sometimes later, when he visited one of the Girls for a week during a prestigious networking conference in Paris and was welcome by her as some king of power, she confessed that she was still afraid of his jokes (more than twenty years later). His poverty resulted in working out, early, his capabilities of getting or, even,

making money which were very useful for him to help other people which has been a prerequisite of successful E-service involvement.

The Girls of his Nation liked talkative and insolent boys why the Ld 6 was very shy with respect to girls and they were not interested to them. He suffered a lot till Rose told him the opinion of her and her Nation: talkativeness and insolence not supported by a real knowledge and experience mean really nothing. This was very precious for working in E-service where his capabilities on arguing basing on his wide knowledge and experience helped a lot for him to be successful.

Listening to the Rose's opinions, the Ld 6 understood that probably all his learned or devised rules for living were included in the Jewish Nation good living practices and he decided to become a Judeophile, though he did not know this word then (the turn of 1959). However, the correct English spelling of the word is not given in the big Oxford-PWN dictionary even now (end of October, 2020). This helped him a lot to become a comrade who was approved by many people as a good E-service provider.

## 2.1 Organizational work

The Ld 6 was appointed for the position of the leading designer of the Book 1 project. He was very happy of that since he had been involved in investigation of technological and off-technology (non-technological) aspects of ICT development and believed that the leading designers of pioneering/emerging/novel ICT application projects, like him, are capable and, even more, obliged to perform such task in the best possible way. This was needed in order that he could work, effectively, in the E-service domain. His education university list was also very helpful since it included not only the practical degrees of PhD. and MSc. in Electronic Engineering/Mathematical Machine Specialty, but also MSc. Mathematics with distinction, making him capable of solving many theoretical ICT problems, even those unsolvable for other Electronic/ICT Engineers. In 1990, he tried to enter into connections with the IFAC TC 9.5 group involved in investigation of ethical problems. He submitted a paper with a thesis stating that East Europe ICT designers were better than their Western counterparts since they had had to learn and manufacture ICT in much worse conditions than their Western Colleagues (the Komuna (hated Communism system on the East) and undeserved, brainless embargoes on the West. He received bravos louder than other members of the Section, but the Session Chairman did not like the Ld 6's thesis and, most probably, threw his application to IFAC into a litter bin and the Ld 6 received the next Call for Papers from them after 10 years, and could and did enter into cooperation with the Federation after an extremely long waiting time. However, the publications edited by him and his group involved in design and implementation of pioneering/emerging/novel ICT application projects within the E-service domain proved to be rather interesting for the IFAC specialist environment.

## 2.2 The team assembled by Ld 6 for the Book 1 project

First of all, the Ld 6 assembled roughly 30 ICT pioneers of the biggest local ICT manufacturer, or the substitutes of the pioneers that had gone in the meantime, his former Colleagues from his initial employment period, who had led their projects successfully thus introducing their former biggest ICT Manufacturer, Elwro, into the E-service domain. He was very proud that, except of one pioneer invited to the Ld 6 Team, agreed to become the Book 1 Chapter Co-Authors. This one pioneer was cooperating with an easily recognized international ICT and automation corporation and had no chance to get the consent for Co-Authoring Book 1. Important

positions in the Book 1 project team were held by the Authors which were to discuss the Additional Aspects of Book 1 (ICT ethics and HB) (AA Experts), and the Publishers. During developing this Book 1, the group of the Book 1 Chapter Co-Authors was expanded of representatives of additional ICT experts of other ICT and ICT application providers invited by the AA Expert via the Ld 6.

**2.3 The specifications similar to the in the Elsevier HardwareX journal are shown below in order that this journal requirements were met in Book 1 under discussion**

**Hereinafter, the descriptions and subjects of the hardware components under investigation are presented, constituting a basis for E-service work.**

|                        |  |
|------------------------|--|
| Hardware name          | Elwro (Odra-Series computers; the Elwro computers names were derived from the Odra River flowing via Wroclaw, the Polish ICT Capital City for many years, specialized in E-service domain computer and computer network applications.  |
| Subject area           | <p>Pioneering/emerging/novel ICT applications (in Poland and Hungary) under the Communist system domination, called by us WPR (Who has got Power is Right), belonging to the following subject areas:</p> <ul style="list-style-type: none"><li>• Engineering and Material Science</li><li>• Environmental, Planetary and Agricultural Sciences</li><li>• General (Electric Power Industry, in particular)</li><li>• Within the E-service domain</li></ul> |
| Hardware types         | <ul style="list-style-type: none"><li>• Imaging tools</li><li>• Measuring physical properties and in-lab sensors</li><li>• Field measurements and sensors</li><li>• Electrical engineering and computer science</li><li>• Mechanical engineering and materials science</li><li>• Other: Environmental safety, pioneering/emerging/novel system performance evaluation and robustness evaluation,</li></ul>   |
| Open Source License    | Unavailable in Hungary and Poland within the period under discussion. Mainly due to brainless and unjust embargoes, highly interfering the development of the E-service in the Countries.  |
| Cost of Hardware       | Unavailable in Hungary and Poland within the period under discussion. Mainly due the WPR system acting in contrary to E-service.   |
| Source File Repository | Unavailable in Hungary and Poland within the period under discussion. Mainly due to brainless and unjust embargoes, and the WPR system, highly retarding the development of the E-service domain.  |

**Hardware in context description.**

The Orion Electronic Ltd. were the Hungarian first Manufacturer of computers for Computer Control Systems (CCS) in early nineteen hundred years. Unfortunately, their production range does not include any computers for E-service now. The reasons have been described for the Polish case study.

**2.4 Hardware description**

Like under Section 1, due to the very wide domain on paper (Polish computers manufactured from 1961 till some 1993) will be described depicting the hardware,



highlighting the customization rather than the exemplary steps of the procedure. In our opinion, the design and development of modern hardware, especially that intended for the E-service applications need a detailed knowledge and experience in hardware design, development and implementation. We believe that it may be gained only when local Manufacturers produce their solutions for E-service independently of severe and, often, unjust conditions for their work (political systems, colonial approach of technology providers, brainless and unjust embargoes).

## 2.5 Declaration of interest

It was assumed that the book chapter would be written by the Co-Authors as a fully volunteer E-service work (though the notion: work for the Society, used in Poland, performed under control of computer and computer application leading designers), would be much more adequate here, and there will be no conflict of interests nor debts for outsourcing work.

In particular, no Co-Authors may have any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest could include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. The Co-Authors will not have any interests in a summary declaration of interest statement in the manuscript file. The following has been stated: 'Declarations of interest: none'. This summary statement will be ultimately published if the E-service book chapter is accepted for printing.

Human and animal rights): the project will be performed in accordance with The Code of Ethics (Most Leading Authors are experts in this domain for ICT, in particular for E-service).

The Authors ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans, in conformity with the E-service domain rules.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed. This follows from the fact that E-service does need really human behavior from the CCS (Computer Control System) designers and implementers interested in the real E-service work.

## 2.6 Continuation of the of the Book 1 development history

The Ld 6 was very happy of the conditions created for development of this Book 1: a complete team of the Manufacturer's pioneers (the successful leading designers/programmers) of the most important pioneering/emerging/novel Manufacturer's ICT projects belonging to the E-service domain (the pioneer who could not be an official Book 1 Chapter Co-Author, but the Consultant, only, of the very reach international ICT design and development CV, helped, in fact, the Ld 6 even more than the other ICT pioneers; on the other hand, the AA Experts (Additional Aspect Ones) were the best experts of a very big and prestigious Federation, in Off-Technology (Non-Technological) and Technological Aspects of ICT development. Therefore, the best needed information sources for the Book 1 development process was available and the AA Book 1 Editor position was appointed to the Leading AA

Expert, together with the Ld 6. The atmosphere for their work was simply enthusiastic: The local AA Experts were very apt to help with the Book 1 Project and the AA Expert appointed for the Book 1 Editor, who knew the very severe Ld 6's working conditions of the severe medical disaster (hip joint displacement, state after a severe blood escape, leukemia with chemistry treatment (especially dangerous in the CoronaVirus period), melanoma and various derivative disorders), volunteered that his one-time remuneration and possible royalties are transferred to the Ld 6. He was very happy about that since even the one-time payment for the Book 1 projects, for, as it was assessed, two years of work, would be enough for the necessary payable rehabilitation treatments of his Family patient (two times a month within 3 years). Such approach of Ld 6 was, for sure, a characteristic aspect of true E-service work.

## **2.7 Book 1 writing process**

In accordance with the Book 1 development plan, the proper work on this project began from working out the description of the practical part describing the Computer Manufacturer (Elwro) work within the E-service domain. The description was prepared by the Ld 6 supported by the Team of former Elwro pioneers (or the substitutes of the pioneers who had gone in the meantime), who were successful leading designers of the major pioneering/emerging/novel computers or application projects. The Ld 6 belonged to the definite pioneers of Elwro in a subdomain of CCS, very important to the Country, especially within the E-service domain. Even before the first Elwro computer (UMC-1) was launched, the government representatives dreamed that the mathematical machines, as they were called in the pre-computer era in the Country, would highly increase the technological progress and, consequently, the living level in the Country (E. Bilski, B. Kasierski, 1920, private message).

The Elwro ICT pioneers were the hardware and software specialists who were proven bests on the most important hardware and software projects, needing the best knowledge of the computer hardware, software and application solutions. In addition, they should be characterized by a general human ingeniousness and should be capable of solving various technical problems due to, mainly, unjust and brainless embargoes (the embargoes were to restrict development of the Communist armed forces while the Red and Soviet Army never had any problems with the world top level electronic and ICT supplies (imported via, for instance, Finland, who tried to protect their freedom in such way) for their missiles and fighters, while the Ld 6 could not buy a good computer for his civilian customers to perform actual E-service work). The pioneers remembered glaring examples of ingeniousness of employees of various learned professions. For instance, an Elwro programmer was ordered to provide supplies of magnetic powder for their drum memories. He found a successful solution: he collected waste tapes of tape recorders, dissolved them in acetone and dried. And this worked successfully until the embargo for magnetic powder was canceled.

The Ld 6 and the other ICT pioneers worked hard, motivated by their target of publicizing their operative assumptions and results, in accordance with the E-service requirements. In most cases, the Ld 6 organized interviews with the assembled group of pioneers, translating their discussions and passing his translations for validation by the group (all pioneers' English fluency made it possible to work in such mode successfully). The open character of their work was, also, a characteristic feature of the E-service domain.

A year of such hard work made it possible to describe the technical history of Elwro since 1959 (when Elwro was established) till 1993, when the former biggest Polish Manufacturer of computers was sold to a very big International ICT and

Automation Corporation, and illegally sold (violating the contract conditions). The basic practical part was successfully completed and passed to the AA Expert for adding the description of additional aspects of the ICT development. The Ld 6 expected that this work would need less than half a year, needed for development of the basic practical part. However, this expectation was not met and the AA part needed as much as five years to be written incompletely. Due to such a prolonged writing period, this Book 1 had to be excluded of the E-service domain since the Reader waiting time was impermissible for such important project.

The basic reason for such time delay was that the AA Expert without any agreement with the Ld 6 decided to rewrite the basic practical part from the Eckersley English into the traditional English science language. The Eckersley English is toughed, even now, to the students of Oxford, the world capital city of teaching English countries. It is a simple and easily understandable language with its punctuation rules very helpful for the people not being ENS (English Native Speakers). Some people claim that the actual aim of the traditional English is that works written in such English are hardly understandable even for ENS-es and, therefore, look wise. However, Book 1, was oriented by the Ld 6 towards, first of all, poorly developed countries of, roughly, a very low number of NES-es. In addition, E-service requires that any work performed in that domain is easily understandable for non ENS countries, the beneficiary countries of the technology transfer processes, where the demand for novel technologies is highest.

The Ld 6 was in a very uncomfortable position. He would like to abandon the project, but he could not, in practice. He devised this Book 1 and this was to be a book about his Colleagues and for his Colleagues. They had worked at this Book 1. Therefore it would be a dishonor for him, a kind of some disaster, if he resigned of the project himself. He knew that he could be sacked off by the AA Expert and the Publisher, that they could steel his Book 1, but it would be their problem.

There was another important problem: the Book 1 quality: the AA Expert possessed no very much needed ICT education nor, even more, experience and his mistakes could be embarrassing to the Pioneers assembled by him for this project. A glaring example of such errors was as follows:

“The AA Expert sent to the Ld 6 an Odra 1325 computer (roughly ICL 1902a equivalent, but adapted by Elwro engineers for operation in Computer Control Systems (CCS)). Below the scheme of the external drum memory of the computer, rewritten in the only purpose that the AA Expert could claim that it was his figure, there was a single letter: M, and the AA Expert requested an explanation. The Ld 6 guessed at ones that it was a drawing error (the drawer incompetent as the AA Expert was not capable of redrawing the complete scheme and drew M instead of 16 MB), and proposed a simple correction in the legend:

$$M \rightarrow 16\text{MB, i.e. 16 megabytes.} \quad (1)$$

The AA Expert Answer: You must have been wrong: the graphics depicted an external magnetic drum and what megabytes may do in a drum memory.

The Ld 6 thought: Sweet Jesus, he, a pretender for a position of an international ICT expert (he, even, requested, unsuccessfully, that the Ld 6 discussed difficult ICT issues with him), possessed the knowledge of the basic ICT notions poorer than the Ld 6's Grandson and Twin Granddaughters; it was a big shame even for the Grandson case though he was 27 then and was employed by a very recognizable international mobile telephone and ICT corporation as a software expert; but the Ld 6 did not know what could be said about his Granddaughters who were 11 years old, each, then, and had just begun learning informatics in the fifth class of their primary school.



The Ld 6 knew that the AA Expert wished to make an international ICT carrier (probably as a single member of the Book 1 development project) but decided to defend the quality of this Book 1 in order that a good quality book is produced nevertheless.

## **2.8 The beginning of the split in the Book 1 editor's and chapter co-authors group**

The AA Editor sent to the Ld 6 a Book 1 section including a short description of the many century living conditions of the Jewish Nation in the Kingdom of Poland which was, in fact, a complete criticism of the Polish relations, simply discrimination of the Nation in the Kingdom of Poland. The AA Editor even complained that Jews had to build their houses out of city centers while this was not true in general and the location regulations were defined by individual sovereigns. And, while other European countries expelled Jews from their countries and Spain developed the first ghettos for them, Jews were very welcome on the Polish territory and treated as the other citizens there. Many Jewish emigrants settled in Poland. Thus, the section included false information which was not supported by any evidence. The AA Editor accepted the rhetoric of some Israel minister who, in their Tv, accused Polish people that they had sucked anti-Semitism with their Mothers' milk, missing to mention even a word about a dairy research institute wherein this milk was investigated. Of course, high-level politicians may be stupid, sometimes insane, but this Book 1 trying to teach the world ICT environment how to develop this domain in severe political and economic conditions must have been wise in order that anybody wished to read and apply its advices, in conformity with real E-service conduction rules. In addition, nobody authorized the AA Editor to include such topics in this Book 1 and, for the Polish issues, the team of Polish ICT pioneers and the Ld 6 were responsible. The AA Editor did not ask them even about an opinion on the issues but the Reader would blame them that they had insulted their own Nation and even Jews would despise such Authors. Such AA Editor conduct is in contradiction with a real E-service behavior.

The AA Editor continued his action directed towards splitting the Book 1 author team. He accused the Ld 6 for supporting anti-Semitism. He could not call him an anti-Semite since some of their common Colleagues knew his way to become a judeophile and they could protest. However, an anti-Semitism supporter was an undefined AA-Editor neologism and nobody understood its meaning, so nobody could protest. However, an accusation of a judeophile by a Jew would be rather weak and the AA Editor asked a former Ld 6's friend and student (learning the pioneering/emerging/novel ICT application project performing from LD 6) to pass the information into the public domain in Poland. And he did it, generating serious troubles for his former friend and educator. Such methods can be called provocations and are impermissible for E-service work.

The problem of anti-Semitism support was exhausted, so the AA Editor defined another one: the share of the editors in this Book 1. The AA Editor claimed that he wrote more than 70% of Book 1. The Ld 6 was not a compliant leading designer, at all, and reminded that he had to eliminate the embarrassing errors of the AA Editor due to the incompetence of the latter in ICT (see hereinabove) and it was assumed that the share in Book 1 was fifty-fifty. In addition, the AA Editor withdrew his subsidy for the Ld 6 (due to the very severe medical problems in his family), treating his empty promises as glass balls that should be an enough remuneration for the Ld 6. Such a conduction was even more severe for LD 6 than making light of his problems at all, since the latter could have tried to get financial supports from other sources. In no way, it was in agreement with the E-service requirements.

The next AA Editor's attack was oriented towards the team of Elwro pioneers appointed for Book 1 Chapter Co-Authors. The AA Editor protested but the publisher confirmed that officially. Therefore, the AA Editor devised that the Editors should sign a new Book 1 publishing contract. The old contract was annulled and the new contract was to be delivered by the publisher till June, 24, but it was not delivered to the Ld 6 till now (2020, October, 28-th). The Ld 6's suspicions were met but this Book 1 had not been edited before the date. This is not a reason of happiness since there is, till now, no book teaching the world Reader how to develop ICT in severe political and economic conditions. And such an academic book is severely needed now, in the period of an inappropriate, colonialism based technology transfer processes around the world. Thus, the AA Editor actions were in a severe contradiction with the permissible targets and methods of E-service demands.

### 3. Results and discussion

The young, wise and active boys in various countries, especially those poorly developed ones, may be attracted by the views and conviction of the Semitic Nation, characterized by comradeship even unlimited by the costs that should be paid, a great respect to the real knowledge, the poverty of young boys, in opinion of Jews, produced a chance for them to upgrade earlier in gaining needed things in comparison with those of rich families that could buy, for them, everything they wished, Jews preferred boys shy with girls since talkativeness and self-confidence not supported by real knowledge mean merely nothing. As in the case of the Ld 6, the characteristics preferred by the Semitic Nation, produced the best results in the adult life.

The secondary school education and the great love to Rose made the Ld 6 a good candidate for large-scale ICT application projects of a pioneering/emerging/novel character. He understood better than his counterparts that no harm may be done to his Colleagues and that all of us are Colleagues of each other. He understood also that he should learn enough to be competent in the complex domain of ICT. However it would not be good to surrender to the individuals possessing power and using it inappropriately, i.e. as WPR-s (Who has got Power is Right). Surrendering to people possessing power and, what happens together frequently, who do not possess sufficient knowledge and experience is not appropriate HB (Human Behavior) since it leads to conquering the world by undereducated individuals who cannot lead the world duly.

### 4. Conclusions

Undereducated and inexperienced individuals should not be allowed to execute pioneering/emerging/novel ICT application projects of high impacts of the people using them, provided that their work could be classified as E-service activity.

Large-scale ICT projects should be duly led under control of experienced leading designers and distributed governing should be avoided; in other case, it would be very doubtful that the projects could be classified within the E-service domain.

### 5. Further work

Considering that it is doubtful to reinstate the Book 1 project, it is very appropriate to speed-up realization of a proposed book series devised by LD 6, as below:

## **6. A book series: good ICT system design and implementation practices**

### **6.1 Foreword**

What are the good ICT (Information and Telecommunication Technology) system design and implementation practices?

In the opinion of the Editors and the Chapter Co-Authors of this Book Series (the Team), they are the practices proven in the ICT system and network design and implementation process. The Team thought that it was very worthwhile to write a book on the good ICT system design and implementation practices devised and proven during executing some important pioneering/emerging/novel ICT systems and networks that could be recognized as E-service work.

### **6.2 Introduction**

This Book 3, the first book (the herald) of the Book Series, has been devoted to the practices devised and proven when realizing the first two Polish computer control systems. The example of Poland (the Country) was chosen purposefully: Due many adverse conditions, in particular the unreasonable embargoes imposed on the modern computer equipment, the designers in the Country had to find their own solutions for their projects for much more problems than their colleagues working comfortably in well developed countries. Therefore, the designers of the Country must have learned more than those of the West and could devise, test and prove more and better good ICT design and implementation practices than those working abroad. Due to their very severe technological and political conditions, they could develop and validate their E-service solutions better than the West designers and implementers working in comfortable conditions of designing and implementation.

Book 3 describes the steel-bar mill material flow control system designed, installed, started up and commissioned in the Steel-Bar Mill of the Huta Warszawa Metallurgical Plant, and the Radio-Astronomy centre dish control and data processing system. Both systems were designed of the Odra 1204 computer, designed and developed by the biggest then computer manufacturer in the Country, Elwro. The application of the material flow control system is described. The hardware and software of the systems are discussed. A special attention was put to performance evaluation since, due to various embargoes imposed on the computer equipment, the Odra 1204 computer featured with operating characteristics worse than those of computers available in well developed countries. The metallurgical system development process is described together with the period of commissioning in the field. The descriptions of the system trial run and the final phase for this case study follow. The ethical and Human Behavior (HB) aspects are discussed and the conclusions are given. When realizing this project, LD 4 (the leading designer, Willy Wojsznis) and LD 6 produced the first proof that complex CCS-es could be designed and developed by Polish engineers making use of home hardware and software, in agreement with the E-service domain requirements.

### **6.3 Earlier experience**

The Leading Designer 6, the main hero of this Book 3, was a co-author of the first Polish computer control system (both hardware and software). Soon he

became the leading designer of many emerging (pioneering) ICT application projects. At that time, the Country (Poland) was governed by the undemocratic Communist political system called, by the Editors, a WPR (Who has got Power is Right) one. The executive body of WPR, called PoPs (Power of People) used to deprive leading designers of successful projects of the glory of the leading creator, promotion and money due to the designer and attacked them strongly, usually, when a project was completed. Since WPR provided PoPs with unlimited, in practice, power with regard to the designers, the latter, usually, lost and were not allowed to lead another project. As a matter of fact, a similar mode of conduct was adopted often by big corporations offering Hi-Tech transfer to poorly or even well developed countries.

Therefore, the Leading Designer 6, never entered any battle with PoPs. He was also a professional English – Polish translator so he was financially independent from PoPs of the ICT domain and could change his team, department or even employer when his project was implemented, and pretend a WPR dupe. The WPR system loved dupes and wished to change all citizens of the Country into dupes; therefore, the Leading Designer 6 was granted new important projects. His earlier projects were to be expanded and/or proliferated by other leading designers so he had to educate and upgrade them beforehand. It was an LD 6 method, that was very useful to design and implement E-service ICT applications within an unjust and brainless political systems, such as Communism and Capitalism based on Colonial traditions.

#### 6.4 Personal experience

Usually, around the world, educators applied the top-down technique, enumerating and describing various methods or procedures in such a way that the only proof of their correctness was, in fact, that the professor mentioned them. The Leading Designer 6 and the Editors as well as the Co-Authors' were not interested in advertisement nor proliferation of their own methods since they could not know if the methods would work well in future pioneering/emerging/novel conditions. Therefore, the goal was to teach his students, as he called his younger Colleagues involved in the ICT application projects he led, how to devise such methods and procedures and upgrade them duly.

So the Leader rejected the educational rhetoric and always presented the premises and their impacts on the leading designer's decisions. In order that the students gained self-assurance, if they proposed a feasible solution competent to his one, the students' one was always launched. This was a very successful upgrading method.

This worked perfectly: all pioneering/emerging/novel ICT application systems the Leader designed and implemented were expanded and proliferated successfully by his younger Colleagues and enriched, justly, his personal achievements.

This Book 3 has been written in a similar style: a lot of detailed technical and other information has been given so that the Reader is capable of verifying if the Chapter Co-Authors' theses are true. All these method and, even, tricks, made it possible, for Ld 6, to apply the methods and practices enabling E-service work many years before this notion was introduced to ICT.

#### 6.5 The book series planned

Ref. Table 1.



| Book No | Book title and Editors:<br>The Good ICT Design<br>and Implementation<br>Practices: X Case<br>Studies<br>X: (Chronologically) | Short Book Content:   |
|---------|--|---|
| 3       | X: Metallurgical and<br>Radio-Astronomic Case<br>Studies. J. B. Lewoc, E.<br>Babulak, D. Al-Dabass.                          | The first two computer control systems designed in Poland. The Leader and the Teams had to learn most and fastest in in their lives, and their discoveries were very valuable to ICT of Poland (and around the world). Many useful design and implementation practices have been worked out, validated and presented to the Reader.   |
| 4       | X: Regional Power<br>Control System Boards<br>(SAPI ODM) Case<br>Studies, E. Babulak, J.<br>B. Lewoc, M. Rozent              | The first Polish industrial control systems which generated very big benefits for the country (Poland) (several billion Euro) through enabling control of more than 70% of power flowing via the Polish electric power network during close to 20 years. Many useful design and implementation practices were learned and/or validated on the large-scale systems.  |
| 5       | X: Power Network<br>Control Engineers’<br>Training, M. Rozent, J.<br>B. Lewoc, E. Babulak.                                   | The power system control engineer work was very difficult and hard in conditions of failures in the power system and needed good training for them. Though, at that time (at the turn of nineteen seventies), very most large scale computer simulators failed, the Team devised a solution enabling to train successfully, within some 10 years, more than 90% of the power network control engineers in the country. This Book 3 will describe the important practices learned and developed for this case study. |
| 6       | X: Major Specialized<br>Devices/Systems for the<br>Power System Control,<br>J. B. Lewoc, E. Babulak.                         | The success of the Institute (IASE) projects in power system control induced some interest of the power industry in smaller and cheaper solutions for similar applications. This resulted in design and development of a microprocessor based “mini SAPI ODM” and a microcomputer based visual power industry display. This Book presents the good practices learned and validated on that case-study.  |
| 7       | X: Communication<br>Network of MSK<br>Interuniversity<br>Computer Network, E.<br>Babulak, J. B. Lewoc, A.<br>Izworski.       | The case study was the first Polish computer network realized within an European, primarily, movement to construct heterogeneous networks. The good practices learned an on the cases study are discussed.  |
| 8       | X: Data Base for Power<br>Plants (Badel), J. B.<br>Lewoc, E. Babulak, I.<br>Chomiak-Orsa.                                    | This project was initiated for a big power plant in the country. Though it was stopped during the Martial Law, after a few years was reinitiated in the power generating unit control and has competed successfully with the systems offered by the world biggest corporation in the area. This Book will describe the good practices leading to such success.  |
| 9       | X: Network<br>Performance<br>Evaluation Projects, E.<br>Babulak, J. B. Lewoc,<br>M. Rozent.                                  | The MSK project was a research one and it was possible to develop some tools and perform investigations of network performance. This Book will describe the good practices learned and validated.   |
| 10      | X: Computer<br>Network Robustness<br>Evaluation Projects, J.<br>B. Lewoc, E. Babulak,<br>A. Izworski.                        | The projects were used to investigate and optimize robustness of typical computer control systems (of the star or common-medium types).   |

**Table 1.**  
*Book series proposed:*

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## References

- [1] L. N. K. Leonard, T. P. Cronan, J. Kreie. What influences IT behavior intentions – planned behavior, reasoned action, perceived importance or individual characteristics? (2004). INFORMATION & MANAGEMENT.
- [2] G. Sang, M. Valcke, J. van Braak, Jo Tondeur, Student teachers' thinking processes: Predictors of prospective teaching behaviors with educational technology. (2009). Computers & Education, Journal homepage: [www.elsevier.com/locate/compedu](http://www.elsevier.com/locate/compedu) with educational technology
- [3] A. Singhapakdi, S. J. Vitell, K. L. Kraft. Moral intensity and ethical decision-making of marketing professionals. (1996). Journal of Business Research, Vol. 36, Issue 3, July 1996, Pages 245-255.
- [4] R. G. Bednarik (Ed.). Understanding Human Behavior. (2016). Nova Science Publishers. ISBN: 978-1-1-63485-174-9.
- [5] L. K. Blach et al, West-East approaches of automation. A Case Study. (1991). In CAA '91 (IFAC), Krems, 6 pages).
- [6] M. Hersh (Ed.). Ethical Engineering for ICT Development and Environmental Stability. (2015). Library of Congress Control Number: 2015934010, Springer-Verlag London.
- [7] A. Izworski, J. B. Lewoc, B. Piwowar. Some Aspects of Technology Transfer (2001). In P. Kopacek (Ed.). Social stability: the challenge of technology development (In SWIIS '01, IFAC). Vienna. Published by Pergamon (Oxford, UK). 2002. pp. 51-55.
- [8] J. B. Lewoc. Performance evaluation problems for actual computer networks. (1990). AMSE Press.
- [9] J. B. Lewoc, M. Rozent.I. Saczuk. The computing power and the computer systems for the power industry in Poland. In MICC (IFAC). Prague 1992. 6 pages.
- [10] J. B. Lewoc, A. Abramczyk, A. Izworski. Nurse Training case study: e-training of nurses in diabetes problems. (2005). Nurse Education in Practice (Elsevier). Vol. 5, Issue 2. Pages 70-77.
- [11] J. B. Lewoc. A Case Study: Oractical Ethical Aspects for Technology Transfer in Computer Control System Development. (2005). In P. Zitec (Ed.) IFAC World Congress. Prague. 6 pages.
- [12] J. B. Lewoc, A. Izworski, S. Skowronski. Economic, Ethical and Cultural Aspects of ITC Change in Power System Automation: a Case Study of Poland. (2006). In P. Kopacek (Ed.). SWIIS Conference ISA '06. Prishtina, Kosovo. Elsevier (Oxford, UK), pp. 83-87.
- [13] J. B. Lewoc, A. Izworski, S. Skowronski. Performance Modelling of a Computer Integrated Manufacturing and Management System. (2007).B. Zupancic, R. Karba, S. Blazic (Eds.). Eurosim Congress on modeling and Simulation. EUROSIM 2007. Ljubljana, Slovenia, Agresim, 8 pages.
- [14] J. B. Lewoc, A. Izworski, S. Skowronski, A. Kieleczawa. A Case Study: History of Polish Computer Applications in Power System Control. (2008a). In: J. Impagliazo (Ed.). History of computing and education 3 (HCE 3). Proceeding of the IFIP Congress, Milano. Springer (New York). pp. 23-36.
- [15] J. B. Lewoc, A. Izworski, S. Skowronski. Distant Learning Case-Study: Nurse Training in Diabetes Problems. (2008b). In R. Chbeir *et al.*

The Fifth International Conference on Soft Computing as Trans-disciplinary Science and Technology, CSTST '2008 IEEE, Cergy-Pontoise, France. ACM (New York), pp. 101-105.

[16] J. B. Lewoc et al. Computer Integrated Manufacturing & Management Systems – An Emerging Application of Control and Management. In A. (2009). Rustecki (Ed.). IX National Conference with International Participation. ETAI, Ohrid, Macedonia, ETAI, 2009, 7 pages.

[17] J. B. Lewoc, A. Izworski, S. Skowronski, A. Kieleczawa et al. Technology Proliferation and Transfer Ethical Aspects. A Case Study of Wroclaw, Poland. In P. Kopacek, I, Dimitriachi, S. Caramihai (Eds.). Bucharest, Elsevier (Oxford, UK), 6 pages.

[18] J. B. Lewoc *et al.* An Approximate Actual Performance Evaluation Method. (2010). L. Alamitoe *et al.* (Eds.). UKSim/AMSS, ISMS 2010. Liverpool, UK. IEEE CS Press 2010, IEEE Xplore DOI: 10.1109/ISMSA. 2010.74. pp. 84-91.

[19] J. B. Lewoc, A. Izworski, S. Skowronski, A. Kieleczawa, G. M. Dimirovski. (2011a). Barriers to Ethical Behaviour: A Case Study Poland. (2010). In IFAC S. Bittani, A. Cenedese, S. Zampieri (Eds.), 18<sup>th</sup> IFAC World Congress, Milan, Elsevier (Oxford, UK), 6 pages.

[20] J. B. Lewoc, A. Izworski, S. Skowronski, A. Kieleczawa *et al.* An Approximate Actual Network Performance Evaluation Method. (2011b). JNIT, Vol. 2, No. 3, pp. 84-91.

[21] J. B. Lewoc, *et al.* (2012). Optimal Management Network Topology in a CIMM System. A case Study. In L. Stapleton (Ed.): SWIIS 2012 (IFAC), Waterford, Elsevier (Oxford, UK), 6 pages.

[22] J. B. Lewoc, E. Babulak, D. Al-Dabass (Eds.). ICT Performance and Robustness Investigations: Some Ethical and Human Behavior Aspects. (2020). Nova Science Publishers. ISBN 978-1-53614-916-6.