The First International Conference on Digital Economy

Emerging Technologies and Business Innovation

ICDEc 2016, April 27-30, 2016, Carthage, Tunisia

Conference organised by ATEN, the Tunisian Association of Digital Economy

In Collaboration with the Higher School of Digital Economy- University of Manouba

Technically sponsored by IEEE
Post- Conference Report

The information in this report is based on the conference proceedings and speakers presentations.

This Report is prepared by

Dr. Lamia ZAIBI, Assistant, Higher School of Digital Economy

Dr. Dhouha DOGHRI, Assistant professor at the Higher School of Digital Economy.

Conference program is available at: http://www.aten.tn/ICDEc2016
THE EVENT

Event Name: The first International Conference on Digital Economy ICDEc 2016

Theme: “Digital Economy: Emerging Technologies and Business Innovation”

Date: April 27-30, 2016

Venue: Dar El Marsa, Tunisia

Conference Organisers: The Tunisian Association of Digital Economy ATEN
ICDEc 2016 General Chairs

Dr Rim Jallouli Chaabouni, University of Manouba, Tunisia.
Professor of Marketing and Innovation
Founding President, Tunisian Association of Digital Economy- ATEN
Dean, Higher School of Digital Economy
ESEN, University of Manouba

Dr Olfa Nasraoui, University of Louisville, USA.
Professor, Director, Knowledge Discovery & Web Mining Lab
Speed School of Engineering - University of Louisville

OVERVIEW

The first International Conference on Digital Economy ICDEc 2016 was held on April 27-30, 2016 in the prestigious five-star hotel of Dar La Marsa, Tunisia. The conference was organised by the Tunisian Association of Digital Economy with the support of the Higher School of Digital Economy, University of Manouba and the technical sponsoring of IEEE.

The theme of the conference Digital Economy: Emerging Technologies and Business Innovation translates the outstanding importance of Digital technologies and the rising interest in innovation research. It focuses on new models and applications in management, digital marketing, web intelligence, e-commerce, security and privacy.

The conference program was formulated with the support of the Program and Scientific committees and benefited from the input of the General Chairs. All papers submitted to the conference were reviewed using a blind peer-review process. Accepted and presented papers are submitted for IEEE Xplore inclusion. Below are some statistics about the reviewing process and participation:

- The reviewers’ number per paper: between 2 and 5.
- The exact rate of reviewers per paper: 3.25
- The acceptance rate of submitted papers: 53.33%
- The presentation rate (of accepted papers): 81.25%

The conference covered topics such as Support Systems, Data Management and Intelligent Systems, Web Intelligence, Innovation and Digital Economy, E-Health and E-learning. Different projects were presented such as the CEVEP Medical application for Innovative Management of Central Venous Port (CVP) in collaboration with the hospital of Hedi Chaker of Sfax.
The conference brought together participants and partners from more than 30 countries. It was an excellent opportunity for networking and sharing research interests in innovative research and emerging digital technologies, with in particular the role of Cloud Computing, Big Data and mobile technologies in business innovation.

The conference attracted participants and guests from different fields. Their participation provided an important forum of discussion of the challenges in the use of smart emerging technologies. Their names are listed as follows:

- Mr. Sami Ghazeli, Director at the Ministry of Communication Technologies and Digital Economy.
- Ms. Rym Jarou, Capacity Building- Smart Tunisia, Ministry of Communication Technologies and Digital Economy.
- Mr. Kaies El Kamel, Coordinator of Electronic Administration, Ministry of Tourism.
- Mr. Nejib Khabbouch, Advisor, Ministry of Vocational Training and Employment.
- Dr. Mohamed Zine El Abidine, Director of the Higher Institute of Music and Director of Carthage Festival
- Dr. Mahmoud Zouaoui, President of the Doctoral Commission of Management, University of Manouba.
- Mr Mohamed Ali Mejri, General Director of the Technopole of El Ghazela
- Dr. Wajdi Souilem, Vice President of the University of Manouba.
- Dr Jouhaina Ghrib, Vice President of the University of Manouba.
- Mr. M.L. Diaketé, Vice Dean of the University of Sciences, Technologies and Medecine, Mauritania.
- Mr. Atig Boubaker, representative of the Lebanese International University, Nouakchott, Mauritania.
- Professor Mustapha Zghal, President of the Tunisian Association of Marketing.
- Mr. Maher Gassab, Director of the Higher School of Commerce, University of Manouba
- Dr. Sami Kamoun, Dean of the Faculty of Medicine, University of Sfax.
- Dr. Mohamed Jallouli, Faculty of Medicine, University of Sfax.
- Mr. Mohamed Bouhaffa, Monetary Director at Tunisian Arab Bank.
- Mr. Wissem Ouesleti, Expert in E-Commerce.
- Ms Hanen Trichili, Radio Sfax

Press

- Radio Med
- Radio Sfax
- Saraha Fm
<table>
<thead>
<tr>
<th>COMMITTEES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Chairs</strong></td>
</tr>
<tr>
<td>Prof. Rim Jallouli, University of Manouba.</td>
</tr>
<tr>
<td>Prof. Olfa Nasraoui, University of Louisvilles</td>
</tr>
<tr>
<td><strong>Program Committee Chairs</strong></td>
</tr>
<tr>
<td>Mohamed Anis Bach Tobji, University of Tunis.</td>
</tr>
<tr>
<td>Rhouma Rhouma, University of Tunis-El Manar.</td>
</tr>
<tr>
<td>Rym Srarfi Tabbane, University of Manouba.</td>
</tr>
<tr>
<td><strong>Finance Chairs</strong></td>
</tr>
<tr>
<td>Afeef Herelli, University of Tunis-El Manar.</td>
</tr>
<tr>
<td>Jihene Ouakdi, University of Manouba.</td>
</tr>
<tr>
<td><strong>Organization Committee</strong></td>
</tr>
<tr>
<td>Hamida Amdouni, University of Manouba.</td>
</tr>
<tr>
<td>Chemseddine Ethani Barnat, University of Tunis.</td>
</tr>
<tr>
<td>Houda Challakhi, University of Manouba.</td>
</tr>
<tr>
<td>Nabila El Jed, University of Manouba.</td>
</tr>
<tr>
<td>Karim Kammoun, University of Manouba.</td>
</tr>
<tr>
<td><strong>Junior Committee</strong></td>
</tr>
<tr>
<td>Nassim Bahri, University of Manouba.</td>
</tr>
<tr>
<td>Fatima Chaouachi, University of Manouba.</td>
</tr>
<tr>
<td>Wafa Hamzaoui, University Sophia Antipolis, France.</td>
</tr>
<tr>
<td>Hanen Nefzi, University of Manouba.</td>
</tr>
<tr>
<td><strong>Desk and IT support</strong></td>
</tr>
<tr>
<td>Insaf Amri, University of Manouba.</td>
</tr>
<tr>
<td>Riadh Saidi, University of Manouba.</td>
</tr>
<tr>
<td><strong>Conference reporting</strong></td>
</tr>
<tr>
<td>Dhouha Doghri, University of Manouba.</td>
</tr>
<tr>
<td>Lamia Zaibi, University of Manouba.</td>
</tr>
<tr>
<td><strong>Country chairs</strong></td>
</tr>
<tr>
<td>BRAZIL, Ana Pires, Federal University of Bahia.</td>
</tr>
<tr>
<td>CANADA, Chiheb El Ouakdi, Laval University.</td>
</tr>
<tr>
<td>CHINA, Chengqing Li, Xiangtan University and Shiguo Lian, Huawei Media Lab.</td>
</tr>
<tr>
<td>FRANCE, Yamen Koubaa, Brest Business School.</td>
</tr>
<tr>
<td>IRAN, Ali Afshar, Eqbal Lahoori Institute of Higher Education.</td>
</tr>
<tr>
<td>JAPAN, Masayuki Maruyama, Poole Gakuin University.</td>
</tr>
<tr>
<td>MIDDLE EAST, Mona Al-Achkar Jabbour, Lebanese Information Technology Association.</td>
</tr>
<tr>
<td>NORTH-AFRICA, Mohamed Ben Ammar, University of Sfax.</td>
</tr>
</tbody>
</table>
PORTUGAL, Rute Abreu, Instituto Politécnico da Guarda.

POLAND, Dorota Jelonek, Czestochowa University of Technology.

RUSSIA, Evgeny Nikulchev, Moscow Technological Institute.

SLOVAKIA, Caganova Dagmar, Faculty of Materials Science and Technology STU.

SPAIN, Dagmar Caganova, Faculty of Materials Science and Technology STU.

TAIWAN, Che-Jen Su, Fu Jen University.

THAILAND, Chollada Luangpituksa, Kasetsart University.

UNITED KINGDOM, Walid Trabelsi, IBM Ireland.

NATIONAL NETWORK

- Ministry of Communication Technologies and Digital Economy
- Ministry of Tourism
- Ministry of Vocational Training and Employment
- Ministry of Higher Education and Research
- Carthage Festival
- University of Manouba
- University of Sfax
- University of Tunis
- University of Tunis-El Manar
- Wissem Oueslati, Wess E-commerce
- BETAPI Consulting
- Voltaire Project
- Higher School of Digital Economy, University of Manouba
- LITA
- OfficePlast
- Arab Tunisian Bank
- Minerva Consulting
- AL Gazala Technopark
- Ennajma Ezzahra Museum
- IEEE Tunisia section

INTERNATIONAL NETWORKING

- Lebanese Information Technology Association, Lebanon.
- The University of Louisville, USA.
- The University of Nice Sophia Antipolis, France.
- The University of Poitiers, France.
• The Lebanese International University, Mauritania.
• The Faculty of Sciences and Technics, Nouakchott, Mauritania.
• Arcadia University, Canada.
• LISITE Laboratory, ISEP, Paris, France.
• LARIFA-EDST Laboratory, Faculty of Sciences, Lebanese University.
• Faculty of Economics and Business Administration, Lebanon
• Laboratoire LISIC -, Université du Littoral Côte d’Opale.
• University of Bechar, Algeria.

SPONSORS
KEYNOTE SPEAKERS

• **Professor O. Zayane, University of Alberta, Canada.**  

• **Professor O. Nasraoui, University of Lousville, USA.**  
  *Title of the speech:* Recommender Systems.

• **Professor Serge Miranda, University of Nice Sophia Antipolis, France.**  
  *Title of the speech:* Digital Revolution: 4IT Paradigm Switchs.

• **Professor N.J. Delener, Arcadia University, USA.**  
  *Title of the speech:* Globalisation and Emerging Technologies: Advances that will transform Business and the Global Economy.

• **Professor . A. Alimi (REGIM-Lab., Univ. of Sfax, Tunisia)**  
  *Title of the speech:* How Hybrid Intelligent Approaches can help for Mining Big Data Streams in a Smart City.

Unfortunately neither Professor N.J. Delener nor Professor A. Alimi were able to attend the conference. Yet, Professor Dellener sent his speech for the conference and Professor A. Alimi apologized on the eve of the conference for a force majeure.
CONFERECE PROGRAM IN SUMMARY

The conference started with a study tour on April 27 at the technopark of Manouba. This was a good opportunity to discuss the challenges facing Tunisia in the field of Digital Economy, innovative technology and Higher Education. The conference continued in the Hotel of Dar El Marsa for three days. The conference started with an inaugural session and included four plenary sessions:

**Session I: Data Management and Intelligent Systems**

**Session II: Web Intelligence**

**Session III: Innovation and Digital Economy**

**Session IV: E-Health and E-Learning**

It also included an international networking session which was a good opportunity to discuss key issues and come up with recommendation related to research and the possibility of collaboration between the participants from Tunisia and abroad.

It also included a Tutorial session given by Professor O. Nasraoui. The latter was an excellent opportunity for the participants especially Students of Research Master of Web Intelligence at the Higher School of Digital Economy to voice out their concerns and discuss about recommendation systems and their usages. Students expressed their interest and enjoyed learning about the current trends in this field and the research paths that may be of interest to them.

The conference ended with a closure session and a cultural tour.

THE SESSIONS IN DETAIL

**DAY 1 Wednesday April 27th**
INAUGURAL SESSION

Keynote speech Professor Osmar ZAYANE (University of Alberta, CANADA) “Towards clinical decision support systems: translating clinical/practice guidelines to computer interpretable guidelines”
DAY 3 Friday April 29th

DAY 3 SESSIONS: WEB INTELLIGENCE

Professor Olfa NASRAOUI – Louisville University, USA: « Data Management and Intelligent Systems.»

F.E Bousnina, University of Tunis “Object Relational Implementation of Evidential Databases.”

Y.Chabchoub, ISEP, France “Sampling Algorithms in Data Stream Environments.”

F. Ben Hassen, University Tunis El Manar “VM Placement Algorithm Based on Recruitment Process within Ant Colonies”

Professor Osmar Zaïane, University of Alberta, Canada “BubbleNet: An Innovative Exploratory Search and Summarization Interface with Applicability in Health Social Media”
Hanen Ben Othman, University Tunis Al Manar:
“Organizational Culture and the Acceptance of Agile Methodology.”

Abir Besbes, “The impact of Contextual Factors on Business Intelligence”

M.L. Diakete, University of sciences, technologies and medicine, Mauritania “An Ontology for Western Saharan Manuscripts”

A. Abidi and N. Bahri, University of Manouba, “The CEVEP Medical Application for Innovative Management of CVP”
H. Frikha, “Deployment IPv6 at ISET Charguia”

R.J. Ben Chikha, “Risk Management for Spam over IP Telephony using Optimal Countermeasure”

H. Skandrani, “The impact of a Website Interactivity and Vividness on Consumer Assessment of its Originality”

DAY 4 Saturday April 30th

Professor Serge Miranda

« Digital Revolution: 4IT paradigm switchs »
LIST OF CHAIR SESSIONS

Professor Osmar ZAYANE, University of Alberta, Canada

Professor Olfa NASRAOUI, University of Louisville, USA

Dr Mohamed Jallouli, Sfax

Professor Sami Kammoun (Dean of Faculty of Medicine of Sfax)

M.L. Diakete, Vice Dean of the University of Sciences, Technologies and Medecine, Mauritania.
It has been a very fruitful discussion in which participants expressed their concerns about research in general and the status of the Tunisian researcher in particular (problems and challenges). All participants gave positive comments about the conference and expressed the need for similar conferences in Tunisia especially that Tunisian Researchers lack of funding represents one of the main reasons for not taking part in conferences overseas.

Different recommendations were expressed such as:
- The need to monitor and establish a framework for Doctoral students and inform them about research opportunities available.
- The idea of the ‘sandwich’ PhD which is used in Canada allowing students to study one year in their country of origin, the second year in a research lab overseas and the last year in their home country. This method ensures the return of PhD students to their home countries, thus allowing the government to have a return on investment.
- The importance of conferences both at a national and international level.
- The need to ensure the continuity of this conference and build its reputation which is already a good one.
- The need for a long term view/ vision.
- The importance of networking at regional, national and international levels.
- The need for short visits for researchers.
- The importance of innovation.
Closure Session

Professor Rim Jallouli, the General Chair of the conference expressed her special thanks to:
- All participants who showed a great interest in this event.
- Committee members for the effort they put in to make this conference a great success.
- Keynote speakers for their outstanding contribution.

The session ended with taking group pictures and giving Gifts.

**HONORARY AWARDS**

**Best Paper Awards:**

The Best paper awards were presented to the following recipients:

- **M L Diaketé** for the paper entitled: “An ontology for Western Saharan Manuscripts”
- **Dr. H. Skandrani** for the paper entitled: “The impact of a Website Interactivity and Vividness on Consumer Assessment of its Originality.”

**Best Reviewer Award**

Professor Rim Jallouli mentioned that the reviewing process was a long and time-consuming process and expressed her thanks to all the reviewing committee members from Tunisia, Europe, Asia and the USA. The best Reviewer award was attributed to Dr. Meriam Belkhir, University of Sfax.
STUDY TOURS

The conference started with a welcoming cocktail and study tour on 27 April at the University of Manouba and the Technopark. It was a good opportunity to exchange ideas about innovative technologies and the importance of applying these tools in different sectors such as Tourism, Health, Education, Economy etc. Digital Technologies are a prerequisite for “Smart Tunisia”, as Ms. Rym Jarou, Capacity Building- Smart Tunisia, Ministry of Communication Technologies and Digital Economy highlighted.

CULTURAL TOURS

Two Cultural tours were organised.

The first cultural tour took place on 28 April at the Museum of Ennajma Ezzahra Palace, Sidi Bou Said.

The second cultural tour took place on 30 April at the Carthage historical sites. It was a good opportunity for participants to discover Carthage Civilization and history.
FEEDBACK

Good day, Hope this message finds you in best of health. Pleased to see wonderful conference preceeding pictures. I missed it since I am had workshop in Cambridge. Please let me know if you would like to have conference or other related activities in Malaysia. Would be happy to assist. ….

Congratulations again for successful event. Respect and peace. Dr Nadeem Khalid, Malaysia

Félicitations

De maatougui chayma

A ma chère directrice, qui m’a inculqué le savoir et qui m’a appris le sens du travail et succès.
Je vous félicite madame pour l’excellente organisation. Je reconnais qu’elle n’aurait pas été possible sans votre précieux effort et la disponibilité de toute l’équipe avec laquelle vous travaillez : Mme BOUDIA, Mme JIHENE, Mme HAMIDA, Mme DHOUHA, Mr ANIS… C’était le fruit de vos innombrables sacrifices pour l’enseignement supérieur et la recherche scientifique dans notre pays.

Je suis vraiment fière de vous madame, Je vous souhaitez tout le bonheur que vous méritez.

Bon courage et bonne continuation. votre étudiante: MAATOUGUI CHAYMA

Grissa Medkarim

Bonjour Rim,

Je me permets de vous écrire afin de vous remercier ainsi que l’ensemble du comité d’organisation pour l’accueil chaleureux, réservé à l’ensemble de vos participants, dont je suis sujet et témoin. De même, je tiens à vous féliciter pour la réussite de la tenue de la conférence Digital economy. En espérant que les prochaines éditions s’en suivent et que la fin d’une étape soit le commencement d’une autre….A cet égard, et conformément à ce qu’on a discuté ensemble, je ne manquerai pas dans mon labo de communiquer autour de l’évènement et sa promotion…Ainsi ,N’hésitez point de me faire part du prochain appel à Com, dès que vous seriez en possession d'information

Par la même occasion, je me demande si c'est possible de connaître les reviewers de ma communication (en particulier le 2ème reviwever), car je trouve ses remarques très enrichissantes et édifiantes et relèvent de quelqu'un très connaisseur en matière de mon sujet. Ceci dit, cela m’intéresse de lui connaître en vue d'échanger ensemble, voire lui faire partie dans la composition des jurys de ma soutenance. Merci encore pour le moment convivial partagé avec vous tous et l'ambiance chaleureuse dans laquelle la conférence s’est déroulée.

GRISSA Karim
Université de Poitiers
Privilégiant toujours la collaboration avec les institutions et associations nationales et internationales et conservant toujours un esprit de partage, nous sommes toujours motivés à participer à des événements intéressants, notamment dans le domaine du digital. Dans ce cadre, nos chères enseignantes Dr. Salima Abbes et Dr. Ines Mezghani Ep Daoud ont assisté à la 1ère édition de la très réussie conférence " The International Conference on Digital Economy ICDEc" qui s’est déroulée du 28 au 30 Avril 2016 à la Marsa. Félicitations à notre chère enseignante Dr. Rim Jallouli, Fondatrice et Présidente du "Tunisian Association of Digital Economy- ATEN" ainsi qu’à toute l’équipe organisatrice avec laquelle elle travaille pour tout l’effort fourni visant à améliorer la recherche scientifique et l’enseignement Supérieur en Tunisie.

Yamen Koubaa

Brest Business School

Je suis vraiment très heureux pour vous, pour l’ESEN et pour la chère Tunisie. Félicitations et bonne continuation.

Kais El Kamel a ajouté 3 photos — à Hôtel Dar El Marsa.

28 avril, 20:53 · La Marsa ·


Heureux d’avoir côtoyé des gens qui croient en cette politique de changement qui apportera certes une valeur ajoutée à l’économie nationale.

Fier d’avoir fait votre connaissance et convaincu des opportunités qu’apportera cet événement et des liens qui vont être noués entre nos établissements.

#digital_economy #ATEN #ESEN #TOURISME

السلام عليكم و رحمة الله و بركاته،

بكثر من الغبطة والسرور، وشعور الاعتزاز والفخر يشريفي أن أهتمكم جميعاً على النجاح العظيم، والتنظيم المحكم، والمنسوبي الرفيع الذي ميز المؤتمر الدولي الأول (ICDEc-2016) الذي عقد في تونس- قرطاج، والذي نظمته المدرسة العليا للإقتصاد الرقمي- جامعة منوبة.

لقد عكس المؤتمر حسن التنظيم والأداء العالمي لفريق المدرسة، حسن إدارةكم وانجاز رؤيكم.

أشكركم شخصياً على حسن الضيافة لجميع الضيوف الذين تواصلت مع ثلة منهم خلال و بعد المؤتمر.

نأمل أن يكون هذا المؤتمر بداية الإطلاقابة الحقيقية للمدرسة نحو العالمية والإشعاع الدولي. بالتوقيع

Regards,

Dr. Mohamed Ben Ammar

Vice Dean for Academic Improvement and quality

Faculty of Computing & IT

Northern Borders University, Rafha

Kingdom of Saudi Arabia