

Springer Series in Design and Innovation 12

Nuno Martins
Daniel Brandão *Editors*

Advances in Design and Digital Communication

Proceedings of the 4th International
Conference on Design and Digital
Communication, Digicom 2020,
November 5–7, 2020, Barcelos, Portugal



Springer

Springer Series in Design and Innovation

Volume 12

Editor-in-Chief

Francesca Tosi, University of Florence, Florence, Italy

Series Editors

Claudio Germak, Politecnico di Torino, Turin, Italy

Francesco Zurlo, Politecnico di Milano, Milan, Italy

Zhi Jinyi, Southwest Jiaotong University, Chengdu, China

Marilaine Pozzatti Amadori, Universidade Federal de Santa Maria,
Santa Maria, Rio Grande do Sul, Brazil

Maurizio Caon, University of Applied Sciences and Arts, Fribourg, Switzerland

Springer Series in Design and Innovation (SSDI) publishes books on innovation and the latest developments in the fields of Product Design, Interior Design and Communication Design, with particular emphasis on technological and formal innovation, and on the application of digital technologies and new materials. The series explores all aspects of design, e.g. Human-Centered Design/User Experience, Service Design, and Design Thinking, which provide transversal and innovative approaches oriented on the involvement of people throughout the design development process. In addition, it covers emerging areas of research that may represent essential opportunities for economic and social development.

In fields ranging from the humanities to engineering and architecture, design is increasingly being recognized as a key means of bringing ideas to the market by transforming them into user-friendly and appealing products or services. Moreover, it provides a variety of methodologies, tools and techniques that can be used at different stages of the innovation process to enhance the value of new products and services.

The series' scope includes monographs, professional books, advanced textbooks, selected contributions from specialized conferences and workshops, and outstanding Ph.D. theses.

Keywords: Product and System Innovation; Product design; Interior design; Communication Design; Human-Centered Design/User Experience; Service Design; Design Thinking; Digital Innovation; Innovation of Materials.

How to submit proposals

Proposals must include: title, keywords, presentation (max 10,000 characters), table of contents, chapter abstracts, editors'/authors' CV.

In case of proceedings, chairmen/editors are requested to submit the link to conference website (incl. relevant information such as committee members, topics, key dates, keynote speakers, information about the reviewing process, etc.), and approx. number of papers.

Proposals must be sent to: series editor Prof. Francesca Tosi (francesca.tosi@unifi.it) and/or publishing editor Mr. Pierpaolo Riva (pierpaolo.riva@springer.com).

More information about this series at <http://www.springer.com/series/16270>

Nuno Martins · Daniel Brandão
Editors

Advances in Design and Digital Communication

Proceedings of the 4th International
Conference on Design and Digital
Communication, Digicom 2020,
November 5–7, 2020, Barcelos, Portugal

Editors

Nuno Martins
ID+/School of Design
Polytechnic Institute of Cavado and Ave
Barcelos, Portugal

Daniel Brandão
CECS/Institute of Social Sciences
University of Minho
Braga, Portugal

ISSN 2661-8184 ISSN 2661-8192 (electronic)
Springer Series in Design and Innovation
ISBN 978-3-030-61670-0 ISBN 978-3-030-61671-7 (eBook)
<https://doi.org/10.1007/978-3-030-61671-7>

© The Editor(s) (if applicable) and The Author(s), under exclusive license
to Springer Nature Switzerland AG 2021

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

Digicom - 4th International Conference on Digital Design and Communication is organized by the Design School of the Polytechnic Institute of Cavado and Ave and by ID+, Research Institute for Design Media and Culture with the cooperation of CECS-UM. Digital is increasingly ubiquitous and prevalent in our networked and global society. This conference aims to be a space for reflection and analysis on the constant challenges of digital communication for society, institutions and brands. This event brings together annually the work of researchers, academics and designers from around the world. Although Digicom is focused on the area of communication design, the objective is the promotion of an open, broad and plural discussion, aggregating different areas of knowledge, namely arts, technology, communication sciences, education sciences, branding, etc. The conference thus seeks to stimulate interdisciplinary relationships that contribute to a solid development of scientific activity.

The event took place between November 5 and 7, 2020, and, due to the COVID-19 pandemic, it was exceptionally held online.

The Digicom received three keynote speakers:

Rachael Feinman is Product Designer raised in California. She studied graphic design and began her career working for digital agencies in Los Angeles and New York. She has been embedded into teams for various clients including Hulu and Airbnb before making her full-time transition in-house. Now, she finds herself designing the merchant experience within Google Maps London and is part of the Women@Google team. She loves the challenges that come with her role and always strives to put users' needs first.

Fernando Moreira da Silva, Full Professor and Researcher in Design; President of CIAUD-Research Center for Architecture, Urbanism and Design; Coordinator of the PhD degree in Design at FA_ULisboa; Coordinator of the FCT panel for PhD grants in Design, Architecture and Urbanism, and CnPq International Evaluator, Brazil; Regular participation in national and international universities; Member of Scientific Commissions of several international scientific journals; Coordination

and participation in several research projects; Regular publications in peer-reviewed scientific journals, several book chapters and three books.

Daniel Raposo, Designer, Researcher and Professor of Communication Design at ESART—Escola Superior de Artes Aplicadas do Instituto Politécnico de Castelo Branco.

He is particularly dedicated to themes such as design of brand visual identity, branding, design management, brand typography, editorial design and design theory. He has a PhD in design from FA-ULisbon, a master's degree in design, materials and product management from UA, a degree in communication design and graphic techniques, graphic design and advertising from ESTGP. His papers, chapters and books on design include “Communicating Visually: The Graphic Design of the Brand” (English editions by Cambridge Scholars Publishing in 2018 and 2019 and Spanish edition by Experimenta Libros, 2020), “Perspective on Design: Research, Education and Practice” (Springer), “Investigação e Ensino em Design e Música” (IPCB Editions, 2017), “The rebellion of the lyrics” (ePub, 2013), “A rebelião dos Signos. A alma da letra” (in Portugal by Dinalivro, 2010 and in Argentina with La Crujía, 2008) and “Design de Identidade e Imagem Corporativa” (IPCB Editions, 2008).

In addition to the guest speakers, we also had the opportunity to attend a set of approximately 80 communications, strictly selected by Digicom's Scientific Committee, from different researchers and international designers. The three days event resulted in extensive debate sessions, where the participants' personal and professional perspectives encouraged the discussion, showing the importance of this kind of event.

The current book gathers the 56 best papers selected out of 124 submissions, upon a rigorous double-blind peer-review process.

The promotion of a panoramic vision of digital design and communication is a trademark that Digicom has been affirming and that it intends to continue to build and consolidate in its upcoming editions.

After many months of preparation for this fourth edition of Digicom, we could not forget to register and transmit a special thanks to all those who believed in this event and, in different ways, have contributed to its success!

Thank you very much to all participants, book contributors and people who have collaborated to the success of this edition, and to all the readers of this book, we hope you enjoy it and see you next year!

Nuno Martins
General Chair

Daniel Brandão
Co-chair

Organization

General Chair

Nuno Martins

ID+/School of Design, Polytechnic Institute of Cavado and Ave
nmartins@ipca.pt

Co-chair

Daniel Brandão

CECS/ICS, University of Minho
danielbrandao@uminho.pt

Scientific Committee

Albert Inyoung Choi

Alberto Sá

Álvaro Sousa

Ana Catarina Silva

Ana Correia de Barros

Ana Filomena Curralo

Anastasios E. Politis

Andreia Sousa

António Lacerda

Arafat Al-Naim

Camila Soares

Catarina Lelis

Catarina Moura

Catherine Prentice

Cátia Rijo

College of Design, Hanyang University, Korea

Universidade do Minho, Portugal

Universidade de Aveiro, Portugal

Escola Superior de Design IPCA, Portugal

Fraunhofer, Germany

Instituto Politécnico de Viana do Castelo,
Portugal

University of West Attica, Greece

Universidade Lusófona do Porto, Portugal

Universidade do Algarve, Portugal

Dean of College of Design, American University
in the Emirates (EAU)

Faculdade de Belas da Universidade do Porto,
Portugal

University of West London, UK

Universidade da Beira Interior, Portugal

Griffith University, Australia

Escola Superior de Educação IPL, Portugal

Cláudia Lima	Universidade Lusófona do Porto, Portugal
Daniel Brandão	Universidade do Minho, Portugal
Daniel Raposo	Instituto Politécnico de Castelo Branco, Portugal
Denitsa Petrova	The University of Edinburg, UK
Dina Riccò	Politecnico di Milano, Italy
Eliana Penedos	Universidade do Porto, Portugal
Fabício Fava	Faculdade de Belas da Universidade do Porto, Portugal
Fernando Galindo Rubio	Universidad Pontificia de Salamanca, Spain
Fernando Moreira da Silva	Faculdade de Arquitetura da Universidade de Lisboa, Portugal
Fernando Suarez Carballo	Universidad Pontificia de Salamanca, Spain
Frederico Braida	Universidade Federal de Juiz de Fora, Brazil
Gerry Leonidas	University of Reading, UK
Heitor Alvelos	Universidade do Porto, Portugal
Ildo Francisco Golfetto	Universidade Federal de Santa Catarina, Brazil
João Abreu	Instituto Politécnico de Lisboa, Portugal
João Brandão	Faculdade de Arquitectura, Universidade de Lisboa, Portugal
João Neves	Instituto Politécnico de Castelo Branco, Portugal
Jorge Pereira	Escola Superior de Design IPCA, Portugal
Jorge Vazquez Herrero	Universidade de Santiago de Compostela, Spain
José Silva	Instituto Politécnico de Castelo Branco, Portugal
Juan Ra Martin	Universidad Pontificia de Salamanca, Spain
Karel van der Waarde	Swinburne University of Technology, Melbourne, Australia
Krasimira Borisova Drumeva	ST Cyril and St. Methodius, University of Veliko Tarnovo, Faculty of Fine Arts, Bulgaria
Leonardo Pereira	Universidade de Aveiro, Portugal
Luís Santos	Universidade do Minho, Portugal
Marta Fernandes	Politécnico do Porto, Portugal
Manuel Montes Vozmediano	Universidad Rey Juan Carlos, Spain
Miguel Carvalhais	INESC TEC & FBAUP, Portugal
Nelson Zagalo	Universidade de Aveiro, Portugal
Nuno Coelho	Universidade de Coimbra, Portugal
Nuno Martins	Escola Superior de Design IPCA, Portugal
Pau Garcia	Domestic Data Streamers/Elisava, Spain
Pedro Amado	Universidade do Porto, Portugal
Pedro Portela	Universidade do Minho, Portugal
Ricardo Melo	Fraunhofer, Germany
Richard Brophy	Independent College Dublin, Ireland
Rita Espanha	ISCTE, Portugal
Sara Balonas	Universidade do Minho, Portugal
Sérgio Dominique	Escola Superior de Hotelaria e Turismo IPCA, Portugal

Susana Barreto	Universidade do Porto, Portugal
Teresa Ruão	Universidade do Minho, Portugal
Tiago Assis	Universidade do Porto, Portugal
Tiago Navarro Marques	Universidade de Évora, Portugal
Vanda Sousa	Politécnico de Lisboa, Portugal
Vera Barradas Martins	Politécnico Portalegre, Portugal
Vítor Quelhas	Escola Superior de Media Artes e Design IPP, Portugal

Analysis of Social Design Projects Based on Krippendorff's Four Pillars of HCD	366
Melissa Pozatti, Natália Debeluck Plentz, and Caio Marcelo Miolo de Oliveira	
Digital Communication on Higher Education Institutions: Challenges and Tools for Research	378
Arlindo Santos, Luisa Lopes, and Marcus Brasil	
Health, Pleasure, Physical Appearance: Which Motivates Food Involvement Mostly?	387
Ana Teresa Tavares, Rita Espanha, and Sandra Miranda	
Internet and Social Networks: Reflecting on Contributions to Employability and Social Inclusion	398
João Pinto and Teresa Cardoso	
The Protagonism of Afro-Brazilian and Indigenous Tales in Comics ...	406
Tamires Maria Lima Gonçalves Santos, Larissa Vieira de Oliveira Ribeiro, Edivan Silva Menezes dos Santos, and Danilo Itabira Nunes Santos	
<i>How Do I Feel When...</i> A Card-Based Communication Game to Stimulate Empathy Among Family Members with Anorexia Nervosa	418
Viviane Peçaibes, Pedro Cardoso, Liliana Castro, Bruno Giesteira, Livia Lopes, and Clara Junqueira	
The Impact of Visual Communication in COVID-19's Prevention and Risk Mitigation	433
Inês Saraiva and Cristina Ferreira	
Technological Change in London's Commercial Printing Trades, 1980–1992	443
Alex Heslop	
Design as a Driver for Behavioural Change: Oceans and Plastics, Approaches for a Shift Towards Sustainability	456
Dília Nunes and Joana Lessa	
Graphic Design and Branding	
Concrete Poetry and Advertising Symbiotic Relationship in Post II World War	473
Tiago Santos	
Everyday Social Practices as a Source of Design-Led Branding	489
Bernardo Meza Guzman and Catarina Lelis	



Digital Communication on Higher Education Institutions: Challenges and Tools for Research

Arlindo Santos¹ , Luisa Lopes² , and Marcus Brasil³  

¹ Instituto Politécnico de Bragança, Campus de Santa Apolónia,
5300-253 Bragança, Portugal
acsantos@ipb.pt

² Instituto Politécnico de Bragança, CiTUR, Campus de Santa Apolónia,
5300-253 Bragança, Portugal
luisa@ipb.pt

³ Instituto Federal Do Maranhão (IFMA-CCH), Centro Histórico,
São Luís 65010-030, Brazil
ramusyo@ifma.edu.br

Abstract. Changes in the Higher Education (HE) paradigm in Portugal, have made the sector competitive where different Higher Education Institutions (HEI) adapt marketing strategies to foster their education offer and differentiation factors in order to attract and maintain a higher number of students. With the increasing reduction in birth rates in Portugal, the investment on internationalization becomes a need in order to maintain the number of students. At the same time, the rapid proliferation of communication technologies affected the recruitment of new students and the communication strategies of HEI. The Instituto Politécnico de Bragança (IPB), being aware of this reality and recognizing the importance of digital communication tools, established in its strategic plan 2018–2022 objectives related to its internal and external communication in the digital context. For that purpose, various tools of research were conceptualized and implemented on an earlier phase of a digital communication plan. The originality and contribution of this work is to open this research methodology to the public sphere looking for critical analysis and construction.

Keywords: Higher Education · Digital communication · Research

1 Introduction

Digital communication plays a fundamental and specialized role in connecting people, when offering products and services essential to society and meeting extremely important processes. Communication is an effort between two or more elements, based on signs, codes and languages, in order to provide a shared commonality [1]. This idea of commonality provides the notions of dialogue and sharing so essential for a virtually

connected world. Sodré [2] says that today we live in a virtual bios¹, that is, an existence lived through networked media. The idea of virtual bios makes up a series of changes in everyday life, which brings new powers to exist. What interests us substantially is how these new ways of living in contemporary societies alter the ways of interacting socially, and promote new challenges to life in society. For Lévy: “The collective intellect builds and reconstructs its identity through the virtual world that expresses it.” [3]. By taking this statement to the fields of telematic communication networks, we can see that they are becoming, today, an unequivocal locus of events. Digital communication, building innovative knowledge and practices, is an important vehicle for the development of communicational assets. The digital requires an understanding of the syntax, semantics and culture of communication processes, to understand and act on/with them. In this sense, digital communication in cyberspace refers to “(...) an intelligence distributed throughout, incessantly valued, coordinated in real-time, which results in the effective mobilization of competences” [4].

This work intends to present an overview of contemporary marketing applied to HE, connected to the scientific field of services marketing. Moreover, it highlights the main challenges of digital within the HE field, suggesting some methodologies and tools applicable to digital communication in HE, using the case study of an HEI, the IPB. Finally, it provides a discussion of the relevance of such instruments in the success of communication and digital marketing in the context of an HEI.

2 Marketing Higher Education

In their seminal work, Kotler and Fox [5] argued that the philosophy and management of marketing activities are as imperative for HEI as for any company to survive in a market with increasing competitiveness. As such, it is necessary to be aware of trends, market research, needs and desires of students to attract and retain them. Thus, a marketing strategy in HE must fully comply with the following fundamentals:

- The emphasis on customers, meeting their needs and creating value.
- The importance of shared knowledge.
- The cross-functional coordination of marketing activities in the various functions of the organization;
- Respond to market activities by taking appropriate action to implement the defined strategies.

Still, the research and practice of marketing has advanced over the past four decades. Many marketing practices are no longer as simplistic. Today, there is a much more consumer-orientated approach in marketing. Giving greater choices, delivering true value, and winning the hearts and minds of consumers is the key to long-term market advantage [6]. This is especially true in the domain of services marketing fully

¹ The word “bios”, etymologically derived from the Greek (*βίος*), refers to the “means of existence” of a person or society.

applicable in the education context [7, 8], and the marketing of education needs to consider the broader framework provided by a view of services marketing [9].

Education as a process of “obtaining skills” configures a service. Fulfilling a HE programme is a multi-year process, in which the student, together with the teaching and non-teaching staff, acquires, in the physical space of the university or polytechnic, a training that guarantees scientific and social skills, within the different objectives set out when registering with the service provider [7].

Lovelock and Wirtz [6] address the services marketing complexity through the “7 P Model”, which consists of the execution and management of seven factors. The marketing of education is not just about product, place, price and promotion (or customer solution, convenience, customer cost and communication) but also about people, process and physical evidence [9].

Product, as the core service of an HEI, is its education offer and learning process where the experience and its satisfaction is dependent on the student, as a co-creator and, as such, his/her involvement and educational effort will influence his/her perception of value [7].

Price in public HEI has a maximum and is not subject to fluctuating demand and in the decision to attend HE, secondary costs are also decisive (e.g. the costs of accommodation, food, transport, among others) and are the second main inhibitor to further studies [10].

Distribution refers to the place and time when the service is made available to the customer. Vieira [10] states in his report that 34% of secondary school students point to geographical location as an inhibitor in the continuation of studies, mentioning the difficulty in balancing studies with a job that allows to relieve the family’s investment. Recently, Winter and Thomson-Whiteside [11] examined the role of location in building a distinct HEI identity, linking this to the field of place marketing.

It, also, becomes crucial for an HEI to communicate efficiently with several actors, taking into account the most relevant factors for each one. Vieira [10] indicates that the main facilitating factor in continuing for HE are social influences, namely the influence of family members.

HE is a service provided by people for people and the client’s participation is fundamental. The quality of the interaction between students and teaching and non-teaching staff influences the perception of quality, which is why it is necessary for school staff to have not only the technical skills, but also interpersonal skills to create empathy and respect. Fellow customers also play a decisive role. The student’s relationship with other students, the ability to adapt and the relationships generated during the period of attendance determine not only satisfaction but also advocacy at the specific HEI [7].

In education, the service production process implies a standardization of the service, as classes are directed to an entire class but also individualization, as the learning process is individual. However, although HEI have limited control over their teaching processes, there are processes that can be improved and individualized using electronic systems that allow queuing reduction, treatment of bureaucracy and facilitate the learning process, ordering of documents online, purchasing meal vouchers, scheduling visits to service hours and using online platforms for educational content. The inclusion of platforms that allow the co-production of the service to convey utility to the customer increases the customer’s perception of quality [6].

Finally, and of extreme importance, is physical evidence encompasses all the tangible elements that involve the production of the service. The quality of the facilities, as well as the support tools, determine the quality and involvement of the student (the classroom, but also complementary spaces such as the canteen, library, bar and social spaces).

Besides services marketing, it is also relevant to acknowledge that retaining students is becoming increasingly important for HEI, and, such, ideas from relationship marketing should be of great interest to university, where the creation of value should be regarded as an ongoing process over the lifetime of the relationship [12]. The learning experience is hedonic, co-created, emergent, uncertain, unstructured and holistic [7]. Concern for the student experience is significant and increasing, and is widespread in the media [13] with consequences for the student's maintenance and future of each HEI.

The success of any marketing strategy is intimately linked to understanding the target audience and identifying their needs. Successful HEIs are capable of forging fruitful and collaborative relationships with different stakeholders, including business, industry, as well as with research institutions in order to improve their academic branding [14]. Table 1 shows the 16 HE publics suggested by Kotler and Fox [5]. It is essential that a communication plan includes all audiences.

A marketing orientation can help universities compete in the global arena but only if the right principles are well applied [7, 15]. Some even argue that the marketization of HE still seems to pose more challenges than it brings advantages to universities, at least in the less developed world [16]. Coexist inevitable linkages between the marketing and the marketization of HE, with the marketing being driven by the need to increase student numbers and reputation, and the marketization being driven by the introduction of fees as students decide where to spend their time and money for a once-in-a-lifetime opportunity to obtain a degree level qualification [15].

HE has witnessed a paradigm shift in recent years, and the debates around marketing of HE are timely and significant, and discussions around many issues including institutional marketing, branding, corporate communication, identity, image, perceived quality, the student voice and reputation take place at the most HEI across Europe and globally [9, 13, 16]. More knowledge in this contemporary field is yet to know and a world of opportunities co-exist in the digital field.

Table 1. Publics of an HEI

1 - Potential Students	9 - Business Community
2 - Alumni	10 - Suppliers
3 - Enrolled Students	11 - Competitors
4 - General Community	12 - University Councils
5 - Mass Media	13 - Parents and families
6 - Local Community	14 - Faculty
7 - Foundations	15 - Management and Employees
8 - Government Agencies	16 - Supervisory Bodies

Source: Kotler and Fox [5]

3 The Digital Challenges

Nowadays, we have the opportunity to reach our audiences using digital marketing strategies [17] with more appropriate tools and tactics. This is only possible if communicators are aware of communication strategies to engage customers and improve their experience [18].

Previously, HEI and other organizations promoted their services and products in different media only depending on the budget. Today, with the democratization of production and distribution platforms, that are many and increasing, we can see, face to face, supply and demand [19], and the globalized world offers the opportunity to have a digital platform as a common communication tool.

Some challenges are, now, briefly presented and discussed.

3.1 International Students

The annual growth in the number of domestic students has slowed [14], and for this fact, strategies must consider market diversification, and recruit international students [20]. Digital marketing is a fundamental tool for international education [21], and the advances in technology can provide significant opportunities for HEI to leverage themselves through the Internet and web technologies [14].

3.2 Digital Natives

Young people are people who adopt early, and are not afraid to experiment [22]. A strategy initially focused on young people is more likely to succeed as they are an essential group to achieve the so-called “share of mind”, and so brands to convince traditional groups need primarily to convince young people. This generation was exposed from an early age to ICT and they are an integral part of their decision-making process, and for this reason HEI must adapt to these preferences and take advantage of the opportunities present in these trends [23].

3.3 Families as Influencers

Social and family influences, as parents, are the main motivators for students to proceed to an HEI [10, 24] and according to Kotler [22], women, who by nature are analytical and information collectors, do more research and talk about brands. These groups take into account the functional, emotional benefits, as well as the price of a product or service.

3.4 Digital Influencers

According to Kotler [22] connectivity is perhaps the most important element of change in history, and consumers have become very dependent on the opinion of others, This is supported by the proliferation of pages dedicated to evaluations of services and

products, and in many cases the evaluations of other customers are more relevant than the opinion itself or marketing communications. The power of word-of-mouth and e-word-of-mouth is increasing in the final purchase decision. The digital influencers, identified by Kotler [22], are “collectors”, “critics”, “talkers” and “creators”, and when they feel involved with a brand they become “evangelists”, sharing stories about the brand and disseminating positive content on online platforms.

3.5 Social Media

Social media platforms have become an important support for HEI to manage their relationships [25] because this sector depends on improving and managing connections with current and future students, as well as with alumni [26]. These platforms are a very interactive and dynamic media that offers many opportunities. Users seem to value it even more through direct involvement and see this from a sense of belonging through that they also generate content [18]. A report, carried out in 2016, pointed out that half of the HEI candidates use digital tools to compare HEI, and 80% consider conversations held on social networks with HEI students at the time of decision [27].

3.6 Omnichannel

The user’s journey is the sum of all physical and digital interactions [28]. Each stage of the journey represents a possible interaction with the institution and must be highly valued in an integrated communication strategy. In the digital age the path traced by the user is not always straightforward and there are many possible combinations of points of interaction in a physical and digital environment, and the omnichannel strategy aims to integrate several channels to create a perfect and consistent customer experience and consider each channel, not as a closed space but being integrated and unified with others [22].

4 Methods and Results on a HEI

The study of Ferreira et al. [29], presented in this paper, introduces methods and analysis used on the IPB digital communication value proposition, aiming a sustained instrument for further strategic development. This work followed the 8P approach of Conrado Adolpho [30], where he suggests these as phases for a digital strategy to be implemented, allowing organizations to get better target insights and create relevant offers. It lists identifiable variables for a precise approach on the HE market, with potential target audiences, in addition to the current and previous audiences of that HEI. Mixed methods combine quantitative data with qualitative interpretations of the contents in a survey applied to 404 IPB students. Furthermore, this study provides comparisons between IPB and other HEI strategies. Initially, the research and diagnosis assembled, proposed a competition analysis, using a comparison guide, in order to identify the strategies implemented by the main HEI in Portugal. A benchmarking strategy was also carried out, including international and reputed HEI. Then it indicates who are the primary potential target of the IPB, including Portuguese, Brazilian,

PALOP and other international students. For this analysis several personas were created. It discusses the influence of these audiences by the perceptions of current students and alumni. This relationship is due to the importance of WOM and E-WOM, in the context of cyberspace, in the decisions made by people looking for this service experience through the internet.

In the digital communication strategies proposed are included:

- Considering that the IPB is the Portuguese HEI with the largest number of international students, accounting for 26% of the total student body [31], the IPB website must consider a set of strategies, such as production of content oriented to be consumed on different devices, in different locations and from different types of users. It is central to reach the optimization of the website together with other systems of external and internal communication.
- The production of quality content, as well as the customization of such content for each customer profile. Stresses the family influence, with a major role in the choice of HEI, and particularly that of mothers, that being women, are more analytical. The contents, published in the different official channels of the institution, must have detail, and an appropriate depth level to satisfy this information need.
- Systematization and unification of interactions originated on different contact points of potential target audiences to the IPB landing page.
- Articulated and permanent actions with social networks, in order to generate high interaction with different audiences. A survey ranging a sample of 404 IPB students (of a universe of 7500) concluded that only 3.6% of the students do not use social networks. The rest mostly use Facebook, Instagram and Youtube, with a daily frequency of more than an hour a day, confirming others previous studies [32]. LinkedIn is proposed to be incremented in order to intensify the touch points with alumni and transform them into brand ambassadors. This platform connects academic and professional arenas and adds value to the IPB brand. Also, hashtags development and sponsored share is also advised.
- “Content is king” is an often cited quote in the world of online marketing, and content creation, and distribution for different users is especially relevant, when integrated by a digital institutional curator.
- Finally, digital offers real time access to data, being important to use tools like Google Alerts, Google Trends, Google Analytics and others to analyse hashtags and keywords. The work suggests ways of monitoring actions through analytical tools, for better understanding of the actions of dissemination and personalization of the content that can provide accurate data for updating and improvement.

5 Conclusions and Further Development

The consolidation of virtual environments in cyberspace and virtual bios in contemporary societies can no longer be ignored by organizations when thinking about their market strategies. In the field of HEI, this becomes intense and important, considering the research tools on the internet and the means by which consumers make their decisions, when choosing their future professional qualification. In the context of HEI,

recognizing new trends in the dissemination and construction of brand image, as well as their positioning, becomes a need and a challenge. Also, the need to pay attention to teachers and administrative workers and to the local community of an HEI, as entities of dissemination, reception and added value to a brand in HE.

In this paper we seek to provide state of the art review of the main concepts applied to HEI marketing, with a special focus on services marketing. A series of HEI challenges is discussed, as they want to reach targets and stakeholders to increase competitiveness in the face of extreme competition and the multiplicity of options. As an applied object, we look at the methods and results found in a research report applied to IPB digital communication, in Portugal.

Competitiveness among HEI is a topic that will gain relevance in Portugal in the coming years due to the continuous decrease in the number of students in basic and secondary education as a result of the birth rates reduction. The application of a communication strategy reaching potential students is an essential activity in the survival of an HEI, with special emphasis on institutions located in interior areas where the exodus of the population to the coast requires attraction campaigns outside its area of influence and also of international students. In this way, digital is especially important in attracting young students, who have strong mastery of the digital communication tools. This avenue will increase the probability of success of any strategy in this field.

Acknowledgments. The authors acknowledge research support from the report authored by Filipe Ferreira, and supervised by Arlindo Santos and Luísa Lopes (2019) Plano de Comunicação Digital IPB - Relatório de Projeto da Licenciatura em Marketing, Mirandela: EsACT-IPB.

References

1. Stokoe, W.C.: *Semiotics and Human Sign Languages*. Mouton, The Hague (1972)
2. Sodré, M.: *Estratégias sensíveis: afeto, mídia e política*. Editora Vozes, Petrópolis (2006)
3. Lévy, P.: *A inteligência coletiva: por uma antropologia do ciberespaço*. Edições Loyola, São Paulo (2007)
4. Filho, C.T.: Massimo Leone: comunicação digital, on-tologia e semiótica. In: *Revista Matrizes*, São Paulo, Brasil. p. 7 (2019)
5. Kotler, P., Fox, K.: *Strategic Marketing for Educational Institutions*, 2nd edn. E. Cliffs, Prentice Hall (1995)
6. Lovelock, C., Wirtz, J.: *Services Marketing - People, Technology, Strategy*. Pearson Education (2014)
7. Ng, I.C.L., Forbes, J.: Education as service: the understanding of university experience through the service logic. *J. Mark. High. Educ.* **19**(1), 38–64 (2009)
8. Lopes, L.: *Marketing das instituições de ensino superior público: O caso português*. Universidade do Minho, Braga (2002)
9. Newman, S., Jahdi, K.: Marketisation of education: marketing, rhetoric and reality. *J. Furth. High. Educ.* **33**(1), 1–11 (2009)
10. Vieira, D.A.: *Determinantes e significados do ingresso dos jovens no Ensino Superior: Vozes de estudantes e de profissionais do contexto educativo*. Ministério da Ciência, Tecnologia e Ensino Superior (2018)

11. Winter, E., Thompson-Whiteside, H.: Location, location, location: does place provide the opportunity for differentiation for universities? *J. Mark. High. Educ.* **27**, 1–18 (2017)
12. Helgesen, U.D.: Marketing for higher education: a relationship marketing approach. *J. Mark. High. Educ.* **18**, 50–78 (2008)
13. Chapleo, C., O’Sullivan, H.: Contemporary thought in higher education marketing. *J. Mark. High. Educ.* **27**(2), 159–161 (2017)
14. Camilleri, M., Higher Education Marketing: Opportunities and Challenges in the Digital Era (2019)
15. Polkinghorne, M., Roushan, G., Taylor, J.: Considering the marketing of higher education: the role of student learning gain as a potential indicator of teaching quality. *J. Mark. High. Educ.* **27**(2), 213–232 (2017)
16. Maringe, F., Mourad, M.: Marketing for higher education in developing countries: emphases and omissions. *J. Mark. High. Educ.* **22**(1), 1–9 (2012)
17. Scott, D.M.: *The New Rules of Marketing and PR: How to Use Social Media, Online Video, Mobile Applications, Blogs, News Releases, and Viral Marketing to Reach Buyers Directly*. Wiley, New York (2015)
18. Mangold, W.G., Faulds, D.J.: Social media: the new hybrid element of the promotion mix. *Bus. Horizons* **52**(4), 357–365 (2009)
19. Anderson, C.: *The Long Tail: Why the Future of Business is Selling Less of More*. Hachette Books, Paris (2008)
20. James, M.A., Derrick, G.E.: When “culture trumps strategy”: higher education institutional strategic plans and their influence on international student recruitment practice. *Higher Education* (2019)
21. Kannan, P.K., Li, A.: Digital marketing: a framework, review and research agenda. *Int. J. Res. Mark.* **34**, 22–45 (2017)
22. Kotler, P.: *Marketing 4.0*. Edições Almedina (2017)
23. Medveck, D., Jabłońska, M., Simeunović, N.: Benchmarking analysis of the Facebook usage among higher education institutions. In: XVII International Scientific Conference on Industrial Systems (IS 2017) (2017)
24. Broekemier, G.M., Seshadri, S.: Differences in college choice criteria between deciding students and their parents. *J. Mark. High. Educ.* **9**(3), 1–13 (2000)
25. Barnes, N.G., Mattson, E.: *Social media and college admissions: The first longitudinal study*. Center For Marketing Research (2009)
26. Constantinides, E., Zinck Stagno, M.: Higher Education Marketing: A Study on the Impact of Social Media on Study Selection and University Choice. *Int. J. Technol. Educ. Mark.* **2**, 41–58 (2012)
27. Chen, E., DiVall, M.: Social media as an engagement tool for schools and colleges of pharmacy. *Am. J. Pharmaceut. Educ.* **82**(4), 6562 (2018)
28. Lemon, K., Verhoef, P.: Understanding customer experience throughout the customer journey 1. *J. Mark.* **80** (2016)
29. Ferreira, F., Santos, A., Lopes, L.: *Plano de comunicação digital IPB - Relatório de Projeto da Licenciatura em Marketing*. EsACT-IPB, Mirandela (2019)
30. Adolpho, C.: *Os 8 P’s do Marketing Digital- O guia estratégico do marketing digital*. Texto Editores (2019)
31. IPB: *Plano Estratégico – 2018–2022* (2018)
32. Kemp, S.: *We are social - digital 2019* (2019)