

Introduction

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The *International Journal of Information Technology, Communications and Convergence (IJITCC)* published by Inderscience, which you are browsing and of which I have the honour to be the editor-in-chief, has always posed at the core of its objectives the participation to the technical and scientific debate on the information technology, communications and convergence. In the midst of the digital transformation era, and still before the so-called ‘media technologies convergence’ phase, the pages of *IJITCC* have been and are open to the scientific contributions of researchers from academia and industry, as well as practitioners, towards the aim of sharing ideas, problems and solutions related to the faceted aspects of information technologies, communications and convergence. *IJITCC* represents an open window on one of the most revolutionary events of the post-industrial history of the planet, today defined as ‘The Great Convergence’, and in particular, on the most original technical-scientific contributions of research and development of all the aspects of information technology, communications and convergence, including their models, services and new applications related to their usefulness.

The first editorial of the first issue of *IJITCC* (Park and Lee, 2010), edited by authoritative and influential colleagues, highlighted the fact that in the last two decades (1990–2010) the IT influenced and changed every aspect of our life and our cultures. They correctly foreseen that the technology, and not only, would have continued to play a major role in the convergence of information technologies, communications and all the other aspects of computer science and applications but, most of all, that the future impact of the informatics would have influenced the roadmap of many sectors including science, engineering, industry, economy, law, politics, culture, and medicine.

The forward-looking predictions turned out to be substantially correct, but they happened in a much shorter time and in an overwhelming, pressing, rapid, pervasive and massive way. This unpredictable acceleration, as well as the unexpected modalities, together with the constant need to monitor the purposes and the scientific rigor of the published articles, have not allowed an analogous rapid adaptation of the scopes of many journals which deal with the convergence in order to embed the topics and the directions of the scientific research which have been strongly connected and authoritatively engaged in the debate on the Great Convergence.

I have accepted the invitation to cover the role of the editor-in-chief of *IJITCC* as a scientific, academic and personal duty, as it should be, well aware of the enormous challenges which I would have encountered during the management of a new phase of the

journal in the middle of a scientific, technological, industrial and social revolution, and especially, in a historical moment where the same word ‘convergence’ gains each week a different meaning.

Initially, I have had to safeguard the work of the previous editor and editorial board, which I thank also publicly for all the work they have done and the results they reached before my appointment, by reserving, obviously, the deserved space and time to the scientific contributions received during the transition period and for the which I thank the authors of the articles you will find in this issue of *JITCC*.

With the publication of this issue, it should be concluded this transition phase, which evidently turned to be longer than I expected, moving from a vision driven by the integration of information technology and communications in the wider sense, characterised by really interesting ideas and scientific contributions to the convergence (from cloud computing to security, from smart networks to digital convergence, etc.) towards a new augmented vision related to ICT and convergence: the convergence of the ICT towards the human.

In broad terms, and apologising for the excessive synthesis, the debate on the ICT and Convergence happened in three main phases:

- The first phase has been characterised by meaningful conceptual footprints of some ICT gurus (which, at that time, were considered visionary), with precise definitions in different disciplines, from computer science to economy, from communications to social sciences, etc., and with many hardware and software technicalities. Many of these definitions can be found in encyclopaedias, books, blogs, and wikis, with different scientific, technical, industrial and social connotations. This pioneering period, not really far-away, it has been particularly complex. It produced authoritative scientific contributions in information technology, communications and convergence, which often included in journals whose main scope were only one of those different disciplines (e.g., electronics, sensors, computer science, networking, etc.). Furthermore, in this first period, the scientific contributions have found fertile ground in the many conceptual visions on the topic ‘ICT and convergence’, among which I cite the most popular ones:
 - a Negroponte (1995), among the creators of the theory of convergence, according to whom the digital technology should have allowed to design and build the personal secretary, interfaces and automatic filters on useful information for every citizen.
 - b The vision of Murdock and Golding (2002) wherein, more pragmatically, the convergence is seen as the interconnection between information technology, networks and media contents which originally act mostly independently.
 - c The vision of Jenkins (2008) which sees the convergence as a content flow on many platforms, the cooperation between the media industry sectors and the migration of the public which continuously searches for novel experiences in the telematics life.
- The second phase, occurred with an overwhelming rapidity, has been able to determine and characterise a new era in a short period which can be placed from the last decade to our current time. This phase has been defined by some scholars as the second *unpacking* (with reference to the pre-industrial era in which the transportation costs made the production necessarily *packed* with the consumption) and it is

characterised by two keywords: smartphone and cloud computing. It is characterised by increasing penetration of mobile devices; it allows billions of people, everywhere in the world, to communicate with any synchronous and/or asynchronous modalities; it provides and transfers data, information, knowledge in real-time; it eases the collaboration and cooperation, etc. The cloud computing makes it possible for the manifestations of collective intelligence by connecting people of any nationality by means of powerful mobile devices. The smartphone and cloud computing have crept in our daily life and are part of us, allowing us for studying, playing, working, communicating, making payments, searching and publishing information, etc., by means of different kinds of networks. During the second phase, scientific research regarding ICT and convergence has produced many international scientific and industrial collaborations, hundreds of thousands of articles, thousands of scientific conferences, many patents, etc. It has been focused on the crucial topics for the definition of novel solutions of massive use: all-IP network protocols and standards, issues related to broadband networks, security and privacy challenges, distributed architectures, integration of industrial and home devices, etc. Many journals and magazines which host scientific contribution of prestigious colleagues, as well as really interesting technical reports of the major industry and communications providers, have widely used the terms ICT and cloud computing together with the term convergence; and in many cases, the main keywords of numerous scientific journals and international conferences have become the words 'ICT and convergence'.

- The third phase, defined by some influential colleagues as the Great Convergence, started some years ago, is fast approaching at the heart of the second phase. It opens to a new debate that we can find in some technical-scientific contributions. According to Baldwin (2016), the Great Convergence, by leveraging on the explosion of the web and ICT (smartphone, cloud computing, etc.) has already made possible the so-called second unpacking, related to the knowledge, leading to the exploitation of sources of competitiveness (even distributed among different countries), wherein the management competences of a nation can join the manufactural processes of a different nation, by generating new value and modifying the economy of entire countries. This new transition involves most of the civilisations of our world and it extends and specialised the ICT and the convergence to the intelligence machines. The Great Convergence allows us to design a futuristic vision in which the automation, the artificial intelligence, and the robotics, revolutionise and modify the life of the human beings, of the communities, of the work, etc. There is much attention of the media on the uncontrollable speed of this transformation, of this new wave of convergence pervaded by deep learning, robotics, 5G, broadband communications, etc., which started to spread while the second phase of the convergence is still alive and not consolidated. In fact, this new scientific and technological scientific ferment, especially enabled by artificial intelligence, is seen by some scholars as a threat able to overwhelm even the adaptation capabilities of human beings. Simultaneously, from the scientific and technologic viewpoint, the scientific production of thousands of researchers and scholars all over the world seems to be focused only on the keyword 'artificial intelligence' and on the related topics, by often absorbing some scientific results and some scientific articles related to domains and topics which, in my honest opinion,

do not always have something in common with the artificial intelligence. Practically speaking, this phenomenon is determining an uncontrolled, speculative use of the term ‘artificial intelligence’ even in contexts like the internet of things, ICT and convergence, databases, statistics, etc., maybe also due to the massive investments of governments and institutions on the topics of artificial intelligence and 5G.

I do not want to deep into some catastrophic visions, rather I think that one of the main objectives of the knowledge society, of the scholars, researchers and especially of young doctorate students, concerns the realisation of a new modernity of the ICT and convergence dedicated to the improvement of the perception and comprehension, to the diffusion of the knowledge and the development of the intelligence, to the smart integration of the ecosystems, by promoting a mild and not violent use of the technologies for the well-being of the digital life of all the human beings, anytime and anywhere, without any obstacle. The modern human being has the responsibility to reaffirm his central role, even digital, in the world. It can be perceivable a great mission of the scientific communities in the area of convergence which should be strongly sustained and supported by each citizen: to search and realise human-machine solutions in which each individual, group and community it is a point of convergence of data, information, contents, technologies, and applications, in which each technological convergence enables the realisation of systems supporting humans and their well-being, wherein each small new contribution to the convergence allows for a natural human-machine fusion, until achieving a digital extension of the human capabilities thanks to the ICT, in order to gather, process and spread new knowledge to the humanity and to the well-being of each life form.

The *International Journal of Information Technology, Communications and Convergence (IJITCC)* should represent, today and in future, one of the open places in which it is possible to contribute to the research and advancement of the convergence processes by using scientific methodologies, rigorous approaches, with theories, approaches and practical application of ICT related to the topic of ICT (in their broader and more inclusive meaning) and convergence.

I conclude with my most sincere thanks to the Inderscience Publishers for the trust placed in me, to the Inderscience editorial staff for the continued and constant collaboration. I would also like to thank the colleagues of the advisory, associate and editorial boards for all their suggestions, hints and contributions useful for the success of *IJITCC*.

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