PROPOSAL

SMEs and digitization

As the Internet is established as a mature technology, and the advent of technologies called "Industry 4.0" begin to take a central role (eg, artificial intelligence, cloud computing, big data analytics) digitization of companies is established as an essential condition for their survival in terms of their contribution to the generation of competitive advantages, either in terms of cost reduction or creation of new market niches (Goldfarb, Greenstein, & Tucker, 2015), as well as personalization of products or services and general experience with the consumer (Markovitch & Willmott, 2014). Digitization transforms business models and leads to optimization of existing processes in terms of efficiency and overall quality of the products and services offered (Loebbecke & Picot, 2015). In addition, it is for this reason that works that contribute to measuring the impact of digitization are of significant value for policy decisions (Goldfarb, Greenstein, & Tucker, 2015, Gulati & Soni, 2015).

Although it is argued that the incorporation of digital technologies is within the reach of any company (Westerman, Bonnet, & McAfee, 2014), this digital disruption is not being incorporated to the same extent by all companies (Weill & Woerner, 2015). In fact, because micro, small and medium enterprises (SMEs) are those most exposed to the risk of this digital revolution, large companies tend to be more willing to incorporate these types of developments (Sommer, 2015).

In particular, in Argentina it is estimated that more than 99% of the companies are micro, small and medium enterprises, where around 86% of the companies are micro (i.e., have up to 9 employees). At the same time, Argentine SMEs contribute 51% to the recruitment of labor and, on a sectoral level, 75% of SMEs are in the commerce and services sectors (Observatorio Pyme, 2016).

Taking into account the relevance of the impact of digitalization on organizations, and the prominence of SMEs in the Argentine economy, this paper proposes a study of the degree of digitalization of Argentine SMEs, and how it relates to their levels of innovation, entrepreneurial orientation, productivity, and internal and external barriers. Likewise, the work proposes as a final contribution the collection of valuable information for the generation of policy proposals that contribute to the incorporation of SMEs in this imminent digital ubiquity.

Finally, it is considered that the present work will have a significant academic impact, because it is not a well-explored research area in terms of measuring the levels and impacts of digitization in SMEs in developing countries. Likewise, the final objective of the project will open opportunities for the generation of national and international institutional links, and the creation of an Observatory of technological change

Bibliography

Observatorio Pyme. (2016). Informe Annual 2015 – 2016. Retrieved from http://www.observatoriopyme.org.ar/newsite/wp-content/uploads/2016/10/Informe-FOP-2015-16_Baja.pdf

Goldfarb, A., Greenstein, S. M., & Tucker, C. E. (Eds.). (2015). *Economic analysis of the digital economy*. University of Chicago Press.

Gulati, R., & Soni, T. (2015). Digitization: A strategic key to business. *Journal of Advances in Business Management, 1*(2), 60-67.

Loebbecke, C., & Picot, A. (2015). Reflections on societal and business model transformation arising from digitization and big data analytics: A research agenda. *The Journal of Strategic Information Systems, 24*(3), 149-157.

Markovitch, S., & Willmott, P. (2014). Accelerating the digitization of business processes. *McKinsey & Company*, San Francisco.

Sommer, L. (2015). Industrial revolution-industry 4.0: Are German manufacturing SMEs the first victims of this revolution?. *Journal of Industrial Engineering and Management, 8*(5), 1512.

Weill, P., & Woerner, S. L. (2015). Thriving in an increasingly digital ecosystem. *MIT Sloan Management Review, 56*(4), 27.

Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation.* Harvard Business Press.

BUDGET ESTIMATE

- Travel and expenses related to field work: $ 2000
- Recruitment of interviewers: $ 3000
- Data processing: $1000
- Bibliography and stationery: $500
- Travel and expenses to Congresses: $7000

TOTAL: $13500

CV

I. Personal Information

Surname and names: Revale, Hernan Javier

Birthday: 23/10/1990

Place: Bahia Blanca, Buenos Aires, Argentina

ID: 35.775.509

Passport: AAC220770

Address: Bv. Santa Fe 1303, Rafaela, Santa Fe, Argentina.

Cellphone Number: +54 9291 5045815

E-Mail: hernan.revale@gmail.com / hernanrevale@unraf.edu.ar

Workplace: Universidad Nacional de Rafaela (National University of Rafaela)

II. Studies

II.a. University Studies

Licenciate in Economics

Universidad Nacional del Sur (National University of the South), Bahia Blanca, Argentina.

Overall Average Grade Point: 8.12

Finish date: December 2014

II.b. Postgraduate Studies

PhD in Management Science (ongoing)

Universidad Nacional del Sur, Bahia Blanca, Argentina.

Postgraduate accredited by Coneau: Category A (maximum category)

Average Score: 9.18

Estimated finish date: 2020

II.c. Languages

Spanish

Native

English

Advanced written and spoken level

Certificate: TOEFL IBT. Total Score: 101

Registration Number: 2851 7029

German

Medium written and spoken level

Certificate: B1 Level, Goethe-Zertifikat

Nummer: 01225-B1-16-854

II.d. Computer skills

- Proficiency MS Excel, Word, and Power Point.
- Proficiency in STATA, SPSS and Python.

II.e. Postgraduate and Extracurricular Courses

Postgraduate

PhD courses in Management Sciences from the Management Department of the Universidad Nacional del Sur.

1. Methodology of Scientific Research, with Emphasis on Qualitative Approaches. Hours: 30. Date: November 2017. Grade: 9
2. Sustainability in the 21st Century. Hours: 30. Date: September 2017. Grade: 9
3. Multicriterion Decision Theory. Hours: 30. Date: August 2017. Grade: 10
4. Transparency, Accountability and Good Governance in the Public Sector. Hours: 40. Date: June 2017. Grade: 8
5. Organizational Theory. Hours: 40. Date: November 2016. Grade: 9
6. Relational Marketing. Hours: 30. Date: November 2016. Grade: 9
7. Digital Strategy. Hours: 30. Date: October 2016. Grade: 10
8. Culture and its Relationship with the Organizational Strategy. Hours: 40. Date: August 2016. Grade: 9
9. Knowledge and Innovation Management. Hours: 30. Date: August 2016. Grade: 9
10. Corporate Governance. Hours: 35. Date: August 2016. Grade: 9
11. Quantitative Methods for Science Administration. Hours: 30. Date: August 2016. Grade: 10
12. Entrepreneurship and entrepreneur: opportunities, business development and learning. Hours: 30. Date: May 2016. Grade: 9
13. Research methodology. Hours: 30. Date: March 2016. Grade: 10
14. Digital Marketing: planning and research. Hours: 30. Date: March 2016. Grade: 9

15. Financial Theory II: business and intangible valuation. Hours: 30. Date: December 2015. Grade: 9
16. Advances in Strategic Management of Human Resources. Hours: 40. Date: December 2015. Grade: 9
17. Financial Theory I: cost of capital and capital structure. Hours: 30. Date: November 2015. Grade: 9

Extracurricular

1. Workshop "Reflection on the teaching-learning process in the General Training Cycle", by the Mgter. Carlos Melone. 7 March 2018. Duration: 3 hours. National University of Rafaela, Rafaela, Santa Fe, Argentina.
2. Workshop "Preparation of Research Projects", dictated by PhD. Roxana Cabello between the months of November 2017 and March 2018. Duration: 30 hours. National University of Rafaela, Rafaela, Santa Fe, Argentina.
3. Course "Development of Informational Competencies for Teaching and Research", by Bib. Marcela Sánchez. Department of Administration Sciences, National University of the South, Bahía Blanca, Argentina.
4. Seminar "A systemic view of the stock market technical analysis", by Mg. Leopoldo Sánchez Cantú, author of the book: Invest Successfully in the Stock Market. Duration: 12 hours November 2014. Universidad Nacional del Sur, Bahía Blanca, Argentina.

III. Scholarships and Awards

III.a. Scholarships

Type:	Doctoral Scholarship
Start date:	01/07/2015
End date:	31/07/2016
Place:	Universidad Provincial del Sudoeste – CERZOS, CONICET. Bahia Blanca, Argentina.
Granting institution:	Co-financed by Comisión de Investigaciones Científicas de la Provincia de Buenos Aires - Universidad Provincial del Sudoeste.

Type:	Student Exchange
Start date:	15/02/2013
End date:	30/06/2013
Place:	IMC Fachhochschule, Krems an der Donau, Austria.
Granting institution:	OeAD österreichische Agentur für internationale Mobilität.

III.a. Awards

- Second Place in the Innovation and Creativity Competition of the Universidad Nacional del Sur "Creating my Company ".

IV. Laboral Experience

02/2017 - Present	National University of Rafaela
Position:	Research Area Coordinator
Function:	In charge of setting up the area, generating regulations, monitoring and coordinating research projects, organizing courses.

02/2015 – 12/2016	Valco S.A.
Position:	Logistics Management
Function:	In charge of logistics on the supply chain, stores management, development and optimisation of site logistics solutions to meet the needs of the projects on a construction company.

08/2014 – 10/2014:	Strategic Program Management and Growth of SMEs
Position:	Collaborator of the program
Function:	Coaching of SMEs at Universidad Nacional del Sur.

10/2012 – 12/2014:	BahiaMenu
Position:	Founding Partner
Function:	Creation, development, sale and tracking of start-up on online delivery.

03/2011 – 12/2012:	AIESEC (NGO)
Position:	Member/Coordinator
Function:	Development and monitoring of projects at national and local level. Teamwork coordination.

V. Teaching

03/2017 - Present	National University of Rafaela
Position:	Professor
Subject:	Statistics and Mathematics

03/2017 - Present	Technological National University Rafaela Regional Faculty
Position:	Professor
Subject	General Economy

VI. Direction and Coordination of Works

VI.a. Direction of research projects

- Project Director: "Internationalization of companies: modes of entry of companies in the province of Santa Fe". With favorable external evaluation. Amount allocated: AR$ 83,000 for two years. National University of Rafaela. June 2018.

VII. Research Work

Publications in Congresses, Meetings and Conferences

1. Hernán Revale, Rubén Ascúa (2018): "**Descriptive Analysis of the SMEs of Rafaela. Preliminary results**". To present at the XXIII Annual Meeting of the Mercosur SMEs Network "New productive models: the role of SMEs as engines of economic and social development". Mar del Plata, Argentina September 26, 27 and 28, 2018. Status: under evaluation.
2. Hernán Revale, Facundo Curbelo, Rubén Ascúa (2018): "**Internationalization of SMEs. Findings of the province of Santa Fe**". To present at the XXIII Annual Meeting of the Mercosur SMEs Network "New productive models: the role of SMEs as engines of economic and social development". Mar del Plata, Argentina September 26, 27 and 28, 2018. Status: under evaluation.
3. Hernán Revale, Rubén Ascúa (2018): "**Knowledge and use of public policies for SMEs. City of Rafaela case** ". To present in the XII National Conference of Researchers in Regional Economies "Strategies and

territorial dialectics in the face of the neoliberal reconfiguration". National University of Quilmes, Buenos Aires, Argentina. September 19 and 20, 2018. Status: under evaluation.

4. Hernán Revale, Facundo Curbelo, Rubén Ascúa (2018): "**Bibliographic review of market entry modes**". To present in the XII National Conference of Researchers in Regional Economies "Strategies and territorial dialectics in the face of the neoliberal reconfiguration". National University of Quilmes, Buenos Aires, Argentina. September 19 and 20, 2018. Status: under evaluation.
5. Hernán Revale (2018): "**Multicriteria System for Decision of Exportation: Analytical Hierarchical Process**". To present at the 11th International Congress of Business Management and Public Administration in Havana, Cuba. 4th, 5th and 6th of July 2018. Status: approved.
6. Belén Guercio, Lisana Martínez, Hernán Revale, Rubén Ascúa (2017): "**A comparative study of the financing decisions of the software sector and the videogames sector**". Presented at the 62nd ICSB 2017 World Conference. Buenos Aires, Argentina. June 28, 29, 30 and July 1, 2017.
7. Lucas Ariel Martín, Cecilia Popovich, Cecilia Damiani, Hernán Revale, Patricia Leonardi (2016): "**Algal biorefinery: cultivation of oleaginous microalgae of the Bahia Blanca estuary (Province of Buenos Aires) for the production of biodiesel and valuable co-products aggregate**". Presented at the 2nd Congress of Sustainable Energies in Bahía Blanca. October 26, 27 and 28, 2016.
8. Guadalupe Oliveras, Hernán Revale, Hernán Vigier, Anahí Briozzo, Andrea Savoretti (2015): "**The Institutionalization of Entrepreneurial Education in the Public Universities of the Province of Buenos Aires: Case Analysis**". Presented at the XX Annual Mercosur SME Network Meeting "The challenge of SMEs: innovate and undertake within the framework of a sustainable regional development". Universidad Nacional del Sur, Bahia Blanca, Argentina. 7, 8 and 9 October, 2015.

Indexed Journals

Journal: SMEs, Innovation and Development Journal (Revista PID)

Article: **Characteristics of exporting SMEs: case Province of Santa Fe, Argentina**

Authors: Hernán Revale, Facundo Curbelo, Rubén Ascúa

Volume: under evaluation

Other Bibliographic Material

1. Co-Author of the Booklet of the "Statistical and Mathematics" subject for the specific work in the Introduction to University Studies Workshop (TIEU). National University of Rafaela. April 2018.

VIII. Participation in Congresses, Meetings and Conferences

1. XXII Annual Meeting of the Mercosur SMEs Network. "Challenges of SMEs in a global world". Catholic University of Uruguay, Montevideo, Uruguay. October 4 to 6, 2017. Character: Assistant.
2. 62nd Annual ICSB 2017 World Conference. Buenos Aires, Argentina. June 28, 29, 30 and July 1, 2017. Character: Author.
3. 2017 Cohort ICSB Academy. Professional Council of Economic Sciences of the Autonomous City of Buenos Aires, Buenos Aires, Argentina. June 25 to July 1, 2017. Character: Participating posgraduate student.
4. XX Annual Meeting of the Mercosur SMEs Network. "The challenge of SMEs: to innovate and undertake within the framework of a sustainable regional development". National University of the South, Bahía Blanca, Argentina. October 7 to 9, 2015. Character: Author - Exhibitor.
5. Argentine Encounter Innovate & Entrepreneurship: ACTIVA2 Business & Entrepreneurship + VI University Meeting of Entrepreneurs. La Plata, Argentina. November 26, 2014. Character: Assistant.
6. II Argentine Conference of Economics Students (JAEEC). National University of the South, Bahía Blanca, Argentina. October 2013. Character: Assistant.
7. I Argentine Conference of Economics Students (JAEEC). National University of the South, Bahía Blanca, Argentina. October of 2012. Character: Assistant.
8. XLVI Annual Meeting of the Argentine Association of Political Economy (AAEP). National University of Mar del Plata, Mar del Plata, Argentina. November 16 to 18, 2011. Character: Assistant.

IX. Member of Committees and Juries

Evaluation Committees

- Member of the Ad hoc Selection Committee, for the selection of external evaluators within the First Call for Call for Research Projects of the UNRaf (Ordinance 004/2017). National University of Rafaela. March 2018.

X. Member of Academic and Professional Societies

- Member of the Science, Technical and Art Commission of the National Interuniversity Council. Since May 2018.
- Member of the Technological Linking Network of the National Universities of Argentina (RedVITEC) of the National Interuniversity Council. Since May 2018.

XI. Others

- Participation as a speaker at BahiaMenu in the Conexión Bit technological meeting, organized by the Bahía Blanca Technology Center. 2012.