



OU-I 2016

REPORT

University-Business
Observatory

EXECUTIVE
SUMMARY

INTRODUCTION

The University-Business Observatory of the Fondazione CRUI seeks to promote partnerships between the academic and the business worlds and foster mechanisms whereby the labour world, research and young people can cooperate.

In order to contribute to such a demanding task, it was decided that for the second Report of the Observatory it would be productive to set up four working groups that would focus on four issues deemed to be topical and important at this point in time by all observers: Apprenticeship, Industrial PhDs, Professionalization paths and Cross-sector Skills.

- *Working Group 1: 'Apprenticeship'. Coordinator: Prof. Claudia Faleri (University of Siena)*
- *Working Group 2: 'Industrial PhD', Coordinator: Prof. Barbara Pojaghi (University of Macerata)*
- *Working Group 3: 'Professionalization paths' (Job oriented). Coordinator: Prof. Vincenzo Zara (University of Salento)*
- *Working Group 4: 'Cross-sector skills'. Coordinator: Prof. Livia De Giovanni (Luiss University), Dr. Ida Sirolli (Telecom Italia), Prof. Claudio Melacarne (University of Siena)*

Each Working Group produced Reports that were the basis for drafting the main chapters of the 2016 Report. The work was the result of ongoing discussions among the members of the groups, of the precious coordination of the Coordinators and of the suggestions and comments offered by the Steering Committee and the Group of Experts.

The 2016 Report is supplemented by an information sheet on the PhD-ITalents Project, an important and innovative initiative of the MIUR, of which the Fondazione CRUI is the implementing body, in cooperation with Confindustria. Through the three-year funding program that covered two-thirds of the cost for hiring over 130 PhD researchers, PhD-ITalents seeks to promote innovation in companies, develop a new placement model for PhD researchers, and understand what are the factors that could induce businesses to pay greater attention to the PhD programs.

The closing pages of the Report present some recommendations on the issues dealt with and suggest actions and initiatives for change and improvement that are put to the attention of the relevant bodies and institutions.

During this year, the Observatory has witnessed the implementation of some innovations that have undoubtedly offered added value to its activities in terms of results achieved and progress made.

- 1 *The analyses of the Working Groups were enriched by empirical surveys carried out in the Universities associated with CRUI; the considerable involvement of the universities was borne out by the high response rate to the surveys.*
- 2 *The number of representatives from the business and professional worlds attending the meetings of the Observatory increased as did the participation in the drafting of the documentation and of the final Report. The contributions provided by TIM, ENI, ENEL, UnionCamere, CNPI and Confindustria were precious for attaining the goals of the Observatory.*
- 3 *A successful outcome for the Observatory this year was the improvement in relations with the institutions, in particular with the MIUR and the Anvur and the representatives of some Regions, that ensures the much needed interaction and the expected outreach.*
- 4 *In order to disseminate the results of the researchers produced by the Observatory, it was decided to start the journal "Quaderni dell'Osservatorio". In particular, the first issue of the "Quaderni" is dedicated to cross-sector skills for which input was provided by the studies performed by some of the members of the Working Group of the Observatory.*

We would like to thank all the colleagues and experts who participated with interest and enthusiasm in the launching of this project and who, through their significant contribution, made this result possible.

Besides the members of the Steering Committee and the Group of Experts of the Observatory we would like to acknowledge the coordinators and members of the Working Groups, who with passion and determination produced contributions that were extremely useful for gaining a better understanding of the situation through the four themes they proposed that are undoubtedly of key importance in the relationship between Universities and Business.

We are also grateful to the Director of the Fondazione CRUI, Dr. Emanuela Stefani and her collaborators for the work they did for the Observatory, and in particular, Natalia Paganelli, Marina Cavallini, Francesca Trovarelli, as well as Massimo Carfagna and Giovanni Lembo for the precious contribution they afforded once again this year to the drafting of the Report.

Professor Gaetano Manfredi
President CRUI

Professor Angelo Riccaboni
*Coordinator of the University-Business
Observatory of the Fondazione CRUI*

EXECUTIVE SUMMARY

¹ Information about the University-Business Observatory is available on www.universitaimprese.it

The University-Business Observatory, established by the Fondazione CRUI in 2014 with the participation of university experts and representatives of the economic and business worlds, has the aim of fostering cooperation and dialogue between the labour world, research and youth¹.

On the basis of the indications of the Steering Committee, the 2016 Report focuses on the following issues:

- 1 Apprenticeship in Advanced Education and Research
- 2 Industrial PhDs
- 3 Professionalization paths
- 4 Cross-sector skills

The 2016 report contains the conclusions of the four ad hoc working groups, made up of academicians and representatives of the institutional and business worlds, and the input provided by the Steering Committee and Group of Experts.

For each of the issues dealt with, the Report presents the regulatory framework, the status of the matter in

our Country and the questions to be dealt with in order to improve dialogue between Universities and Businesses (Chapters 1, 2, 3 and 4). The 2016 Report also presents the results of some empirical surveys carried out through questionnaires that proved to be particularly useful to understand the situation in practice. The questionnaires had a high rate of response and were used to create communities of experts from virtually all Universities on the four themes. The interest shown constitutes an important signal especially considering the low rate of response that this type of instrument is usually associated with, and is a promising indication with regard to the future of the Observatory.

It is worth mentioning that this year the activities of the Observatory attracted the attention of other institutional players and leading companies to the advantage of the work of the Steering Committee, of the Group of Experts and of the individual Working Groups.

The results can be summarized as follows.

APPRENTICESHIP IN ADVANCED EDUCATION AND RESEARCH

MAIN EVIDENCE

- The diffusion of apprenticeship contracts in the areas of advanced training and research offered by the Universities is still rather limited; contracts are available mainly in the Regions which provide contributions, financing and/or incentives.

- PRINCIPAL FINDINGS
- Contracts were offered mainly for 1st level university professionally-oriented degrees. There are very few or even no contracts at all for first and second-cycle degrees, for single-cycle degrees, and for access to professions that come under a professional body requiring accreditation in order to be allowed to practice
 - Apprentices are hired essentially for highly qualified professional profiles; most apprenticeship contracts concern the field of Economic Sciences and Statistics, Mathematics and Computer Science, Industrial Engineering and Information Engineering.
 - Apprenticeship contracts involved mostly SMEs.
- PRINCIPAL FINDINGS
- In general there is a lack of information about advanced training and research apprenticeship contracts, and there is a need to differentiate apprenticeship from internship.
 - There is a need to deepen the reasons why every year the contracts signed are less than those that are offered.
 - On the side of the Universities, there are bureaucratic and administrative criticalities (the procedure is long-winded, the students' curricula are rigid)
 - Regarding the Universities there are also management and relational criticalities (mainly difficulties in connecting the university world with the business world, teachers are not sensitive to the importance of apprenticeship and consequently they are not willing to dedicate time to all relevant activities, poor awareness by the students, they do not see apprenticeship as a real opportunity for gaining access to the labour world).
 - On the side of the businesses there are criticalities mainly for the lack of a Consolidated Act that gathers all the laws, poor knowledge about the incentives (economic and regulatory).

INDUSTRIAL PHDS

- MAIN EVIDENCE
- Growing awareness at national level of the importance of Industrial PhDs to promote innovation and increase competitiveness.
 - Industrial PhDs and, more in general, cooperation with businesses are a useful instrument for upgrading the professional qualification of staff within the companies and for the creation of professional paths in alternative to the traditional academic courses.
- PRINCIPAL FINDINGS
- Need to enhance the Industrial PhD in general and in particular in the humanities and social disciplines.
 - Need for greater clarity of the concept of 'Industrial PhD' in order to improve communication.
 - Lack of regulatory clarity that would be helpful in understanding how to go about the activation, organization, recognition and accreditation of Industrial PhDs.
 - Difficulty in having a balanced educational curriculum where the roles of the universities and of businesses are balanced throughout the educational process.

- Need for more dialogue among the partners with the **involvement of the companies in all the steps of the process** (identification of the research theme, design, selection of students, training, presence on teachers' boards and evaluation).
- **Difficulty in establishing forms of cooperation with businesses over time**, collaboration in ROP and/or European projects and, in general common interest in research.
- Need to facilitate the access of **company personnel to PhDs**.

PROFESSIONALIZATION PATHS

- MAIN EVIDENCE
- In recent years, Italy has made **important progress in creating tertiary education programmes** to put students on a fast track to the labour market (e.g. the Higher Technical Education Institutions - ITS).
 - **Tertiary job-oriented education (professionalization) is a concrete opportunity for Universities to invest in**; they can create professional profiles for which there is a real demand in the labour world.
 - The **current regulatory framework** (DM 270/ 2004 and subsequent Ministerial Decrees of 2007) **offer sufficient room for manoeuvre** for adjusting the current three-year university courses to become more job-oriented.

- PRINCIPAL FINDINGS
- **Mismatch between demand for specific technical-professional skills and the supply of trained human capital**, in particular in some sectors and in the university world.
 - **The channel of the Higher Technical Education Institutions (ITS) is capable of attracting only a small percentage** of people potentially interested (in Italy less than 1% of the population holds a job-oriented bachelor's degree versus some 8% in the OECD countries).

CROSS-SECTOR SKILLS

- MAIN EVIDENCE
- **Growing interest by the EU in the issue of the 8 key skills** and some of these fully match the cross-sector skills required by companies: numeracy, literacy. Digital skills, entrepreneurship.
 - For employment purposes, **75% of the companies deem that cross-sector skills are as important** as technical-professional skills.
 - A curriculum is considered to be 'excellent' by businesses if it develops skills that go beyond the subjects that are taught.
 - **Many universities (74%) are testing out** activities and courses that are functional to learning cross-sector skills.

- PRINCIPAL FINDINGS
- **Difficulty to refer to a single taxonomy** capable of identifying characteristic and levels of complexity of each cross-sector skill.

- Need to give adequate value to 'digital' competence as one of the most strategic cross-sector skills.
- Low percentage of Universities that have promoted training activities for the teachers on didactic innovation (during the last two years only 12% of the Universities have promoted training activities for their university teachers).
- Gaps in the skills of Italian students/adults in the main key skills: numeracy, literacy, digital skills (PISA and PIAAC test, DESI index).

On the basis of the findings, the proposals of the Observatory can be summarized as follows.

U-B OBSERVATORY PROPOSALS

- 1 Given the importance of the issues dealt with the 2016 Report and the high representativity of the Working Groups of the Observatory, one of the proposals is to maintain the four working groups on Apprenticeship, Industrial PhDs, professionalization paths, cross-sector skills, in order to monitor the changes under way, promote initiatives to support and strengthen the interaction with the main institutional players (in particular MIUR, ANVUR, ISTAT, representations of businesses and of professional associations, and Alma Laurea), in close connection with the CRUI Committees and working groups engaged in similar matters. The Observatory will now involve other important players like the Association for Personnel Management, the State-Regions Conference and other Ministries besides the MIUR.
- 2 Establish a network of Universities, institutional bodies and social partners for the promotion of apprenticeship in advanced training and research, making sure that this network will coordinate with the Placement network that is in the process of being set up.
- 3 Strengthen institutional communication addressed to students and families on the potential of apprenticeship and on the importance for students to take part in training activities other than classroom teaching (apprenticeships, internships, Erasmus).
- 4 In 2017/18 every University should set up at least one experimental "job oriented" degree course where the emphasis will be on ensuring that cross-sector skills are acquired.
- 5 Take note of and expand the pilot experiences in some Italian Universities on innovative teaching.
- 6 Focus the next Report of the Observatory on the experience achieved by the companies that have engaged in strengthening the University-Business partnerships and in particular the Industrial PhDs so as to highlight, from the business standpoint, the enabling factors that can produce interesting results in terms of innovation, company competitiveness and enhancement of university education and research.

THE STRUCTURE OF THE OBSERVATORY

Steering Committee: headed by the Observatory Coordinator, the Steering Committee is the body that plans the activities of the Observatory. It comprises experts and representatives of institutions and businesses that are particularly interested in the dialogue between universities and the businesses world.

Prof. Angelo Riccaboni
Observatory Coordinator,
President of the Fondazione CRUI

Prof. Giorgio Alleva
President ISTAT
National Statistics Institute

Dr. Manuela Arata
President Genova Makers' Village

Dott. Eugenio Aringhieri
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Dr. Carlo Borgomeo
President Fondazione CON IL SUD

Dr. Mario Di Loreto
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Prof. Enrico Giovannini
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Prof. Andrea Graziosi
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Prof. Francesco Profumo

President IREN S.p.A.

Dr. Carlo Purassanta

General Manager
Microsoft Italia

Dr. Laura Rocchitelli

President Gruppo Rold S.p.A.

Group of Experts: advisory body to the Steering Committee. It has the task of providing opinions on and contributions to the various areas of expertise of the Observatory.

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CEO, Invitalia
National Agency for Investment
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Director Innovation
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Prof. Vincenzo Zara

Rector of the University of Salento
Coordinator of the Didactic
Committee of CRUI

Working Groups: consisting of scholars and operators, the Working Groups have the task of implementing the activities identified by the Steering Committee by carrying out analyses and in-depth studies. The four Working Groups for the 2016 Report comprised the following members.

1 "Apprenticeship", coordinated by Prof. Claudia Faleri (University of Siena).

Arnone Andrea (University of Florence), Balsamo Alfonso (Confindustria), Barni Monica (Tuscany Region), Bellandi Marco (University of Florence), Culcasi Massimo (Eni Corporate University), Forno Silvia (University of Turin), Giambalvo Ornella (University of Palermo), Marrani Giuseppe (University for Foreigners of Siena), Orlandini Giuseppina (University of Trento), Pasquali Oscar (Ministry of Education, Universities and Research - MIUR), Persico Stefania (Suor Orsola Benincasa University of Naples), Piana Michele (University of Genoa), Reina Rocco (Magna Graecia University of Catanzaro), Rossi di Schio Eugenia (Alma Mater Studiorum University of Bologna), Settembre Maura (University of Pavia), Silli Patrizia (University of Macerata), Sirolli Ida (Telecom Italia s.p.a.), Spigarelli Francesca (University of Macerata), Trovarelli Francesca (University of Siena).

2 "Industrial PhD", coordinated by Prof. Barbara Pojaghi (University of Macerata).

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3 "Professionalization paths", coordinated by Prof. Vincenzo Zara (University of Salento).

Massimo Carfagna (Fondazione CRUI), Massimo Culcasi (Eni Corporate University), Francesco Ferrante (University of Cassino and of Lazio Meridionale), Marzia

Foroni (MIUR), Angelo Guerriero (AlmaLaurea Inter-University Consortium), Rocco Reina (Magna Graecia University of Catanzaro), Roberto Setola (Campus Bio-Medico University of Rome), Ida Sirolli (TIM S.p.A.), Roberto Torrini (Bank of Italy), Francesca Trovarelli (University of Siena).

4 "Cross-sector Skills", coordinated by Prof. Livia De Giovanni (Luiss University), by Dr. Ida Sirolli (TIM S.p.A.), and by Prof. Claudio Melacarne (University of Siena). Elisa Attili (University of Macerata), Marina Cavallini (CRUI), Massimo Culcasi (Eni Corporate University), Sandra D'Agostino (ISFOL), Gianluigi de Gennaro (Aldo Moro University of Bari), Guido Fiegna (Polytechnic University of Turin), Silvia Forno (University of Turin), Paolo Ghionni Crivelli Visconti (Suor Orsola Benincasa University of Naples), Ornella Giambalvo (University of Palermo), Angelo Guerriero (AlmaLaurea University Consortium), Mario Mezzanzanica (Bicocca University of Milan), Paola Nicolini (University of Macerata), Donatella Padua (University for Foreigners of Perugia), Franco Patini (Digital Confindustria), Stefania Persico (Suor Orsola Benincasa University of Naples), Marco Pini (Sistema Camerale Servizi srl), Nicola Redi (Vertis SGR), Raffaella Rumiati (ANVUR), Stefania Sabatini ("Foro Italico" University of Rome), Francesca Sica (Confindustria), Alessandro Silvestri (University of Cassino and of Lazio Meridionale), Andrea Villarini (University for Foreigners of Siena), Francesca Trovarelli (University of Siena).

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