

Third Mission Activities & rankings: the University of Bologna Experience

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The Italian National Agency for the Evaluation of the University System and Research (ANVUR), in line with main international trends, has identified two main areas of application for the Third Mission:

Valorization of research: transformation of goods supported by public funding (public research) into private goods (economic and commercial applications)

Production of public goods: the impact of universities on society at large, through the production of public goods of social, cultural and educational applications.

In 2015, ANVUR launched a second national survey on the third mission, the so-called SUA-RD (Part 3 Third mission) which involved all Italian universities down to the level of a single department and, in some cases, of each faculty. In the context of *valorization of research* the dimensions investigated are the intellectual *property* (inventive activity, portfolio management, exploitation; *academic spin-off companies* (revenues, job creations, demography, growth rate, collaboration with the university, exit strategies); *third party funding* (third party research, service and teaching, institutional funding, industry funding).

A specific attention is devoted to “collaboration with intermediation agencies”, namely the intermediary structures of the university with the territory, in particular those dedicated to carrying out research enhancement activities (e.g. technology transfer, industrial liaison and relationships with companies), incubation of new enterprises and placement. In particular, the offices responsible for technological transfer activities, the facilities dedicated to the work of students and graduates, business incubators, consortia and associations for the purposes of the third mission and the science parks are included in the survey.

Moreover, compared to the first survey, the picture is enriched by a general section on the articulation of the activities of Third Mission in dedicated structures of the university. These structures can be internal (offices or centers) or external. External structures may have different legal form (consortium, company, foundation, association, etc.) and the participation in capital or assets by the university is not required, but the existence of a formalized collaboration is sufficient (for example, with special agreements) in such a way as to constitute an effective involvement of the university in the operational activities. In the field of *public goods*, the dimensions investigated by Anvur are more diversified: *cultural heritage* (museums, archaeological excavations, historical buildings (conservations and access); *contribution to public health* (clinical experimentations, bio-banks and clinical research centers); *lifelong learning* (volume of LLL provided); *public engagement* (non-profit activities with educational, cultural and social value and their objective, committed resources and impact).

Just on November 2018, ANVUR released the national guideline that Italian Universities must follow in order to complete the sections concerning Third Mission activities survey for 2015-2017. The document (in Italian) can be found at the following address: http://www.anvur.it/wp-content/uploads/2018/11/SUA-TM_Lineeguida.pdf.

While the section concerning the valorization of research has not been changed, the part concerning production of public goods has been slightly amended: 1) the analysis of cultural heritage have been extended to libraries and archives; orchestras, choirs and theaters. 2) MOOCs have been included as public goods inside the lifelong learning dimension. Moreover, a specific attention is due to Public Engagement initiatives, described as:

- organization of concerts, theatrical performances, film festivals, sporting events, exhibitions, exhibitions and other public utility events open to the community;
- publications (paper and digital) dedicated to the non-academic audience; production of radio and television programs; websites and other social media communication and dissemination channels (excluding the University's institutional website);
- organization of initiatives to disseminate research results (eg interaction events between researchers and public, debates, festivals and scientific cafés, on-line consultations);
- health protection initiatives (eg information and prevention days, screening and awareness campaigns);
- activities involving and interacting with the school world (eg simulations, hands-on experiments, other laboratory activities, innovative teaching, children university);
- participation in the formulation of programs of public interest (policy-making);

This public engagement categories' classification is considered but not exhaustive. Therefore, the activities of public engagement that do not enter within the proposed categories, will be included as "other institutional initiatives".

The SUA-RD

The above mentioned third mission national data have been collected by ANVUR through an online survey, the so called SUA-RD (annual form describing the departmental research) and made public through the website of the Agency itself. ANVUR collected the University of Bologna data collected in 2015 and reported in the form SUA-RD 2014 are shown in Figures

SUA-TM 2014	DATA
Patents	50
Plant Privatives: New privatives in the portfolio	17
Plant deprivatives: new privatives in the portfolio and licensed	12
Plant Privatives: Total revenue for new varieties in the portfolio	€ 546.004
Number of new plant variety rights in the year	1
Spin-off companies	23
Commercial activities	€ 23.261.292,02
Revenue from activities under contract	€ 15.302.450,18
Current transfers from other parties	€ 4.372.684,48
Transfers for investments from other entities	€ 1.991.739,92
Public Engagement Monitoring initiatives (limit 5 for the Athenaeum; 3 for each Department)	5 Athe. 99 Depts.
Archaeological excavations	27
Museum poles: number of museum sites	15
Historical buildings: number of square meters	369.133
Historical Buildings: investments in the year for maintenance	€ 3.995.435

1 and 2.

Figure 1 AMS University SUA-RD 2014 (Third Mission data)

SUA-TM 2014	DATA
Clinical trials in progress during the year	247
Clinical Research Centers and Bio Banks	0
Lifelong learning in Medicine	11
Life long Learning	In 17 departments
Co-designed Curricula	2
Technology transfer office	1
Placement Office	1
Incubator	2
Consortia and associations for the third mission	34
Science parks (collaboration with)	2

Figure 2 AMS University SUA-RD 2014 (Third Mission data)

Third mission evaluation: the VQR (Evaluation of Research Quality)

As described in the case study of the University of Bologna by Rosa Grimaldi and others (see the essential reference page. 5), in 2003 Italy introduced its first national research assessment exercise, the so called VQR, which has been repeated in 2011 and 2016. In addition to research productivity, in the last round of this exercise, there was a more thorough attempt to consider third mission activities as well. The University of Bologna is ranked 7th (out of 67) in IP management, spin-off companies, and contract research, with less satisfactory evaluations on the management of cultural goods and public engagement activities. Figure 3 details the spin-off assessment, where *portafoglio* (portfolio), *occupazione* (employment impact), *fatturato* (economic impact) are positive, while *investimenti/capitale* (investment/capital) with *crescita* (growth dynamic) are the University spin-off companies weak points, according to the ANVUR assessment.

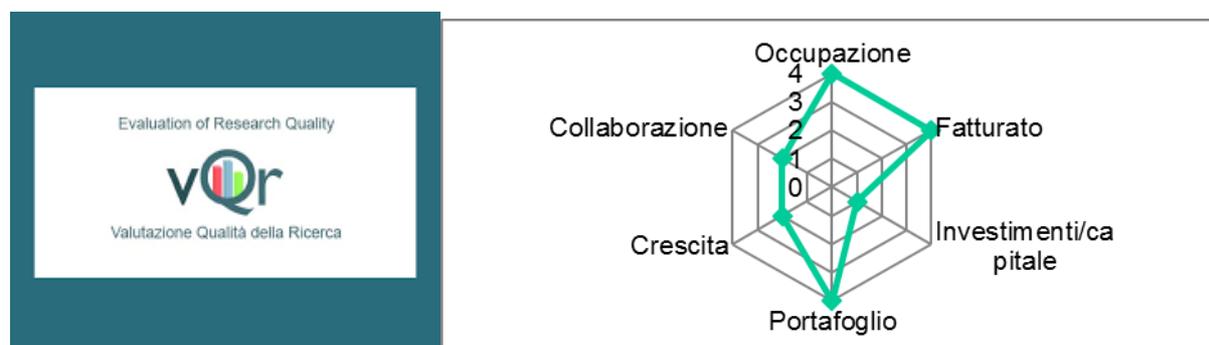


Figure 3 ANVUR evaluation of the University of Bologna Spin Off activities 2011-2014

The Third Mission in the University's strategic plan

In this national framework, the University directs its social responsibility in two directions described in the strategic map (figure 6) 2016-2018: promoting cultural development plus economic-social innovation (C1), strengthening relations with the many stakeholders at national and international levels (C 2).

Each *strategic objective* is broken down into *basic goals* (4 for C.1 and 3 for C.2), which in turn are monitored by quantitative or qualitative indicators. For example, basic goal C.1.1 "Qualifying and enhancing vocational and lifelong learning programs" is associated with the indicator "T.01 Number of students involved in vocational and lifelong learning courses" (figure 4).

STRATEGIC GOAL	BASIC TARGET	INDICATOR
C.1 To promote cultural development plus economic and social innovation	C.1.1 To qualify and enhance professionalising and permanent study processes and courses  	T.01 Number of students involved professionalising and lifelong learning programmes

Figure 4 Example of Third Mission "basic target" and indicator

Every year in June the University monitors the indicators reporting the outcome to the governing bodies. In the last four academic years, the number of students enrolled in courses of Higher Education, Continuing Education with credits is permanently above 2000.

The departments' third mission

The University has 32 research departments. The University Quality Control (*Presidio*) has been promoting since a couple of years the implementation of a quality management system for research; each University department plans, implements and monitors its own objectives, provided that they are in line with those of the University Strategic Plan.

For example, the Department of Education Sciences has established a third mission objective converging towards that of the university: to enhance and qualify life lifelong learning courses. The departmental goal is aligned to the University basic goal C1, and it is reached through the participation to the University's plan for the high school teacher professional training. The indicator metric are "number of courses organized; number of high school teachers involved".

Monitoring and reporting initiatives for the third mission

In 2018, Bologna established the *Observatory for the Third Mission*, a collegial body with the task of elaborating and updating principles, criteria and methods for the evaluation of the third mission activities carried out in the University and of encouraging and sharing good practices consistent with the institutional objectives. The evaluation criteria, aligned with the strategic plan of the University, will be public and consistent With international and national models of assessment, in particular those defined by ANVUR and the indicators adopted by the national system of self-assessment, evaluation and accreditation (AVA).

Social responsibility report

In the digital society, where communication is quickly forgotten, it is necessary to ask why it is still useful to publish documents as substantial as a Social responsibility Report. The reason for this is its being an instrument of transparency both internally and externally, year after year improved thanks to the feedback received from its stakeholders through a questionnaire to its readers. This report has been prepared in accordance with the GRI Standards: 'Core Option'. GRI is an independent international organization that has pioneered sustainability reporting since 1997.

Reporting on United Nations Sustainable Development Goals

Since 2016, the University has adopted an innovative way to report the contributions generated by its institutional activities, including training, research and social and public engagement, to align with the United Nations' 17 Sustainable Development Goals (SDGs) achievement framework. The report, prepared by the University's Technical Scientific Committee for Social Reporting in collaboration with the University's academic and administration community, is released yearly and disentangle the direct and indirect impact produced by the university through teaching, research, third mission, and institutional activities.

As the Bologna case study mentions, since 2016, the University has a reporting tool, designed to offer a new measuring approach that allows to read the contribution of the different institutional activities carried out to achieve its sustainable development goals.

For example, for *Goal 11 Sustainable cities and communities*, the University's third mission activity is reflected in terms of: regional distribution of public engagement events and their diversity (among which seminars and conferences predominate), and in terms of university museum opening hours and visitors. GreenMetric data on smart buildings and green areas are also reported.

UI GreenMetric is an international ranking of universities, published by the Universitas Indonesia of Jakarta, focused on the evaluation of their environmental sustainability. The assessment is based on a list of items grouped including six areas: Setting and Infrastructure, Energy and Climate Change, Waste, Water, Transportation and Education. In the last edition of the ranking (2017) the University has been ranked at position 29th in the world, and at 1st position in the Italian rank. While acting as the National coordinator of Italian Hub of GreenMetric network.

Alma 2021

Alma2021 sets out the actions that are intended to implement the Strategic Plan and essentially summarizes the planning process followed by the University Governing Bodies and the Departments. This website reports on the policy decisions made, the processes of governance implemented within the academic community and outside, the commitments made and the results actually achieved.

In the context of social and public engagement, the main projects underway are reported and more specifically some activities, such as the initiative *Proof of Concept* a fund of 160,000 euros allocated to finance the precompetitive development of research results protected by

University patents. The initiative aims to increase the stage of development and technical and commercial validation of inventions.

The Museum system (SMA) social report

The University Museum System includes 14 entities, between museums and discipline specific collections such as: the European Museum of Students (MEUS), with a unique collection of more than 400 objects, manuscripts, sculptures covering 800 years of students' history at the University of Bologna; the zoology museum offering of the most important collection in the country; the Museum of Specola offering the possibility to see several tools and instruments used in the past for astronomical observations. It is targeted to supporting education activities for students, the conservation of artifacts, the restauration and cataloging for research and study purposes. It promotes in different forms of public engagement activities and the spreading of scientific culture in collaboration with public, private, national and international institutions. Every year 130.000 visitors access its facilities offering about 65 educational programs (laboratories and guided tour for students and for citizens) and 95 events and specific activities tailored for different groups of the 5-16 years range. The number of visitors has raised up to 37% since 2017. The SMA report gives emphasis to its contribution to the university third mission.

A selection of Third Mission initiatives from the “University of Bologna” case study

The University is one of the founders and shareholders of the Regional Coordination Agency for Technological Innovation, ASTER, which steers all the activities of the ER High Tech Network, and acts as the Scientific Advisor for the Strategic Plan of the large Bologna Metropolitan Area. The Emilia-Romagna High Technology Network leverages on the activities of several new laboratories dedicated to supporting the innovation process of the regional economy clustered in 6 areas (agriculture, constructions, energy and environment, ICT and design, mechanics and materials, life sciences). The University is active in all these areas through its Interdepartmental Industrial Research Centers - CIRI, which involve more than 400 faculty members belonging to 24 different Departments.

A particularly successful initiative is the *Start Up Day*, a get-together event that the University organizes once a year in Bologna together with a student association. Another initiative targeting PhD candidates, fellows and young researchers, called *Launch Pad*, is organized for scouting innovative ideas with high growth potential in the creation of new businesses. A business start-up program is also implemented by the University in collaboration with its incubator *AlmaCube*, founded in 2001 as the first one in the country together with the one launched by the Politecnico of Turin.

A brand-new maker space (*AlmaLABor*) will open by the end of 2018, targeting mainly students and young scholars and offering spaces equipped with different tools for prototyping. *AlmaLABor* will collaborate with some of the companies which already have institutional long-term agreement with the University and are interested in corporate acceleration.

Furthermore, in 2018 the University launched a *Competence Center Industry 4.0* selected by the Ministry of Industry and Economic Development through a competitive call and founded with a grant of € 8ml. The Center will offer dedicated facilities and training activities to companies, and will be involved in the implementation of innovation projects, industrial research and experimental development on innovative technologies such as Big Data,

Industrial Internet of Things, Industrial Cloud systems, Cyber Security, robotics and additive manufacturing (3D printing).

In 2015, the new Rector nominated a Vice-Rector for Entrepreneurship; in 2017 she started *AlmaEClub* to increase the awareness on entrepreneurship and promote a focused networking on the matter among its faculties. More than 200 faculty members coming from all Departments join *AlmaEClub*, getting together every other month share ideas (and contribute) on specific projects in entrepreneurship carried out in the University.

Essential reference:

- Strategic plan 2016-2018 <https://www.unibo.it/en/university/who-we-are/strategic-plan>
- Reporting on United Nations Sustainable Development Goal <https://www.unibo.it/en/university/who-we-are/report-on-un-sdg>
- Alma goals <https://site.unibo.it/almagoals/en/planning-and-budgets>
- Alma2021 <http://alma2021.unibo.it/en/alma-2021-homepage>
- Sistema Museale di Ateneo Bilancio Sociale 2018 <https://sma.unibo.it/it/chi-siamo/il-bilancio-sociale-del-sistema-museale-di-ateneo> (in Italian)
- Case study of the “University of Bologna” Invited Report prepared for the Regional Innovation Impact Assessment Framework of universities (RI2A) workshop, Brussels, September 24th, 21081 Prepared by Rosa Grimaldi, Department of Management, University of Bologna Irene Sala, Department of Management, University of Bologna Maurizio Sobrero, Department of Management, University of Bologna [we thank the authors for sharing the paper with us; corresponding author: rosa.grimaldi@unibo.it].

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