



Radar Screen 2016

2015 was not the happiest of years, and will probably be remembered for the confronting issues related to embargo, financial debt, refugees and terrorism, which dominated the European agenda. We are hopeful that the worst is behind us, and that the 2016 radar screen will show a positive picture.

IT STAR carried its business as usual. Its publications were appreciated by many, judging by the feedback and visitors at http://starbus.org. The 9th IT STAR WS on *ICT Strategies and Applications*, 16 October 2015 in Warsaw, was successful and the interest in IT STAR's future activities remains high.

The 10th IT STAR WS on *IT Security* is already scheduled for October 2016 in Turin, Italy.

This is our last Newsletter issue for 2015 with contributions from

- Marc Bogdanowicz, Senior Scientist at IPTS Seville
- Martin Przewloka, Senior Vice-President of SAP SE, and
- Roberto Bellini, Vice-President of AICA

We take this opportunity to thank our readers for being with us for the Journey and to convey our Season's Greetings and Best Wishes for 2016.

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In this festive period of reassessment, resolve and expectations we wish our readership all the best for a

MERRY CHRISTMAS AND A HAPPY 2016!

The IT STAR NL Team

Partner Publication



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EDITORIAL POLICY

This Newsletter maintains a world-class standard in providing researched material on ICT and Information Society activities from the perspective of Central, Eastern and Southern Europe (CESE) within a global context. It facilitates the information and communication flow within the region and internationally by supporting a recognized platform and networking media and thus enhancing the visibility and activities of the IT STAR Association.

The stakeholders whose interests this newspaper is addressing are

- IT STAR member societies and members
- ICT professionals, practitioners and institutions across the broad range of activities related to ICTs in government, business, academia and the public sector in general
- International organizations

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Special arrangements for the production and circula-tion of the Newsletter could be negotiated.

The newsletter is circulated to leading CESE ICT societies and professionals, as well as to other societies and IT professionals internationally. Everyone interested in CESE developments and working in the ICT field is welcome to contribute with original material. Proposals for articles and material for the Newsletter should be sent two months before the publication date to info@starbus.org.

The Innovation Radar: high potential innovations and key innovators in FP7, CIP and H2020

Marc Bogdanowicz



Marc Bogdanowicz is Senior Scientist at the IS Unit of the Institute for Prospective Technological Studies (European Commission, Directorate-General JRC) in Seville, Spain.

The JRC-IPTS is running a research project on European Innovation Policies for the Digital Shift (EURIPIDIS), jointly with DG CONNECT of the European Commission. EURIPIDIS aims to improve understanding of innovation in the ICT sector and of ICT-enabled innovation in the rest of the economy, in the context of the Digital Single Market for Europe and of the ICT priority of Horizon 2020. It focuses on the improvement of the transfer of best research ideas to the market.

Among the initiatives taken jointly by the JRC-IPTS and CNECT is the Innovation Radar (IR), which has been strongly diffused at the ICT 2015 Innovate, Connect, Transform days on 20-22 October in Lisbon.

The Innovation Radar (IR) focuses on the identification of high potential innovations and key innovators in FP7, CIP and H2020 projects. In addition, the IR supports the innovators by suggesting a range of targeted actions that can assist them in fulfilling their potential in the market place. Until today, the Innovation Radar Methodology was applied to 279 ICT FP7/CIP projects or 10.6% of all ICT FP7/CIP projects. The results presented below relate only to those projects.

The IR can become a tool for monitoring the progress of innovations and innovators and for assessing the effective-

ness of policy for innovations and innovators. As such, it could be extended to the entire FP7 and, at a later stage, to the H2020 programme.

Innovations in ICT FP7/CIP projects

ICT FP7/CIP projects deliver a substantial number of innovations. On average, there are nearly two new or substantially improved products or services developed within each ICT FP7/CIP project. However, further nurturing is needed to bring them to the market and exploit their commercial potential. This can be achieved by addressing the shortcomings of the innovations and/or the needs of the innovators that are vital to deliver these innovations to the market.

Most of the innovations are related to data processing or software development whereas only a few of them are related to hardware development.

Market potential and innovation readiness are among the strongest dimensions of the ICT FP7/CIP innovations, while innovation management has the most room for improvement. Hence, to increase the potential of innovations, project organizations may need to clarify the issues of innovation ownership, prepare business plans and market studies or secure investment for further development and commercialisation of the innovative outputs.

63% of High Potential Innovations belong to projects that are in their final stages. Thus, new ideas and technologies that are developed during EU-financed projects mature and increase their potential as projects advance.

In general, many of these innovations are likely to be introduced to the market within a short period of time. Nearly 70% of all innovations are brought onto the market within 2 years. Commercial exploitation is planned for over 61% of all innovations and all High Potential Innovations. Currently, 10% of all innovations are already being exploited, either on the market or internally by a partner organization. Moreover, 55% of the innovations developed or being exploited are either new products or significantly improved



The IR builds fundamentally upon two composite indicators, assessing respectively the Innovation's potential and the Innovator's capacity (see schemes).

products. However, 25% of the already mature innovations are not being exploited yet. This includes 50% of the High Potential Innovations.

As a result of the project structure, ownership of innovations is dispersed. 61% of all innovations have multiple owners. The question is what implications this has for further innovation commercialization.

Innovators in ICT FP7/CIP projects

Innovations produced within ICT FP7/CIP projects are a result of collaborative work. On average, there are 1.23 innovators per innovation. In addition, innovators profit from an innovation-favourable environment. However, the quality of the innovation environment is not equal for all innovators. The reason for this may be that some projects do not engage end-users in the consortium or that the relevant partners are not committed to exploiting the innovation.

SMEs feature prominently in delivering high potential innovations. 41% of all organizations behind high potential innovations are SMEs. This is nearly threefold the SMEs' share in ICT FP7 participation, i.e. SMEs accounted in FP7 for 16% of total participations and 14% of total EC funding. Hence, it can be assumed that SMEs are important vehicles for co-creating and commercialising innovative technologies developed within ICT PF7 projects.

There is a strong geographic concentration of innovators. Germany, Spain and the UK are the countries with the most organizations identified as key players in delivering innovations. Although 291 cities host organizations that have been identified as key organizations in delivering innovations, only 24 cities host 4 or more innovators. Cities with the highest number of organizations include Barcelona, which hosts 19 innovators, and London and Paris, both of which host 17 organizations.

There is a positive relationship between an innovator's capacity score and innovation potential. However, a high score in one indicator does not automatically translate into high performance in the other. Often, High Capacity Innovators participate in delivering Low or Medium Potential Innovations and Low Capacity Innovators were identified as key organizations in developing High Potential Innovations. Improving the overall performance of the innovative output requires focusing on both innovations and the organizations behind them.

Steps and barriers to innovation commercialisation

When taking innovations to the market, projects tend to focus on technology-related steps over business-related ones. For example, 53% of the projects that plan to commercialise their innovations either created, or plan to create, a prototype. In contrast, only 30% of projects have carried out or plan to carry out a market study. Business plan is on the agenda of 27% of projects that plan innovation commercialisation. Hence, in order to increase the chances of successful commercialisation of an innovative output, projects must take into account more than the technological aspects and introduce business-related elements into their organizations' activities.

Activities that involve interactions with actors outside of the projects are relatively uncommon. For example, only 5% to 6% of the projects have sought or are planning to seek private or public funding. At the same time, one of the most common needs of key organizations trying to deliver innovations is partnership with other companies. This creates a demand for opening-up projects to more interactions with external specialised actors, e.g. business coaches or venture capitalists, which could help to improve the commercialisation chances of innovations.

Financing is seen as the major external bottleneck to innovation exploitation. 41.9% of project partners see lack of finance as a barrier to exploiting their innovative products or services. However, there seems to be a contradiction between what they claim to be a barrier and their actual behaviour; i.e. only between 5% and 6% of the projects have sought or are planning to seek private or public funding. Moreover, between 25% and 30% of the projects do not plan to seek capital or public investment. On the other hand, organizations claim that their primary needs to fulfil their innovations' market potential is partnerships with other companies and expanding to more markets.

A recent report of the JRC-IPTS describes the methods and first findings of the Innovation Radar since its launch in May 2014. It is available at: http://publications.jrc. ec.europa.eu/repository/bitstream/JRC96339/jrc96339.pdf, as well as from the homepage of the EURIPIDIS project http://is.jrc.ec.europa.eu/pages/ISG/EURIPIDIS/EURIPI-DIS.index.html

<u>Glossary</u>

High Capacity Innovator: Innovators with ICI score with at least one standard deviation above the average ICI score.

High Potential Innovation: Innovations with IPI score with at least one standard deviation above the average IPI score.

IAI (Innovator's Ability Indicator): A composite indicator used in the innovator capacity assessment focusing on the innovation performance of an individual organization that is seen as the key organization behind an innovation.

ICI (Innovator Capacity Indicator): A composite indicator used in the innovator capacity assessment.

IEI (Innovator's Environment Indicator): A composite indicator used in the innovator capacity assessment focusing on the composition and activity of an inventor's partner organizations, the performance of the project in terms of innovation and the commitment of relevant partners to exploit the innovation.

IMI (Innovation Management Indicator): A composite indicator used in the innovation potential assessment focusing on the capability of the management team to execute steps necessary to transform a novel technology or research results into a marketable products and, finally, to prepare its commercialisation.

Innovation Radar Questionnaire: A questionnaire developed by **DG Connect** / **JRC-IPTS** to identify and analyse innovations in FP7, CIP and H2020 projects.

IPI (*Innovation Potential Indicator*): A composite indicator aggregating the three indicators, i.e. MPI, IRI and IMI, used in the innovation potential assessment.

IRI (Innovation Readiness Indicator): A composite indicator used in the innovation potential assessment focusing on the technical maturity of an evolving innovation. *Low Capacity Innovator*: Innovators with ICI score with at least one standard deviation below the average ICI score.

Low Potential Innovation: Innovations with IPI score with at least one standard deviation below the average IPI score.

Market Potential Indicator (MPI): A composite indicator used in the innovation potential assessment focusing on the demand and supply side of an innovation.

Medium Capacity Innovator: Innovators with ICI score within one standard deviation of the average ICI score.

Medium Potential Innovation: Innovations with IPI score within one standard deviation of the average IPI score.

From Smart Items to successful business models – value-adding applications with the Internet of Things

Martin Przewloka



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of Showroom & Trial Solutions as part of SAP Marketing. He was responsible for several SAP industry solutions as well as for SAP ERP, the SAP flagship product. Martin is based at the SAP headquarters in Walldorf/Germany.

Introduction

There is hardly anyone who still doubts: the Internet of Things (IoT) will change our lives radically. In this context, we are bombarded with countless trends and concepts, such as Industry 4.0 or Advanced Manufacturing, Tele-Medicine, Cyber Physical Systems, etc. And moreover, everything becomes smart: Smart Items, Smart Grids, Smart Buildings, just to name a few. Technology is advancing rapidly and seems to know no bounds, but why do we see so few disruptive innovations that really change the things? Why is it so hard to establish new applications and business models and what we must do to achieve this?

This article certainly does not give complete answers and solutions to the above questions, but it can at least be attempted to present ways in which the creativity and innovative capacity of humans can be used systematically, efficiently and sustainably to create there from value-adding solutions. Specifically, paths are presented how new application areas were developed faster and how they can be successfully brought to the market. Using concrete examples and projects, the methods and experience of SAP, as a global industrial company, are described to develop new market segments in the Internet of Things. Attention is paid both to technological aspects as well as to new types of business models in the next generation Internet.

Technological trends and fundamental building blocks for smart solutions

It is just a few years back that we have spoken of 4 major drivers that will shape the Future Internet: (mobile) connectivity, the use of large amounts of data (Big Data), the Cloud and the relevance of Social Media. More precisely, today we can talk about 5 technology trends that have converged into the so called digital economy: hyper connectivity, super-computing, cloud computing, a smarter world based on outcomes and cyber-security. And the first results of the associated opportunities, changing the world's economic disruptive, are omnipresent. For example, while we have tried in recent years to standardize products more and more with the aim to make mass production highly efficient, we will now be able again to individualize products fulfilling concrete needs of consumers. And moreover, instead of bringing the people to work, we now can bring more and more work to the place where people actually stay.

New leaders are emerging from nowhere: The automotive industry is being disrupted by Google, Tesla and Apple while software is replacing hardware in connected and self-driving cars. Uber is not just another taxi enterprise, it is transforming into an urban logistics company with an incredible amount of drivers, today already roughly double the size of the UPS delivery workforce. Last but not least, Airbnb is not just a hospitality agency, the vision is to live in a world where one day you can feel like you're home anywhere.

Everything has one thing in common: today's IT not only allows these massive business transformations, each of these businesses have itself become a technology business.

What are now the key factors to bring such transformations to life?

1) Service Transformation

Starting with the probably most important key factor, Service Transformation stands for the value-oriented, effective and smooth delivery of services along the global Service Delivery Supply Chain. Service Transformation presupposes that the services taking into account the economic, operational and legal requirements are described, maintained, extended and - where it will be necessary - combined. Furthermore, a uniform notation and communication protocol is used.

In examples spoken, this means instead of a drilling machine the execution of a borehole will be marketed, instead of an aircraft engine, the operation duration of the power turbine and instead of selling simple food enjoyment, well-being and health will be put on the market.

See Figure 1.

2) (Big) Data

The Internet of Things connects people, machines and all sorts of things (such as things of everyday life, or simply sensors) to instantaneously exchange data and information and to enable real-time decisions. The amount of data and connected devices increases exponentially and brings already the performance of today's computers and storage devices to their limits. Ideally, data is structured at the source of information, but majority of data is unstructured, such as data from social media networks or from video sources. It is essential to combine the data from different sources so that they can be processed efficiently, but equally essential to ensure the correctness of data and to fulfill the requirements for data security and data privacy. A secure and highly scalable data cloud makes it possible to meet these requirements as demonstrated by SAP and others.

See Figure 2.

3) Analytics

The task now is to analyze the data obtained to suit the needs for automated, partially automated or manual decision making. In today's hyperconnected world it's key to be able to make fast or even real-time decisions. Moreover, intelligent algorithms have to put ourselves in a position not only to understand the status quo or to analyze it, they must help us to 'think ahead', such as to create forecasts or to make recommendations for future actions. The added value of future businesses will therefore be based on the ability of analytical systems.

See Figure 3.

4) Infrastructure

As a consequence, solutions have to be offered on a consistent, secure and highly scalable infrastructure - let's name this platform simply 'Business Web'. This barrier-free plat-



form must enable everyone to provide all (digitized) services, regardless of whether these services are chargeable or free of charge. Administrative and backend functions such as automated payment will be provided through the Business Web as well.

Only through a unified platform it will be possible leaving the existing established business area or market. It will not only be possible to create new business ideas but also to form and to leverage new partnerships along and beyond the existing supply chain.

See Figure 4.

5) Automation

As a further consequence, future business processes are becoming more and more automated. This is exactly what is a fundamental property of smart items or smart devices. Monitoring tasks are carried out as far as possible independently as well as the control and change of conditions (e.g. configuration changes). Algorithms form the basis for an automated and self-control of processes while the man uses his instrumental cognitive abilities in the case of critical decisions or for the development and the design of future solutions.









Figure 5: Smart items lead to an automation of Business Processes

The previous 5 prominent key factors form the basis for the development and successful launch of value-generating solutions in the Internet of the future. The following three use cases now show the interaction of these components. Similarly illustrate these use cases which fundamental questions arise immediately adjacent to a technical implementation. These use cases were all implemented by SAP and delivered to customers as a first step to transform their business.

Predictive Maintenance

Asset-intensive industries such as manufacturing industries depend heavily on their equipment. As a consequence, they have to spend billions year over year to maintain and repair these assets. More concretely, investigation of causes of aircraft delays has shown that airline-controlled processes, such as maintenance, ground handling, and supply chain, are according to Infotrust (2012) with 42% the leading cause of late flights. Every minute that a multimillion dollar asset isn't functioning is critical and directly impacts profitability. In addition, there can be a massive damage caused by loss of trust on the customer side.

Using an integrated, secure and high-scalable IoT-platform, operational data, defect data, sensor data, maintenance program data, quality data, etc. can be combined and then leverage predictive analysis tools as well as visualization tools. By doing so, there are three levels that are the fundamental parts of an end-to-end IoT-enabled solution for predictive maintenance: First, remotely sense operational data from equipment, second, analyze and monitor equipment data and correlate with business information to predict future malfunctions, and third, optimize maintenance and service operations and enable new business models around the equipment.

However, in this context, algorithms to predict maintenance efforts or even malfunctions can become very complex and require high-performance computing. Specific models to calculate the health status of a machine will not just be an integral part of future products and solutions, they will become a competitive advantage and a key differentiator of products and services to be sold.

See Figure 6.

Smart Vending

Today, most vending machine business runs defensively. This means that e.g. maintenance or refilling of goods is



executed completely independent of the actual situation. There is no transparency about the state of the machine unless you are in front of it or open it. Typical operating is periodic maintenance based on past experience - analogous is the replenishment of products (e.g. beverages, snacks or other food articles). Moreover, there is little transparency about the consumer behavior resulting in missed sales opportunities due to sold out items.

Using the inherent power of the Internet of Things by connecting the vending machines, it radically changes this type of business. Bringing together Big Data, a Cloud based platform, Analytics and Mobile Applications is not just to transform the maintenance and refilling processes, it creates a complete new retail experience for customers. By using personal customer accounts for example, near field communication or simple QR codes can be used to recognize a customer in real-time. By doing this, the machine can predict what products customers might like based on profile data or it makes personal promotions. On the other side, inventory of the machine can be monitored centrally, non-sellers replaced by best-selling products. Temperature can be controlled remote, technical defects can be detected immediately in order to subsequently initiate appropriate repair measures. Last but not least, payment of purchased goods will be done cashless and without credit cards by using pre-selected accounts. And it's just another easy step to link the purchases to individual social media profiles and to use this channel as a business accelerator as well.



Figure 7: Real-Time sales insights of IoT enabled Smart Vending Machines Source: SAP SE 2014

IoT in Sports and Entertainment

Technology has acquired a central role in professional sports. In this context mainly three different interest and user groups can be distinguished: players/teams, fans and marketing/sales. The spectrum of technology usage ranges from video information systems to complex measuring stations that provide the coaches and athletes with additional information about the movement execution. The rapid development of smart sensor units for recording and monitoring of bodily functions (e.g. wearables), location and environmental parameters coupled with an intelligent, real-time data processing unit becomes a competitive weapon to improve readiness, reliability, availability, and performance of athletes during training and competition. Moreover, mobile technology allows fans to closer engage or to experience the event at home even better than in person. Sponsors, Retailer, Broadcaster for example will be able by using data to better understand and identify fan base. This results into personalized engagement and marketing to grow sales and fan base before, during and after the event.

In the past, data was 'siloed' into purpose-build systems. For example, ticket sales, merchandising and selling of food and beverages during the event was handled in separate systems. A consistent view of fan, player/team and event/business did not exist.

Using the technologies of Big Data, a Cloud based platform, Analytics and Mobile Applications, this can become a game changer in Sports and Entertainment. First time ever it's possible to connect all objects on the field of play for example at a football stadium: the players, the ball, the seats, the ground, the spectators, and much more. Some of these objects contain embedded devices to deliver and receive data - some information is delivered by cameras and other external sensors. New solutions will not just improve the fan experience in and outside the stadium or increase player safety, it most likely has the potential to drastically change the way of how Sports and Entertainment will look like in the future.

Conclusion

In this article it was presented which fundamental building blocks require successful IoT solutions. On three specific use case, Predictive Maintenance, Smart Vending and IoT in Sports and Entertainment, all implemented and delivered to the market by SAP SE it was shown how it results in value-generating solutions. Nevertheless, in addition to the challenge of the technical realization – such as the handling of massive data amounts in sub-seconds - we need to think more about the future creation of new business models. Traditional models as we know it today will disappear and the digital business will lead to new actors entering and revolutionizing established markets. This is both an opportunity and a risk, but the economic principle of 'Time to Market' will gain an even greater importance as we know it today.

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Professional Development and ICT Training with e-CF*plus*

Roberto Bellini



Roberto Bellini is Vice-President of AICA and board member of AISM, the Association of Marketing Professionals.

e-CF*plus*, based upon the European e-Competence op digital skills. Firms and professionals find in e-CF*plus* a common language that defines skills and professional experiences, a shared structure that can grow individual skills and give a competitive advantage to businesses. e-CF*plus* allows businesses open to the globalized world to develop their computer teams' competences, and guarantee the consistency of digital skills and business goals.

Dimension 1	Dimension 2	Dimension 3
5 e-Comp. areas (A – E)	36 e-Competences identified	e-Competence proficiency levels e-1 to e-5, related to EQF levels 3-8 e-CF levels identified per competence
A. PLAN	A.1. IS and Business Strategy Alignment A.2. Service Level Management A.3. Business Plan Development A.4. Product or Project Planning A.5. Design Architecture A.6. Application Design A.7. Technology Watching A.8. Sustainable Development	
B. BUILD	B.1. Design and Development B.2. Systems Integration B.3. Testing B.4. Solution Deployment B.5. Documentation Production	
C. RUN	C.1. User Support C.2. Change Support C.3. Service Delivery C.4. Problem Management	
D. ENABLE	 D.1. Information Security Strategy Development D.2. ICT Quality Strategy Development D.3. Education and Training Provision D.4. Purchasing D.5. Sales Proposal Development D.6. Channel Management D.7. Sales Management D.8. Contract Management D.9. Personnel Development D.10. Information and Knowledge Management 	
E. MANAGE	E.1. Forecast Development E.2. Project and Portfolio Management E.3. Risk Management E.4. Relationship Management E.5. Process Improvement E.6. ICT Quality Management E.7. Business Change Management E.8. Information Security Management	

e-CF covers the entire field of managerial and technical ICT skills through brief descriptions of 40 skills, divided into several levels (2 to 4) according to a scale of 5 "qualifications" compatible with the European Qualification Framework (EQF). Each competence is accompanied by some examples of knowledge and skills that delineate their content.

Based on the e-CF skills, CEN has defined 23 "European ICT Professional Profiles", which outline some typical ICT roles in terms of mission, deliverables, key activities and KPI.

e-CFplus in detail

The European e-Competence Framework (e-CF) is a structured system of skills that describes high-level knowledge and skills required in the context of ICT processes of an organization. It is used by large, medium and micro enterprises and is supported by the European Union. In Italy it is supported by the Italian Government.

e-CF*plus* starts from the e-CF framework to detail in operational terms the professional digital skills, and offers tools to evaluate and develop them.

e-CF*plus* adds the value of detailed and structured knowledge and operational skills, provides well known methods and web tools to manage the assets of business skills in a simple and effective way. e-CF*plus* can also adapt and customize the entire system to the specific characteristics of the organization.

e-CFplus enriches the 40 e-CF skills with more than 2,200

building blocks grouped into 157 homogeneous sets of knowledge items and skills; these elementary components enrich the 23 CEN profiles, the 21 profiles provided by the AgID Guidelines and professional custom profiles that can be defined by each organization, with the possible methodological support of AICA.

e-CF*plus* is a modular, open and scalable system that defines the skills of an individual, a business unit, or corporate department, an entire organization.

At the center of the digital area e-CF*plus* has been conceived, written and reviewed by well-experienced ICT professionals and managers to ensure a vision that is complete, accurate and consistent with the best practices.

It capitalizes on the experience gained with EUCIP by the Council of European Professional Informatics Societies. It is aligned with CEPIS' and AICA professional certifications, as well as with other relevant frameworks such as ITIL® PMBOK® Guide and AgID Guidelines.

e-CF*plus* helps professionals understand their position in an organization, see where they can grow, and what they need to advance in their careers.

For organizations, e-CF*plus* helps ICT managers and Human Resources to identify and clearly define the professional development of their employees, and to plan effective training and development activities.

e-CFplus into practice

AICA's specialists, using e-CF*plus*, work together with companies to improve the results of their ICT teams, by aligning skills and competences with business objectives. We aim to enable companies to have the right people in the right place and the right time.

Competitive advantage by systematic skills development

We support public and private organizations in a broad spectrum of business issues, even of considerable complexity.

We can help companies improve their competitive advantage by fully exploiting their professional digital skills: from the selection of resources, analysis of skill gaps and talent management plans, up to complex change programs in which ICT is a key element of innovation.

A typical collaborative project for skills development is divided into four phases:

- · Understand the organization's requisites
- · Define a framework of needed skills and expertise
- Analyze the skills available and the relative gaps
- Implement effective development plans

damental systems skills of IT Administrator.

- e-CF*plus* is fully customizable to build the "standard" of any organization, be it public or private, supplier or user of computer systems.
- e-CF*plus* provides methods and web tools for evaluating one's skills, highlight gaps compared to the objectives, define effective plans for training and development.

e-Cfplus - the tools

e-CF*plus* provides well-known methods and web tools to manage the assets of individual and business skills in a simple and effective way, allowing to adapt and customize the entire system to each specific organization.

The main web tools provided to professionals and companies are the e-Competence Benchmark and e-Competence Management.

e-Competence Benchmark, provided by CEPIS, allows individual specialists to assess the level of their e-CF (v.3.0) skills and their position compared to 23 European ICT professional profiles defined by CEN. It is a simple and free system that provides a synthetic, indicative and standardized vision of individual skills - www.cepis.org/ecompetencebenchmark

> e-Competence Management, provided by AICA, is a system designed for enterprise use that provides a vision that is analytical and concise, accurate and customizable of the individual and organization skills; in particular it provides

(www.aicanet.it/ecfplus):

Standard individual reports;
Customized reports for individuals, departments, organizations,

Listen and understand	Define	Analyze	Implement
We listen to your business requirements to understand how to support you in achieving your goals	We identify the skills needed to develop your competitive advantage	After defining the necessary skills, we assess your resources to highlight gaps and areas of development	Once the skills picture is clear, you can invest to have the right people in the right place and at the right time

e-CFplus supports systematic skills development

e-CF*plus* is intended for public and private organizations, and it allows employers and professionals to measure skills, plan resources and develop effective performance using a shared international vocabulary for digital skills. It provides many benefits to specialists and organizations, and to those who work in recruitment or ICT training.

Why "plus"?

e-CF*plus* develops Dimension 4 of the e-CF. Instead of a few examples of knowledge and skills, it details for each competence a comprehensive and specific set of what you need to know and be able to do to master the skills in an advanced business context.

 e-CF*plus* integrates the experience gained from CEPIS and AICA with the EUCIP model and certifications. It incorporates the "body of knowledge" of the fundamental digital knowledge (e-CF*plus* Fundamental) and the fun-

- professional families,...;Integration with leading systems of human resources management;
- Analysis of individual and organizational gaps related to the 23 CEN profiles, the 21 EUCIP profiles, and the profiles and functions defined by the organization;
- Personalization of the standard model skills (elimination of irrelevant skills, adding specific business/sector expertise, ...)
- Methodological and operational support.

AICA (Associazione Italiana per l'Informatica ed il Calcolo Automatico)

AICA is the leading and most authoritative Italian association in the digital sector. AICA and CEPIS (Council of European Professional Informatics Societies) have collaborated on the development of e-CF. Through the network of its national partners and close international connections, AICA contributes to the development of professional skills and ICT training.

Conference Statement

IT STAR is pleased to release the following



Statement

based on the presentations and debate of the 9th IT STAR Workshop on ICT Strategies & Applications, 16 October 2015 in Warsaw, Poland

The digital scenario is driven by new forms of economic and social evolution based on wide diffusion of global communication networks, machine-to-machine environment, Big Data, Cloud platforms, knowledge sharing, open innovation and virtualization of exchange. The Internet of Things is changing our lives radically: we are exposed to countless trends and concepts, and everything – from smart items to smart cities – is turning smart. The digital transformation will be successfully managed if we no longer have to distinguish between real and virtual!

There is wide understanding that ICT is a driving force of development and governments have developed strategies and policies vis-à-vis the Digital Agenda for Europe. An analysis of the Information Society uptake in the IT STAR region, however, suggests that there are shortcomings related to their implementation and regular updating. Governments are called upon to keep their strategies up-to-date since failing to do that would lead to action-plans and solutions based on old approaches.

The level of digital competences in a country is an important indicator to its government:

- End user e-Skills are essential for individuals to integrate in society. In this regard, the European Computer Driving License (ECDL) as a *de facto* standard for end-user certification is successfully implemented in many countries. To fully participate in the growing digital society, however, it becomes increasingly important to have a better understanding of the basic principles of informatics, computational thinking, algorithms and coding at an early age.
- At the level of Practitioner and e-Leadership skills, the European e-Competence Framework (e-CF) is widely recognized as a tool for identification of competences for the purposes of planning and personal/ institutional development. Based on the e-CF, the e-CF*plus* system details in depth the operational terms to assess professional digital skills.

The IT STAR region continues to loose talented young ICT specialists to other world regions. It would be important for national governments and the European Commission to address the "brain-drain" issue so as to take action in ameliorating its effects.

Comprehensive statistical data on the European ICT Industry is essential for understanding the status and trends in the digital economy. The European Commission could also assume a more visible role in promoting ICT brands, products and services that are "Made in Europe".

The presentations and further details about the 9th IT STAR WS on ICT Strategies & Applications are available from the conference website - www.starbus.org/ws9.

New IT STAR book

Plamen Nedkov, Marek Holynski & Giulio Occhini (Editors)



ICT Strategies & Applications



The revised and edited proceedings of the 9th IT STAR Workshop on ICT Strategles & Applications, held on 16 October 2015 in Warsaw, Poland, are a follow-up of previous IT STAR events that investigate ICT policies, strategies and successful case-studies in Central, Eastern and Southern Europe.

The papers are based on the experience of leading personalities from government, industry and academia who influence the digital scenario within the Region and beyond.

Eds. P. Nedkov, M. Holynski & G. Occhini © IT STAR 2015, pp. 106, ISBN 978-88-98091-39-3

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Obituaries

We sadly announce the passing of Peter Bollerslev (Denmark) on 10 November 2015, and of Jan Wibe (Norway), on 4 December 2015.



Peter Bollerslev

We had the privilege to work closely with Peter during his terms as chairman of IFIP TC 3 on Education and as President of IFIP. Peter had the great talent for teamwork and reaching consensus. His attitude towards IFIP and life in general is well expressed in a short interview we did in 2002, also published in IT STAR's NL Vo.12, no.3, 2014.

Peter was a keen supporter of IT STAR's establishment and was one of its founding members at the inaugural meeting on 18 April 2001 in Portoroz, Slovenia.



Jan Wibe

We knew Jan first as chairman of IFIP's Working Group 3.6 on Distance Learning, and then as chairman of TC 3 on Education.

We worked closely with him on a variety of projects including World Computer Congress' 02 in Montreal, Canada. He was a member of our Newsletter's Advisory Board and we were blessed to have his support.

Jan was special to us in many ways, not least for his hobby to collect pebbles from places he visited around the World.

We join their families and friends in these mournful times.

Plamen Nedkov IT STAR Chief Executive and Newsletter Editor

Forthcoming IT STAR Events



2016

10th IT STAR Workshop on IT Security October 2016, Turin, Italy

2017

11th IT STAR Workshop, Bulgaria

Topic, dates and place to be communicated in due time.



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SNAPSHOT

REGIONAL ICT ASSOCIATION IN CENTRAL, EASTERN & SOUTHERN EUROPE

Type of organization

Regional non-governmental and non-profit professional association in the ICT field.

Date and place of establishment

18 April 2001, Portoroz, Slovenia

Membership

Countries represented (*see next page for societies*), year of accession, representatives

- Austria (2001) G. Kotsis, E. Mühlvenzl, R. Bieber
- Bulgaria (2003) K. Boyanov
- Croatia (2002) M. Frkovic
- Cyprus (2009) P. Masouras
- Czech Republic (2001) O. Stepankova, J. Stuller
- Greece (2003) S. Katsikas
- Hungary (2001) B. Domolki
- Italy (2001) G. Occhini
- Lithuania (2003) E. Telesius
- Macedonia (2003) P. Indovski
- Poland (2007) M. Holynski
- Romania (2003) V. Baltac
- Serbia (2003) G. Dukic
- Slovakia (2001) I. Privara, B. Rovan
- Slovenia (2001) N. Schlamberger

Mission

"To be the leading regional information and communication technology organization in Central, Eastern and Southern Europe which promotes, assists and increases the activities of its members and encourages and promotes regional and international cooperation for the benefit of its constituency, the region and the international ICT community."

Governance

IT STAR is governed according to the letter of its Charter by the Business Meeting of MS representatives:

- 2015 Warsaw, Poland (October)
- 2014 Szeged, Hungary (September)
- 2013 Bari, Italy (May)
- 2012 Bratislava, Slovakia (April)
- 2011 Portoroz, Slovenia (April)
- 2010 Zagreb, Croatia (November)
- 2009 Rome, Italy (November)
- 2008 Godollo, Hungary (November)

2007	Genzano di Roma, Italy (May)
	Timisoara, Romania (October)
2006	Ljubljana, Slovenia (May)
	Bratislava, Slovakia (November)
2005	Herceg Novi, Serbia & Montenegro (June)
	Vienna, Austria (November)
2004	Chioggia, Italy (May)
	Prague, the Czech Republic (October)
2003	Opatija, Croatia (June)
	Budapest, Hungary (October)
2002	Portoroz, Slovenia (April)
	Bratislava, Slovakia (November)
2001	Portoroz, Slovenia (April)
	Como, Italy (September)

Coordinators

2015 –	Marek Holynski
2010 - 2015	Igor Privara
2006 - 2010	Giulio Occhini
2003 - 2006	Niko Schlamberger
2001 - 2003	Plamen Nedkov (cur. Chief Executive)

Major Activities

- 9th IT STAR WS on ICT Strategies and Applications http://www.starbus.org/ws9
- 8th IT STAR WS on History of Computing http://www.starbus.org/ws8
- 7th IT STAR WS on eBusiness http://www.starbus.org/ws7
- 6th IT STAR WS on Digital Security http://www.starbus.org/ws6
- IPTS IT STAR Conference on R&D in EEMS http://eems.starbus.org
- 5th IT STAR WS and publication on Electronic Business - http://starbus.org/ws5/ws5.htm
- 4th IT STAR WS and publication on Skills Education and Certification - http://starbus.org/ws4/ws4.htm
- 3rd IT STAR WS and publication on National Information Society Experiences – NISE 08 http://www.starbus.org/ws3/ws3.htm
- 2nd IT STAR WS and publication on Universities and the ICT Industry
- http://www.starbus.org/ws2/ws2.htm
- 1st IT STAR WS and publication on R&D in ICT http://www.starbus.org/ws1/ws1.htm

Periodicals & Web-site

The IT STAR Newsletter (nl.starbus.org) published quarterly. www.itstar.eu

) N. Schlamberger

IT STAR Member Societies

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