

CHALLENGES AND TRENDS REGARDING THE IMPLEMENTATION OF ICT SOLUTIONS IN THE MANAGEMENT OF CUSTOMER SERVICE DEPARTMENT, WITH CASE STUDY AT AS&ICT ROMANIA

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Abstract

The motivation for choosing the theme is primarily due to our passion for the ICT field. In this work, we first approached the study and analysis of the national and international ICT market from the last 5 years, then we will refer to the challenges and trends regarding the implementation of ICT solutions in the management of the customer services department, with a case study at the Company AS&ICT Romania¹.

The ICT industry in Romania represents one of the most prosperous economic sectors, registering a turnover of almost 6 billion euros in 2019, representing approximately 5.5% of the country's Gross Domestic Product.

¹ In order to protect the identity of the company and the statistical data used in this work, we chose not to disclose the real name of the company where we conducted the case study.

In 2020, the IT&C sector had a turnover of 70.3 billion lei and was in the Top 5 economic sectors, along with manufacturing, construction, transport, and storage

The purpose of the paper is mainly to follow the evolution of the ICT market on a national and international level in the last 5 years.

The objectives pursued in the paper have in mind the establishment of the year-by-year evolution of the national and international ICT market, as well as the impact it generates on the economy and everyday life.

The importance of the theme for research and for the business environment consists in the fact that increasingly in recent years the ICT field represents in the business environment an important pillar in the digitization and automation of services. Digitization means a large number of tools that make work more efficient within a company.

The novelty of the paper's theme would consist in measuring the impact of the influence of the ICT industry on the perception of everyday life, studying the growth of the national and international ICT industry, as well as its impact on the business environment.

Keywords: *implementation of ICT solutions, management of the customer service department, business environment, digitization*

JEL Classification: *O14*

Introduction

This **research paper** tries to highlight the challenges and trends regarding the implementation of ICT solutions in the management of the customer service department. The contribution of the ICT sector in simplifying project implementation procedures is being pursued. With the help of specialized software, it is desired to correlate the solutions and directions given by management with all the entities involved in the process. (Szymczyk, K. , 2021)

1.The international profile market specific to the ICT industry

According to a Reuters study, mobile applications and the cloud are becoming more important, and the profit margins in software are more and more attractive. However, it is estimated that large companies such as IBM, HP, Oracle or Dell could soon operate important restructurings. In fact, Cisco has announced that it will lay off 5,500 employees, thus joining a long line of prominent companies that have undergone massive restructuring in recent years. (*Foo Yun Chee, 2023*).

There is a kind of "decomposition" taking place in the ICT sector, and companies like Microsoft and Amazon, which provide "super cloud" services, stand to gain in the medium term. These services help manage hardware, software, networks and databases, without the need for company employees to deal with every technological chapter. The consequence is that large companies can manage with fewer employees. (Harter, D. E., Krishnan, M. S., & Slaughter, S. A., 2000).

The transition to the new business model in ICT does not only involve restructuring, but also acquisitions. Cisco, for example, has bought a number of smaller companies specializing in ICT security or data analysis and says the move will help it establish itself in areas where it wants to become a leader. (Simoni, M., Schiavone, F., Risitano, M., Leone, D., & Chen, J., 2022)

In the top 10 most valuable companies in the world we meet important players in the ICT industry (*Tuck A., 2022*):

a. MICROSOFT Its market capitalization crossed \$1 trillion in April 2019 and currently stands at \$1.2 trillion.

b. APPLE Currently has a market capitalization of \$1.1 trillion.

c. AMAZON In 2018, Amazon had a market capitalization of more than one trillion dollars, but currently, it reaches 971,000 million in the stock market, according to the ranking of PwC.

d. ALPHABET (owner of Google, Youtube, Chromcast ect) Its market cap now stands at \$799,000 million.

e. ALIBABA Alibaba currently has a market capitalization of \$522 billion

f. FACEBOOK currently has a market capitalization of \$469 billion.

2. The Romanian market specific to the ICT industry

Regarding the evolution of the ICT market in the last decade, the data published by the National Institute of Statistics (INS) in 2018 indicate a number of over 115,000 employees in the ICT industry in Romania. At the same time, the percentage evolution of turnover, and net profit, but also the number of employees of the largest technology companies in Romania between 2009 and 2019 increased significantly. (Jurek, P., Olech, M., & Brycz, H., 2021). Companies with foreign capital operating in Romania represent 10% of the total number of companies in the industry, generating 73% of market revenues, while Romanian companies generate approximately 27% of the total market. (<https://insse.ro/cms>) A problematic factor regarding the development of the ICT industry in Romania is the fact that about 78% of the market is used as exports according to the Employers' Association of the Software and Services Industry (ANIS), registering

significant increases compared to 2017 (65%) and 2018 (72%). (<https://anis.ro/en/>) This trend comes against the background of an undersized internal market, caused by the low degree of digitization of the administration, respectively the adoption of technology on a very small scale in Romanian companies, compared to the EU average. Romania ranks 26th out of the 28 EU member states in the Digital Economy and Society Index (DESI) for 2020. (<https://digital-strategy.ec.europa.eu/>)

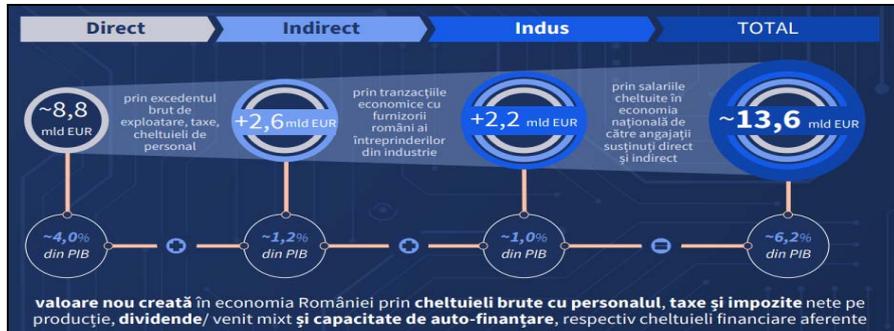
Based on pre-pandemic data, Romania's performance was identical in four of the five DESI dimensions measured. This situation is caused by the slow progress recorded in general, but also by political developments, as there have been four different governments in Romania in the last three years.

Romania scores the best in the connectivity dimension, thanks to the high use of very high-speed broadband and the wide availability of very high-capacity fixed networks, especially in urban areas. 49% of homes in Romania are subscribed to very high-speed broadband services (at least 100 Mbps), thus Romania ranks 5th in the EU. (Remeikienė, R., Gasparėnienė, L., Bayar, Y., Ginevičius, R., & Ragaišytė, I. M., 2022). However, the digitization of the economy has lagged behind, given that almost a fifth of Romanians have never used the Internet and less than a third have at least basic digital skills. Romania is well positioned in terms of ICT graduates, ranking fifth, with 5.6% of all graduates (EU average: 3.6%); however, in terms of digital public services and the use of internet services, Romania's performance is the lowest among EU member states (Kerzner, H., 2022).

The ICT field registered a 10% increase in employees in 2020 and 16% in 2021.

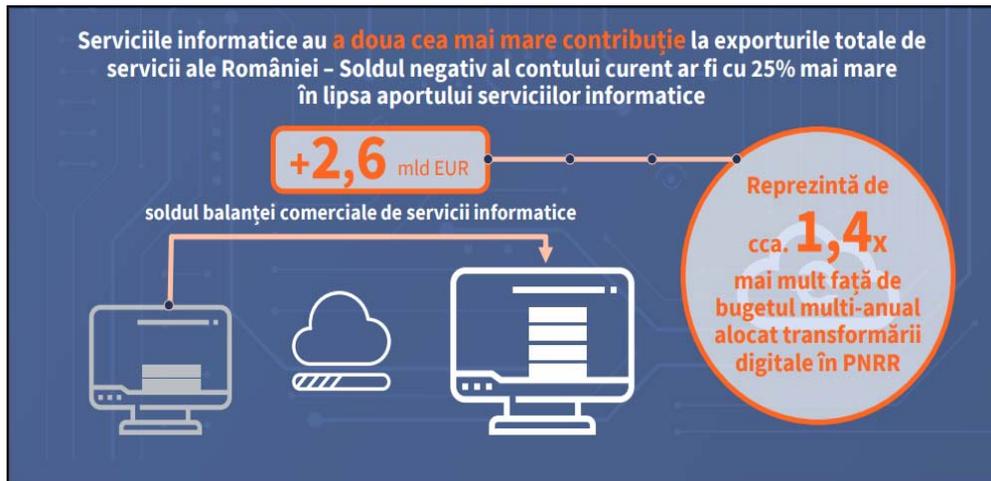
The annual growth rate of the gross added value in the software industry and ICT services and in the entire economy of Romania in 2020 was as it is to be shown in the graphs to be exposed, the data is taken from official sources, which we will quote. In the following pictures and graphs, we will try to look in detail at this impact (<https://anis.ro/en/>):

The impact of the ICT software and services industry in Romania's GDP, 2020



Source: ANIS – Study on the impact of the software and IT services industry

The impact of the software and IT services industry on the trade balance in Romania, 2020



Source: ANIS – Study on the impact of the software and IT services industry

The impact of the software and IT services industry
on the labor market in Romania, 2020



(Source: ANIS – Study on the impact of the software and IT services industry)

A study carried out by SRD-media together with Adrian Lupău on the evolution of the IT field in Romania shows that (<https://www.managero.ro>):

- Small IT firms in Cluj register a 15% increase in employees in 2021 compared to 2019, while Bucharest shows a growth of only 1.5%
- The average IT companies in Romania show an increase of 11% in Cluj and 13% in Bucharest.
- Large IT corporations present on the Cluj market register significant increases in 2021. 57% more employees than in 2019
- LinkedIn – an online environment for new opportunities

When it comes to small IT companies in Cluj, the number of employees has increased significantly since 2019. The data shows that in 2021 there were 3.5% more than in 2020 and 15% more than in 2019.

However, the same cannot be said about those in Bucharest. There was a decrease of 0.4% in 2021 compared to 2020, among the employees of these companies.

- Average ICT companies in the country show an increase of 11% in Cluj and 13% in Bucharest.

Data from ICT companies in Cluj that have between 50 and 100 employees showed an increase of approximately 11% from 2019 to the present.

An evolution is also observed in the case of companies in Bucharest, where we have an increase of almost 13% on the IT labor market.

- LinkedIn – an online environment for new opportunities.

The pandemic has influenced all areas of society, and the labor market was no exception. The fact that business events and conferences could no longer be held due to the restrictions and safety measures imposed by the authorities, made entrepreneurs reorient themselves. LinkedIn was the social platform that generated new opportunities in the industry for ICT employers and employees, especially after the outbreak of the pandemic. (Alkatheeri, H. B., Jabeen, F., Mehmood, K., & Santoro, G., 2021).

An expert in LinkedIn, Adrian Lupău explains in the same article as above, what this social media platform represents for entrepreneurs, but also from the point of view of the collected data: "For data collection, we used LinkedIn, with its professional version Sales Navigator, because it is the only source of real-time data on the evolution of companies. This is due to the fact that it is constantly updated by all members of the network. When we talk about data, there is no ultimate source of 'truth' because data by its very nature is perishable and constantly changing, but the way this data is collected and updated makes the difference. Precisely from this point of view, LinkedIn presents an advantage, being the only professional business network that had a significant growth in 2020. Entrepreneurs turned their attention to the online environment to generate new opportunities in the absence of traditional means - conferences and events business - which became unavailable due to the pandemic," Adrian Lupău reported (<https://www.managero.ro>).

Methodology

In this study, SRD-media, together with Adrian Lupău, B2B sales specialist and LinkedIn expert, analyzed over 200 companies present on the ICT market in Romania. Data on the number of employees from 2019, 2020 and 2021 were extracted from LinkedIn, with the aim of tracking the evolution of the labor market in this field. Both Romanian companies and subsidiaries of large international corporations were included in the analysis (<https://www.managero.ro>). They were analyzed and compared according to their size: small companies (under 50 employees), medium-sized corporations (between 50 and 100 employees) and large employers (over 100 employees), with a focus on Cluj and Bucharest. (Shastri, K., & Mishra, R., 2021)

3. Legislative aspects regarding the ICT field in Romania

There are many areas of ICT activity that are regulated or influenced by applicable laws. First there is the so-called "intellectual property" in general, especially with regard to media content (especially CDs and DVDs) and digital content (music, movies, video games and programs in general ...): in particular, copyright, fair use and specific regulations for limiting duplication (copy prevention). The problem of Internet piracy is also very much felt, with the dissemination of content through peer-to-peer distributed systems. The patentability of software is a controversial and constantly evolving subject in Europe and elsewhere. (Waśkowski, Z., & Jasiulewicz, A., 2021)

Topics related to software licensing, software license acceptance, free and open source software may involve discussions of product law, individual developer professional liability, warranties, contracts, trade secrets, and intellectual property.

According to Lawrence Lessig, there are 4 main forces that govern the Internet, according to what he calls the "Pathetic Point Theory" in his book "Code and Other Laws of Cyberspace" (Lessig, L., 2009):

- The law: What Lessig calls "the standard code of the East Coast," clearly referring to the laws passed by the White House. In terms of digital legislation, the United States is the country with the most advanced regulations. The many ever-changing laws, codes, and regulations of the United States make many actions on the Internet subject to conventional law. Areas such as gambling, child pornography and fraud are regulated in the same way online and offline. One of the most controversial sectors is trading and transactions in general, especially cross-border. Sometimes it is clear that illegal offline transactions are not regulated on the Internet. (Bode, M., Deneva, M., & Van Sinderen, M. J., 2022, June)

- Architecture: What Lessig calls "West Coast Code," from Silicon Valley programming code. These mechanisms concern the parameters of how information can and cannot be transmitted over the Internet. Everything on the Internet, from filtering software (URLs or keywords that are blocked before they can be viewed on the device), to cryptographic programs, to the basic architecture of TCP/IP protocols, falls under this essentially private regulatory category. It can be argued that all other ways of regulating the Internet are based on or significantly influenced by the "West Coast Code".

- Norms: As in all other modes of social interaction, behavior is governed by social norms and conventions. Although some online activities or conduct may not be expressly prohibited by the Internet Architecture Code or expressly prohibited by traditional government law, such activities or conduct are governed by the rules

of the community in which the business is conducted, in this Internet users. Just as certain patterns of behavior would lead an individual to be estranged from our real-world society, so some actions will be censored or self-regulated by the norms of whatever community one chooses to access on the Internet (Kumar, M., & Ayedee, D., 2021).

- Market: Closely allied to regulation by social norms, markets also regulate certain patterns of behavior on the Internet. While economic markets will have limited influence on the non-commercial side of the Internet, the Internet also creates a virtual marketplace for information, and that information can have a huge market impact. (Alawamleh, H. A., AlShibly, M. H. A. A., Tommalieh, A. F. A., Al-Qaryouti, M. Q. H., & Ali, B. J. , 2021). Moreover, the increasing popularity of the Internet as a means of transactions and as a showcase for advertising has brought the laws of supply and demand into cyberspace. The forces of supply and demand also affect Internet connectivity, the cost of bandwidth, and the availability of software to facilitate the creation, publication, and use of Internet content. (Gil-Trujillo, A., & Alonso, J. J. S. , 2023)

AS&ICT Romania is a major system integrator of ICT solutions on a market with a high level of competition, which respects the legislative framework and the rules in force. (Weill, P., & Ross, J. W., 2005)

4. Presentation and brief history of AS&ICT Romania

AS&ICT Romania was established in 1994 as a subsidiary of AS&ICT System Integration & Technology Distribution AG - Austria. The company has continuously developed from its initial stage as an ICT distributor, making rapid progress towards achieving the corporation's goal of expanding its leading position in the provision of ICT consulting, solutions and services in Central and Eastern Europe and the German-speaking countries region . AS&ICT Romania is a major system integrator on a highly competitive market. The company offers a wide range of ICT consulting services, develops and implements customized solutions and provides customers with non-stop assistance.

AS&ICT has a vast portfolio of value-added ICT services that includes: consulting, customer training, installation and maintenance, warranty and post-warranty services, project management, training and professional support in related areas, such as networking and systems operation.

Also, AS&ICT Romania is a near shoring center that responds to the requests received from ICT markets in Europe. The company offers software development services, project management and related consulting services. Carefully chosen and

implemented IT solutions respond to dynamic changes in the business environment. AS&ICT Romania has proven its competence in providing such ICT solutions and can be the right partner that can help you quickly be present on the market so as to obtain superior results.

AS&ICT Romania S.R.L. is a commercial company with limited liability, with fully private capital, it was established and operates in accordance with Law no. 31/1990 on commercial companies, with subsequent amendments and additions, being registered at the Bucharest Trade Registry. AS&ICT Romania S.R.L. was established in 1994, having private capital fully subscribed and paid by the following associates:

1. AS&ICT AG, Austrian legal entity, with registered office in Austria, representing 41% of the share capital.
2. Computers BeLting ICT Company GMBH, Austrian legal entity, with registered office in Austria, representing 59% of the share capital.

AS&ICT Romania S.R.L. is organized, operates and carries out its activity in accordance with the legislation in force in Romania, with the Constitutive Act of the Company, with the Decisions of the General Meeting of Associates and the Decisions of the Company's Administrators. The company's activity is organized by department, according to the Organization Chart approved by the General Director/ Company Administrators. The object of the company's activity is that stipulated in the Company's Constitutive Act, the main field of activity is "consulting activities in information technology" - Caen code 620, the main activity being Code CAEN 6202 - Consulting activities in information technology. The purpose of the activities and the range of products provided have evolved with the development of the company, AS&ICT Romania having the ability to offer appropriate distribution, consultancy and technical support services.

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With a team of 240 specialists, with skills and new business verticals developed through recent acquisitions (Fair Value - 2018, Kapsch CarrierCom Romania - 2019, Cronus eBusiness - 2020), AS&ICT Romania ranks third in the list of local IT integrators made by Finance newspaper.

AS&ICT believes that a successful company must combine an active presence in the technical and professional field with social and cultural activities. For these reasons, AS&ICT Romania is involved in supporting various activities in fields such as science, culture, education and public health

The company's main objective is to help its customers improve their business performance by implementing and effectively using the most advanced IT solutions.

5. The microenvironment of the company

In order to deliver innovative, solid and safe solutions, AS&ICT realized from the beginning the importance of long-term partnerships with the most important suppliers of information technology, communication services and software applications-

Improving the certification portfolio is absolutely necessary for AS&ICT Romania. Competences on multiple brands of products and services, as well as the ability to integrate a wide range of solutions from different suppliers, to combine them and turn them into successful projects, are the basis of AS&ICT's strategy.

Some of the technological partnerships of AS&ICT company are: DELL EMC, CISCO, ORACLE, STARS, VM WARE, FUJITSU, HP, FORTI NET, CIBER ARK, FORCE POINT, PALO ALTO, LENOVO, MICROSOFT, SAP etc.

Essential Customers of AS&ICT company are as follows:

The Ministry of Transport and the City Hall of the Capital together with AS&ICT Romania implemented, together with STB and Metrorex, a new system whose long-term objective is to improve travel conditions (Bucharestians can travel with the same ticket both on the metro and on public surface transport) .

Implementation of the BIG DATA IT system at the Competition Council. Integrated in the project "Optimizing the interaction with the business environment and implementing advanced mechanisms of analysis and data exchange by implementing an IT system of e-government and Big Data analysis within the Competition Council", the project completed by AS&ICT Romania represents the implementation of a parts of the internal business flows of the Competition Council that are essential as data sources for the operation of the Big Data platform. The computerization and integration services of these flows contribute to the completion of the data sources needed for the Big Data project with the data processed in the work flows, transferring structured and unstructured data in an electronic environment that are not yet consolidated at the level of the institution.

The State Inspectorate for Road Transport Control together with AS&ICT Romania have implemented the "Integrated Information System (SII)". The project has as its general objective the creation and operationalization of a modern, safe and efficient framework for carrying out the activity of the ISCTR through the implementation of an integrated IT solution, which will support the control activity carried out by the ISCTR according to the legal provisions in force. This objective will be achieved by putting into operation the Integrated Information System (SII), used by the ISCTR staff to carry out current activities and carried out by AS&ICT Romania.

AS&ICT's clients include: SC OMV Petrom SA (Petrom), Loteria Română, H&M Romania, Hervis Sports Romania, Michelin Romania, Daimler Romania, ALSTOM Romania, the Ministry of Education, the National Printing Office, BAYER Romania.

Among AS&ICT's main competitors in the local market were TotalSoft, IBM, Star Storage, Ness Technologies and HP.

6. The international macro-environment

a) Political Environment

In an extremely difficult economic context, dominated by the coronavirus pandemic, the AS&ICT AG group successfully completed the first six months of 2020. AS&ICT impresses with very good results, continuing the growth curve, with revenues of EUR 268.6 million, with 8% more compared to the same period of 2019. In the second quarter, the EBITDA value increased to EUR 27.0 million (2019: EUR 23.2 million), also the operating cash flow reached 38.9 EUR million, EUR 11.7 million more than the previous year. All this positions AS&ICT as the winner in the face of the crisis caused by the new coronavirus.

Whether we are talking about video conferencing systems, workstations for home offices or critical infrastructure for data centers, technology providers are very active at this time offering solutions and services to deal with the crisis and minimize its impact. AS&ICT has always been and remains with its customers and has all the resources to respond promptly and adequately to the increased number of requests. Thanks to its solid position, AS&ICT also pays attention to current procurement opportunities so that, in July 2020, AS&ICT has expanded the portfolio of products and skills through the strategic acquisitions of Iskratel and CITYCOMP.

And at the local level, AS&ICT Romania, 100% owned by AS&ICT AG, recorded a turnover of EUR 19.4 million in mid-2020, up from 2019: EUR 19.1 million.

Hannes Niederhauser, CEO: "Despite the current crisis, our outlook is positive. We have played our cards well during this period, we are performing in various sectors and therefore we consider ourselves victorious in the face of the coronavirus crisis. I look forward to continuing with other successful acquisitions in the coming quarters. There is no doubt that we will achieve our 2020 target of €1,150 million in revenue with €115 million in EBITDA and we are maintaining our plan to reach €2 billion in revenue with €220 million in EBITDA in 2023."

b) Economic Environment:

Financial results S2-2021

* The company reports significant increases compared to the first semester of 2020, which in the context of the pandemic represented a spectacular growth for AS&ICT Romania.

* Turnover increased by 8% and net profit increased by 72% compared to the same period last year.

* Operational cash flow was improved by over 100%.

* Last year, AS&ICT Romania acquired 2 local companies, the investment value being 12 million euros, the financing being 50% from own sources and 50% from sources within the group.

* By the end of 2021, AS&ICT Romania plans to acquire a local company that will complete the portfolio.

The AS&ICT Romania technology company, part of the AS&ICT AG group (ISIN: AT0000A0E9W5, WKN: A0X9EJ, Stock Exchange symbol: SANT) and one of the largest integrators of IT&C solutions on the local market, closes the first half of 2021 with outstanding results, turnover increased by 8% compared to the same period last year, with an estimated increase of 35% by the end of 2021. Net profit increased by more than 100%, with an estimated increase of 397.5 % until the end of the year. And in terms of the number of employees, the company has registered a spectacular growth, from 183 people in 2020 to approximately 280 people in 2021.

"The investments made in 2019 and 2020 through which the company acquired 2 local companies, namely Cronus eBusiness and Kapsch CarrierCom, are starting to mature. The IT&C industry experienced an effervescent period starting last year, and the financial results of AS&ICT Romania prove that the business direction assumed last year was consistent with the opportunities offered by this context.

This is an excellent signal for our company, which encourages us to go in the same direction, with the plan to acquire a local company to complete our portfolio by the end of 2021." said the company's CEO in an interview for the company's internal newspaper.

Moreover, the figures recorded at the group level are also impressive. AS&ICT AG ends the first half of 2021 with an increase of 11.5%, to 600.6 million euros (compared to 538.7 million euros in the previous year), and EBITDA increasing by 12.2%, to 58.3 million euros (compared to 52.0 million in the previous year). Despite the chip crisis, gross margin of 38.8% is almost at the same level as last year, and earnings per share (undiluted) increased by 6.7% to 0.32 euros (compared to 0.30 euros last year).

A particularly good sign for the AS&ICT Group is the significant increase in orders in progress to €1.137 million as of June 30, 2021, from €927 million as of December 31, 2020. New orders were recorded, worth a total of 406 million euros, only in the second quarter of the year. The strong demand can be attributed to emerging industrial companies that are driving growth with IoT products, as well as global growth plans to accelerate the economic recovery imposed by the COVID-19 crisis.

The high demand for IoT solutions confirms that the AS&ICT Group is well positioned in the market and has excellent growth prospects. Without the current chip crisis, even stronger near-term growth would be possible. In the second quarter of the year, for example, orders worth 38.3 million euros could not be fulfilled or were postponed for the following months. AS&ICT is making sustained efforts to complete backorders in the near future and is investing in new supply chains and product adaptation.

"Revenue growth and the rapid acceleration of incoming orders in the first part of the year are a good starting point for the 12% growth we are targeting for 2021. The chip crisis we are currently facing somewhat diminishes these good prospects as it delays deliveries and slows even stronger growth, which the very good order situation predicted. Even so, we reached our targets for 2021, namely a revenue of 1,400 million euros, with EBITDA of 140 million euros. We also reconfirm that our medium-term objective is to achieve a revenue of 2 billion euros in 2023, with EBITDA of at least 220 million euros." said the CEO of the AS&ICT AG group.

According to Profit.ro: "The local subsidiary of the Austrian group AS&ICT, one of the largest integrators of IT&C solutions, last year recorded a turnover of 217.7 million lei, up 2.1% compared to 2019, and the net profit reached 917,607 lei, from a minus of 211,180 lei a year ago. The company last recorded a net profit

in 2015. Receivables increased from 72.1 million lei to 75.3 million lei, and total liabilities rose by 45 million lei to 145.04 million lei."

"AS&ICT Romania continued in 2021 the upward trend started three years ago, both through organic growth and through completed acquisitions, being one of the largest IT integrators in Romania. I could say that we are starting to reach our true potential company. The company's turnover has grown in the last three years more than the IT market in Romania, which, according to recent data, registered an advance of 1.3% annually. The net profit rose by over 100% in the first part of the year and I anticipate that the advance of this indicator will approach 400% for the whole year 2021. The company ended the previous year with a profit that exceeds the objectives and with a turnover about 50% higher than that of 2020".

c) Ecological Environment

Environmental pollution began to make its presence felt with the start of the industrial revolution in the 19th century and since then it has continued to grow, becoming a real public health problem nowadays. Pollution occurs when the natural environment cannot destroy an element that has reached the air, soil or water in an unnatural way. The destruction process can vary from a few days to thousands of years, depending on the nature of the pollution.

AS&ICT Romania has implemented a waste management plan. This is aimed at reducing the waste generated by the company.

d) Socio-cultural environment

In 2021 AS&ICT Romania put Bucharest on the short list of cities with modern public transport services, by implementing payment solutions that use state-of-the-art validators, at Metrorex and STB, thus AS&ICT Romania was awarded the prize in the ePayments category in during the Annual Gala of the FINANCE Awards.

The e-FINANCE Awards Gala is organized by Finmedia and is in its 18th edition. Annually, within this gala, the most innovative and complex projects from the previous year in the IT&C and financial-banking sectors are recognized.

e) Technological Environment

AS&ICT Romania is an integrator of ICT solutions, it ensures the implementation of technological innovations and the latest developments in the field to its customers.

7. Case study regarding the implementation of ICT solutions in the management of the customer service department

AS&ICT has a customer-oriented policy to be able to respond to all customer requirements in an efficient manner by repairing or replacing equipment that is defective, damaged or in poor working order.

At the moment AS&ICT covers the whole country through the service center in Bucharest and in the country, being able to ensure a resolution time of up to 4 hours.

Within the support organization, the specific processes of the activity are very well defined and controlled, such as: handling and qualification of hardware and software calls, software assistance by phone, remote assistance, on-site interventions of a preventive nature (maintenance) or corrective (defect fixing), spare parts logistics, escalation of more difficult issues, contracting and training.

The stock of spare parts dedicated to equipment support is located both in Bucharest and at service partners in the country.

In order to be able to respect its call intervention commitment to the customer, AS&ICT will maintain an inventory of critical components. These components are stored at the AS&ICT headquarters. They are managed in such a way that their continuous availability can be ensured and they are always accessible to the specialists who ensure the support of the client for the necessary interventions.

AS&ICT Romania has a team dedicated to answering calls received by phone, email or fax. The Call Center is a structure that concentrates support resources and uses the accumulated experience to amplify the value of the support team.

The Call Center acts as an "extinguishing" center for all support calls, ensuring the correct sequence of support actions to solve problems in the shortest possible time.

The support organization of AS&ICT Romania includes qualified personnel, with extensive experience, certified by the manufacturer, for all delivered equipment, for the entire duration of the warranty/post-warranty contract. AS&ICT's support engineers are graduates of specialized automation or electronics faculties, regularly trained in the training centers of major international suppliers such as Hewlett-Packard, IBM, EMC, Dell, CISCO, Fujitsu, etc. and possess the latest technologies for support such as hardware and software diagnostic methods, the possibility of remote diagnosis via modem, online connections with expert centers in Europe. All support engineers benefit from a car and mobile phone to ensure the highest on-site interventions level. Customer feedback and references place AS&ICT Romania among the most respected service organizations in Romania.

AS&ICT works closely with selected strategic partners, for whom AS&ICT is also a key partner and who, like AS&ICT, are prepared to invest significantly in the successful development of the partnership. Some of the current strategic

partners of AS&ICT are international brands like Dell Technologies, HPE, SAP, Microsoft, Oracle, Cisco, VMWare etc.

AS&ICT develops individual solutions for its customers based on recognized and tested technologies from these partners. This gives customers security and compliance with global standards (as opposed to proprietary systems) as well as the ability to use only the latest technology at all times.

Certifications bring valuable and measurable rewards to an organization. As an integrator, it is very important to demonstrate the ability to manage a wide range of solutions and products from different suppliers, integrate and implement them into successful projects. For AS&ICT Romania, continuous improvement of the certification portfolio is a must.

The company's active partnerships:

- Check Point 3 Stars Partner
- CISCO Gold Partner
- Cynet Silver Partner
- Dell Technologies Titanium Partner
- Forcepoint Platinum Partner
- Fujitsu Partner
- HP Inc. Silver Partner
- HPE Gold Partner
- Lenovo Partner
- Microsoft Gold Partner
- Oracle Partner
- SAP Gold Partner
- Symantec Corporate Reseller
- Veeam Gold Partner

Veeam Software is a privately held technology company that develops backup, disaster recovery and virtualization management software for VMware and Hyper-V virtual environments. AS&ICT Romania is an authorized Veeam Software partner.

- VMware Advanced Partner

AS&ICT Romania's Infrastructure Team provides operational support services 24 hours a day, with the help of highly qualified engineers who have been working in the operational field for many years. The Service Desk team is available to our customers every day of the year, 24 hours a day.

WHAT THE COMPANY OFFERS IN THE FIELD OF OPERATION

- complete performance of on-site or remote operational tasks

- 24/7 monitoring of network infrastructure, security systems, data center systems and applications

- monitoring and proactive services
- automatic monitoring of the life cycle of IT resources
- ensuring the security and availability of IT systems

WHAT THE COMPANY OFFERS IN THE FIELD OF OPERATIONAL SUPPORT

- support for devices and processes operated by the client
- a single point of connection for customers, available 24 hours a day
- immediate start of troubleshooting at the time of notification

WHAT THE COMPANY OFFERS IN THE FIELD OF MAINTENANCE MANAGEMENT

- continuous monitoring of quality and quantity parameters in the provision of the service

- incident, problem and change management based on ITIL
- drawing up technical and maintenance reports
- periodic maintenance analysis consultations
- continuous maintenance development

AS&ICT is a team of professionals with many years of experience, who can ensure the trouble-free operation of the entire IT system at your disposal, both in terms of commercial and technical aspects. The required service level is always ensured through ITIL-based processes. Our management solutions can be integrated into your existing operational environment without any difficulty. Due to our broad customer base, we can provide our services in a cost-effective manner, taking advantage of economies of scale. (Wided, R., 2023)

Example of project implementation at the national level

After the award of the contract follows the planning regarding the implementation of the requirements of the contract:

1. Discussions and planning of the transport of materials needed in the implementation of the project with the logistics department:

- a) Equipment storage
- b) The assigned locations and equipment
- c) Necessary time allocated to the transport of the equipment
- d) The contact persons in the respective locations

2. Project implementation planning:

- a) Establishing the installation calendar on locations
- b) Elaboration of procedures for the installation and configuration of equipment

c) Training of staff and partners involved in implementation

3. Implementation of the project:

a) Installation and configuration of equipment

b) User training

c) Elaboration of the necessary approvals and guarantee certificates

4. Maintenance and performance of the guarantees established by the contract.

5. Post-warranty period.

Example of ticket collection and intervention

- Receiving and registering the request by the Service Desk department and assigning a unique registration number.

- Contacting the applicant to establish the need for materials/equipment according to the reported problem

- Establishing the area and the team that will carry out the intervention

- Informing the logistics department for the preparation and delivery of the equipment/materials necessary for the intervention.

- Going to the location and solving the request

- Completing the intervention report

- Closing the ticket in the ticket platform

- Return of materials/equipment used during the intervention.

Conclusion and proposal

During this work, I followed the evolution of an ICT company both on the national and international market, the trends and trending of this field.

Innovation is the thing that maintains competitiveness and challenges in the field, something that puts a lot of pressure on the management of companies, management that must deliver optimal and quality solutions to business partners.

The implementation of new ticket management ICT systems aims at improving some work parameters, streamlining customer relations, and reducing resource losses. These parameters should be carefully monitored long after implementation to ensure that the desired change has occurred and that the investment has been worth the effort.

The question remains the same: how come the Romanian ICT industry mostly remains at the stage of ICT service provider when it could evolve towards the status of a software creator where the added value and profit margin is much higher.

The fact that in Romania we have more and more specialists in the field of IT, management, must guide this resource towards the creation of software, automation and research.

This seems to be the new trend of the software industry which grew by 10% compared to 2019, surpassing the threshold of 8.3 billion euros in 2020. Over 27 thousand software companies were active in Romania in 2020. Pandemic remaining one of the engines of development of the software industry.

The case study carried out was carried out within the employing company, in the customer service department. In order to be able to streamline the process and reduce intervention time, I believe that the ticket application should require optimizations, and its structure should be customized according to the needs of each customer. A first step in reducing the time allocated to the preparation of the intervention, is the correlation of the stock and the need of parts in real time.

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