

SCUOLA NORMALE SUPERIORE DI PISA

Synthesis of the Programme Development Plan

2019-2024

in accordance with MIUR note no. 11024 of 8th July 2019

Summary

1. General framework

1.1 Mission, Vision and values

1.2 SWOT analysis

2. Strategic objectives

2.1 Services to students

2.2 Doctoral training

2.3 Social mobility and gender gap

2.4 International placing of the Scuola and development of the alumni network

2.5 Strategies for the recruitment of academic and research staff

2.6 Strengthening and development of participation in networks, in national and international projects for the funding of research and in initiatives for technological transfer

2.7 Development of Open Science

2.8 Policies and actions for the impact of the Scuola in the Third Mission

2.9 Strategies for economic sustainability and sustainability of the campus

2.10 Processes of quality assurance and strategic monitoring of the Scuola

General framework

Mission, Vision and values

The **Mission** of the Scuola is «to promote the development of culture, teaching and research in the fields of the mathematical and natural, human and social sciences by exploring their interconnections». In order to carry out this mission, the Scuola «pursues the highest possible level of training – university and post-university, permanent and recurrent – by valorising predominantly the relationship between training and research, also in order to achieve improved interaction with the outside world»¹.

This mission is the very identity of the Scuola, contributing to the growth and progress of the country and of Europe itself, creating the conditions for the training of highly qualified researchers and citizens who are aware of the values of an open and democratic society, prepared to carry out the duties expected of the executive class.

Over time, the Scuola has been able to adapt to the changing social and political conditions and hence is today a place of research and training recognised at national and international levels, where student talent, merit and capability represent the founding values of its identity, and where social provenance, economic condition and religious or political beliefs are not decisive factors for the choice of a course of study and research, in full respect for the freedom and rights pertaining to a community of liberal and democratic study.

On the basis of these premises, the **Vision** that animates the Scuola Normale is that of a place in which the cultural, scientific and technological challenges of the 21st Century find fertile and open ground of a particular nature, thanks to which the students can contribute to a historical moment characterised by migrations, climate change and a pervasiveness of technology requiring a high level of critical and scientific knowledge in order to navigate through the complexity in which humanity is immersed.

The shared process for the definition of the Plan

Between the end of 2018 and the start of 2019 the Scuola brought into play the instruments specified in the Statute to tackle the political governance crisis, prompting the majority of the members of its community to request a change in the prevailing political direction. May saw the start of the mandate of the new political direction. Everything happened within the framework of the process of accreditation of the Scuole with special status launched by MIUR - a process which for our Scuola was to coincide with the federation, launched on an experimental basis on the occasion of the 2016-2018 planning, with the Scuola Superiore Sant'Anna of Pisa and the Scuola Superiore Universitaria IUSS of Pavia.

Within a short time frame, from the electoral campaign to the present, the Directorate has endeavoured to bring about, through numerous meetings both formal and informal, a participatory and informed process of defining the strategic objectives that constitute the Programme Development Plan. The instrument of participation was a natural choice, coherent with the principles characterising the historical identity of the institution and in line with the values expressed in the Director's mandate programme, while at the same time a harbinger of the dialogue necessary for mending the fractures created within the community in recent times.

The Directorate first perused the context and state of the art of the Scuola's activities, by means of an analysis of the institutional reports (such as the performance reports, Evaluation Team reports, financial reports and research activity reports), the three-year plan of personnel requirements and the applications made by the Quality Control Team and by the Peer Commissions. In addition, in-depth ad hoc analyses were carried out of topics of particular interest (economic and financial sustainability, activities of federation, ranking and national and international comparison, data and general official guidelines of the Ministry² and the recent indications in relation to the accreditation of the Scuole with special status³), so as to obtain a more accurate picture of the context of reference, both internal and external (2. Context Analysis: the Scuola within the national and international university system).

Context analysis enables the identification, by means of the SWOT matrix⁴, of the Scuola's strengths and weaknesses in the pursuance of its Mission in teaching, research and Third Mission activities and of the relative opportunities and threats for their efficacious and efficient execution. In addition, the analysis provides important food for thought leading to further in-depth analyses and future strategic decisions for the Scuola, in relation to its role in the national and international context.

Special mention should be given to the renewal of the composition of the Advisory Board, established in accordance with art. 17, para. 5 of the Statute of the Scuola as a technical-scientific committee composed of high-profile personalities from the academic and cultural world to whom the Directorate intends to entrust an important role in the pursuance of actions connected to the strategic lines identified in the shared Plan.

Participation in the definition of the Strategic Objectives of the community of the Scuola is not a mere formal gesture: it is intended as a way to reinforce the capacity of the organisation to construct, plan and hence grow. The sharing implies an important and onerous consequence: it instils responsibility. This means that each member of the Scuola's community must play its part in the planning of the changes, contributing responsibly to the pursuance of the shared objectives. The cycle of participation will close, as always, with the sharing of the evaluation and reporting of the results obtained with the various members of the Scuola, both academic and administrative.

To facilitate sharing of the pursuance of the strategic objectives and to promote a sense of responsibility among all the members of the community of the Scuola, a document has been drawn up which focusses on a limited number of strategic objectives, linked to a series of indicators that will yield, at the end of the period, a rapid analysis of the results obtained. For each of these the institutional representative is also indicated (that is, figure/s from the political sphere, such as the Director and the pro-rectors, and/or the authorities of reference, such as the Quality Control, the Governing Council, or the Faculty Councils) and, if appropriate, an administrative representative (in particular for the objectives pertinent to the Administration, or for those in which technical and management support is fundamental for the overall execution, in addition to the General Secretary, those in charge of the Areas involved are also indicated). In order to tackle the subject matter as efficaciously and efficiently as possible, the

2 Ministry of Education for Universities and Research, Guide lines 2019, registration no. 55 of 20/12/2018.

3 Ministerial note: Implementation of ministerial decree no. 439 of 5th June 2016 – start of the initial accreditation process; ANVUR (National Agency for the Evaluation of the University System and of Research) guidelines for the Initial and Periodic Accreditation of the Scuole Superiori with special status ; ministerial decree no. 439 of 5th June 2013 Initial and Periodic Accreditation of the Scuole Superiori with special status .

4 The acronym SWOT comes from the English words Strengths, Weaknesses, Opportunities and Threats.

mandate of the Directorate has been chosen as the time frame of action. However, in full awareness of the mutability of the external context and of the internal conditions of the institution, annual shifts and updates may have to be made so as to implement in the best way possible the policies and strategies necessary for the development of the Scuola.

Coherently with this planning, the individual strategic objectives will be stated from one year to the next at Administration level as part of the performance cycle, in a continual process of improvement involving the entire institution. In particular, on that occasion the objectives will be announced in detail with respect to the overall budget allocated.

A final introductory reference regards the strategy of the Scuola concerning the federation with the Scuola Superiore Sant'Anna of Pisa and the Scuola Superiore Universitaria IUSS of Pavia: this development programme plan does not address the themes linked to the strategic lines of the federation, since they are developed and detailed in an ad hoc planning document agreed upon among the three Scuole.

SWOT analysis

From the analysis of the elements of context and the dialogues with the various members of the Scuola and the stakeholders, using the SWOT matrix (Table 1) the following strengths and weaknesses and the relative opportunities and threats for the strategic activities of the Scuola (Teaching, Research and Third Mission) were identified. On the basis of these premises the strategies were worked out as outlined in chapter 3. Strategic objectives

Table 1. SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> - Training model of the Scuola (excellence in the indicators relating to the training of students, lecturer/student ratio, etc.) - Interaction between teaching and research, the result of the collegial environment of the Scuola - Wide range of the services offered to the students - placing in VQR (Research Quality Evaluation) and in the specific research sectors - Numerousness and quality of the public engagement initiatives - Constant interaction with the cities hosting the Scuola - Recognition of the historic and current role of the Scuola in the panorama of the cultural institutions 	<ul style="list-style-type: none"> - Social mobility and gender gap in relation to the competition for admission - Economic and financial sustainability - Attractiveness on competition calls for some funding programmes and of funding and research for third parties must be enhanced - Student network lacks structure - Planning inadequate with respect to the number of Third Mission initiatives - Culture of fundraising and policies of valorisation of basic research in company contexts not sufficiently developed
Opportunities	Threats
<ul style="list-style-type: none"> - Collaboration with other Scuole Superiori and universities for teaching, research and technological transfer initiatives - Accreditation of the Scuole Superiori by means of a review of the processes and the valorisation of the AQ system - Networks with universities and international research institutions for the carrying out of projects and exchanges - development of Open Science to accelerate the development of research and to promote its social impact 	<ul style="list-style-type: none"> - Limited function of "social ladder" of university training - Proliferation of training courses and of competing universities - Cuts in funding of the university system - Scant attractiveness of Italy for research activities - Editorial oligopoly leading to a constant rise in the cost of subscriptions to scientific reviews

Strategic Objectives

The Scuola has identified its strategic objectives also in coherence with the provisions of Ministerial Decree DM no. 989 of 25th October 2019, "General guide lines of the programming of the Universities 2019-2021 and indicators of the periodic evaluation of the results". In subsequent decree no. 2503 of 9th December 2019, the Ministry defined more precisely the indicators of result and their application to providing the universities with the necessary elements for the planning of strategies, and established the 14th of February 2020 as the deadline for the presentation of the project containing the choice of objectives. Hence the Scuola reserves the right to integrate the tables associated with the objectives indicated below with the indicators and targets chosen in the framework of the three-year plan.

Services to students

Institutional representative: Vice Director, in charge of the activities inherent to Teaching, Third Mission and Accreditation, and Delegate to the activities inherent to Internationalisation and Placement

Administrative representatives: General Secretary and those in charge of the Areas involved

In restoring the correct flow of information between authorities and organisms of the Scuola (Evaluation Team, Quality Control, Student and Lecturer Peer Commissions and governance), through the process of quality assurance, the need emerged to give a central role once more to the student and to collegial life. The first step is the reviewing of the planning activities and administrative management of teaching and of services to students.

To obtain these results an analysis and review will need to be made of all the stages and activities having the students of the Scuola as their end users.

Below are listed some of the actions of first priority:

- **Teaching Plan:** a reorganisation of the process so as to improve definition and communication times; the creation of a shared glossary within the training model; a review of the regulations to eliminate redundancy and improve the management of the ordinary activities and of particular records by identifying reference procedures and standards.

- **Delivery of teaching courses:** consolidation in the use of the Moodle platform for teaching courses and the sharing of teaching materials; the launching of an electronic register of the lessons. These activities are designed, wherever permissible, to increase the usability of the teaching materials of the Scuola Normale also to external users.

- **Relationships with the partner universities and with the other federated Scuole:** greater co-ordination with the partner universities, not only regarding the content of teaching courses, but also concerning the logistic issues with a view to avoiding possible timetable clashes; the structuring of routes and procedures among the federated Scuole to facilitate the usability of the services available to the students.

- **Mentoring service:** over the years a study mentoring service has evolved naturally at the Scuola, by senior students, in general graduate students, for undergraduate students in their first years. This support is among the experiences most remembered by former students, for instance on the occasion of formal meetings at which they relate their experience of collegial life; it must thus be consolidated.

Today's students also feel the need for a monitoring service placing the didactic-scientific dimension side by side with that of assistance in the correct usage of the services offered by the

Scuola and facilitation in the carrying out of administrative obligations and procedures (*mentoring*).

- **Counselling service:** the Scuola offers students a psychological help service at the Pisa site, with psychologists of the U.O. Psicologia (Psychology Operating Unit) of AUSL 5 (health service) of Pisa, on the basis of a special convention. The service also needs to be activated at the Florence site. The counselling service is to be an expedient of short duration based on the building of a relationship of help designed to reorganise human resources and to develop strategies for tackling difficult situations, but will feature greater consideration for the characteristics of the student of high potential.

- **Mobility and research periods:** mapping of the processes and systematic gathering of data, besides a review of the agreements with the partner universities for the recognition of student mobility periods.

- **Placement services:** the placement activities carried out by the Teaching and Student Service are aimed at nurturing the relationships and connections between undergraduate and former undergraduate students and postgraduate students and with important professional experiences, both in Italy and abroad, thus promoting the placement of the Scuola's graduates in the working environment for which they are qualified.

The students of the Scuola Normale are proving increasingly successful at finding placements, not only in the academic sphere, but also in managerial contexts, both private and public. Thus the placement service needs strengthening in this direction and, parallel to this, the reputation of the Scuola must be improved outside the academic context.

The objectives to be pursued in the next two-year period by the placement service of the Scuola are as follows:

1. to improve the management of the internal processes;
2. to strengthen contacts with companies;
3. to strengthen the network with former students (see also the specific objective International placing of the Scuola and development of the Alumni network)

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
% teaching courses inserted in Moodle for the undergraduate courses	6%	9%	14%	At least 50% of teaching courses
% teaching courses inserted in Moodle for the PhD courses	24%	22%	13%	At least 50% of teaching courses
Results of evaluation of the mentoring and counselling services (evaluation scale 1-6)	nd	nd	nd	At least 4 out of 6 from the next customer satisfaction survey.
Results of evaluation of Good Practice in the placement service (evaluation scale 1-6)	4.3	4.24	4.75	Maintenance of the 2018 levels

Table 2. Indicators, trends and targets for the objective "Services to students"

Doctoral training

Institutional representative: Vice Director, in charge of the activities inherent to Teaching, Third Mission and Accreditation, and Delegate to the activities inherent to Internationalisation and Placement

Administrative representatives: General Secretary and those in charge of the Areas involved

At the institutional level, the Scuola aims to strengthen its position in the spheres of both teaching and research. To this end, a partial review is needed of the **organisation of the doctorate courses**, so as to render their teaching programmes clearer.

The above reflection will be developed taking into account the external input from the University System, including the following:

- the criteria established by Ministerial Decree no. 439 of 5th June 2013 for the accreditation of the Scuole Superiori with special status, which impose certain conditions and requisites concerning numerous aspects, from the numerical ratio of students, lecturers, temporary research assistants and researchers, to the quantitative modules of the educational syllabus both at the initial stage of accreditation and, subsequently, at the periodic accreditation stage;
- the next ministerial plan, which, with reference to doctoral teaching will influence the actions of the Scuola with the indication of objectives, requisites and indicators.

The reorganisation of the doctorate courses will also be informed by the following aims:

- a) to increase the attractiveness of the teaching syllabus in an international framework;
- b) to promote interdisciplinary and international exchange at the doctoral level, with the possibility of appropriate teaching syllabus modules ;
- c) to encourage the participation of graduate students in transversal and institutional research projects as a substantial part of their professional training;
- d) to establish and consolidate the frontier doctoral courses in accordance with the guidelines inherent in the projects of the Scuola's Departments of Excellence.

Finally, particular attention will be paid to the following aspects:

- the promotion of transfers abroad by doctoral students ;
- the identification of a set of skills useful for highly professionalised international academic career pathways (the so-called soft skills), to be added to the educational experience of undergraduate and graduate students alike, with gradation and adaptability to their specific profile. The said transversal skills concern, for example, scientific English, training in the drawing up of successful research projects on competition calls and Open Science.

Table 3: Indicators, trends and targets for the objective "doctoral training"

	2016	2017	2018	Targets to be reached by the end of the mandate
% of PhD students that have spent at least three months abroad	20%	17%	18%	35%
% of PhD students that have participated in research projects	30%	23%	22%	35%
% of overseas students admitted	23%	24%	24%	25%
% of incoming students with non-Italian entrance qualifications	30%	21%	29%	30%
Results of the evaluation of the teaching for the PhD course (scale 1-4)	3,6	3,6	3,6	Maintenance of 2018 levels
Employment rate among PhDs within a year of obtaining their qualification	84%	86%	Datum not yet available	Monitoring indicator
% of those employed (among PhDs within a year of obtaining their qualification) working in the education and research sector	79%	64%	Datum not yet available	Monitoring indicator

Social mobility and gender gap

Institutional representative: Director

Administrative representative: General Secretary

From the monitoring of the data gathered during the organisation and teaching of the orientation courses, new considerations emerged concerning:

- gender balance,
- provenance of the candidates,
- impact of social extraction.

By way of example, in 2019, out of 1932 nominations received from the high schools for the orientation courses, 1067 were girls (around 55%); out of the 226 students selected, 119 were girls (almost 53%).

This datum appears to be coherent with the national picture, which reveals higher grades (and less dispersion) among female high school students as compared with boys (cfr. Almadiploma, XVI Indagine Profilo dei Diplomati 2018, p. 199 https://www.almadiploma.it/info/pdf/convegno2018/00_Volume%20completo%20AD2018.pdf [10/12/2019]).

However, the situation changes significantly when we examine the data relating to admission to the Scuola, where the number of female candidates, and subsequently of female admissions, is considerably lower than that of male candidates (31% of female candidates in the academic year 2018/19). This datum, besides not living up to the expectations triggered by the gender balance of the orientation courses, clashes with the overall Italian university situation, in which among the registrations and the number of enrolments there was a prevalence of women (in 2017/18, 55.1% and 55.5% respectively), together with a lower university dropout rate among girls and a shorter time to obtain their degrees (57.5%) (ANVUR, (National Agency for the Evaluation of the University System and of Research) Rapporto biennale sullo stato del sistema universitario e della research 2018, Approfondimenti, (ANVUR, Two-year report on the state of

the university and research system 2018, In-depth studies) III.11.4 - Le analisi di genere nel rapporto: una riflessione complessiva, (*Gender ratio analyses: an overall reflection*) pp. 617-620; <<https://www.anvur.it/rapporto-biennale/rapporto-biennale-2018/>> [10/12/2019]).t

The national picture, furthermore, reveals a greater dynamism among women concerning intergenerational mobility, for both educational and social level; this means that Italian girls are more successful than their male counterparts in surpassing the educational and social level of their parents (data ALMALAUREA female/male graduates 2018; <<https://www2.almalaurea.it/cgi-bin/universita/statistiche/framescheda.php?anno=2018&corstipo=tutti&ateneo=tutti&facoltà=tutti&gruppo=tutti&classe=tutti&corso=tutti&postcorso=tutti&isstella=0&presiui=tutti&disaggregazione=genere&LANG=it&CONFIG=profilo>> [10/12/2019]).

Thus a planned strategy must be developed in order to narrow the gender gap at the Scuola, starting from the candidature to the admission call; the organisation and management of the orientation courses can make a decisive contribution to the strategy, adopting two lines of action:

1. **ex post questionnaires:** one and then two years after the orientation course, to ask the students to fill in questionnaires that include comments on and evaluations of the usefulness of taking part in the admission call at the Scuola Normale. These will assist us in understanding the choices of the students of both sexes and the reasons for the reluctance of women to participate in the call for admission to the Scuola;
2. **Thematisation:** to include the topic of the gender gap and gender balance transversely in the programmes of the orientation courses, involving a substantial number (at least 50%) of female **lecturers and mentors** from the whole range of disciplines. From a gender analysis of the four orientation courses taught in 2019 it emerges that fewer than 24% of lecturers were women, and as few as 19% of mentors were female (with a low of 0% in the course in Pisa). The female **mentors** in addition, were all attached to courses of humanistic disciplines. Considering the motivational role and the implicit example represented by the male and female **mentors** present at the orientation courses and the high number of female students taking part, this gap must be narrowed and female **mentors** should be more involved in the scientific disciplines. Furthermore, specific incentivising strategies targeted at female students (discounts, vouchers, invitations etc.) should be adopted to encourage them to take part in the admission call.

In order to carry out efficacious monitoring, within the context of the specific planning of the Third Mission activities, the Scuola will identify the short- and medium-term objectives to be pursued as well as the actions needed to renew the information technology support.

In addition, a structured monitoring will also enable the Scuola Normale to provide data about some macro-phenomena concerning the Italian scholastic population. An interesting theme, that also emerged from the INVALSI report of 2019⁵, is the considerable and ever increasing gap between North and South, in terms of preparation (starting from some common indicators: for example, language certifications) and study opportunities (for instance, stays abroad of a significant duration).

Table 4. Indicators, trends and targets for the objective "Social mobility and gender gap"

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
% of women in the role of mentor in the orientation courses	20%	50%	35%	At least 50%
% of candidates in admission call for undergraduate course	32%	32%	31%	At least 50%

International placing of the Scuola and development of the Alumni network

Institutional representatives: Vice Director, in charge of the activities inherent to Teaching, Third Mission and Accreditation; Pro-rector for Research, Evaluation and Ranking and Delegate to the activities inherent to Internationalisation and Placement

Administrative representatives: General Secretary and those in charge of the Areas involved

Albeit emerging as being among the best universities at international level in the disciplines of reference, the Scuola needs to consolidate its global placing in order to improve its reputation on an international scale.

To this end, the following activities will need to be implemented in the next few years:

- analysis of international ranking in terms of placing relating to the Scuola and of the main competitors, in order to identify those of greatest interest and the dimensions on which to concentrate the efforts at improvement;
- actions to incentivise the attractiveness of the Scuola on the part of visiting lecturers, researchers and international students;
- actions favouring visits abroad of lecturers, researchers and students of the Scuola to participate in international projects and exchanges/collaborations;
- gathering and analysis of data so as to give prominence to the results of the research in the context of the next VQR;
- valorisation of the deliverables of the projects inherent to the Departments of Excellence.

In all these activities an important role is played by the development project of the **Alumni network**, as a motor for enhancing the reputation of the Scuola and for valorising its role in training and development. The Scuola counts among its former students not only academic and research staff operating in universities or in national or international research centres, but also directors and technical specialists prominent in public administration and in international companies. The alumni can thus be promoters of the Scuola in their own environments and networks, strengthening its reputation, or else they can put their experience at the disposal of the youngest students.

The objective is to develop incrementally the mapping of alumni so as to put into place diversified and progressive levels of their involvement in the activities of the Scuola, to

consolidate their sense of belonging and to develop occasions for exchange and contact. These levels of participation can be summed up as follows:

- information in newsletters and dedicated communicative media about the scientific and cultural activities of the Scuola;
- participation of alumni in the events organised by the Scuola;
- invitations to alumni to speak at the events of the Scuola and the organisation of ad hoc initiatives on the basis of the expertise of the alumni;
- networking in the context of the research activities of the Scuola;
- mentoring and placement activities for the students;
- fundraising initiatives on the part of the alumni in a perspective of a 'return' to the community of the Scuola and of the wealth of opportunities they enjoyed there. This area can be developed not only through donations, but also through the funding of internships, scholarships and specific initiatives (for instance, for disability and inclusion).

To this end, events will be arranged with the alumni, designed to create aggregation, also in collaboration with the Associazione Normalisti and the Association of Friends of the Normale, in addition to specific meetings with some former students where they can give the younger students information, advice and opportunities for the future.

Table 5. Indicators, trends and targets for the objective "International placing of the Scuola and development of the Alumni network"

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
no. of events organised	0	0	0	At least one event per year from 2020
no. of meetings with former students	2	2	2	10 meetings per year

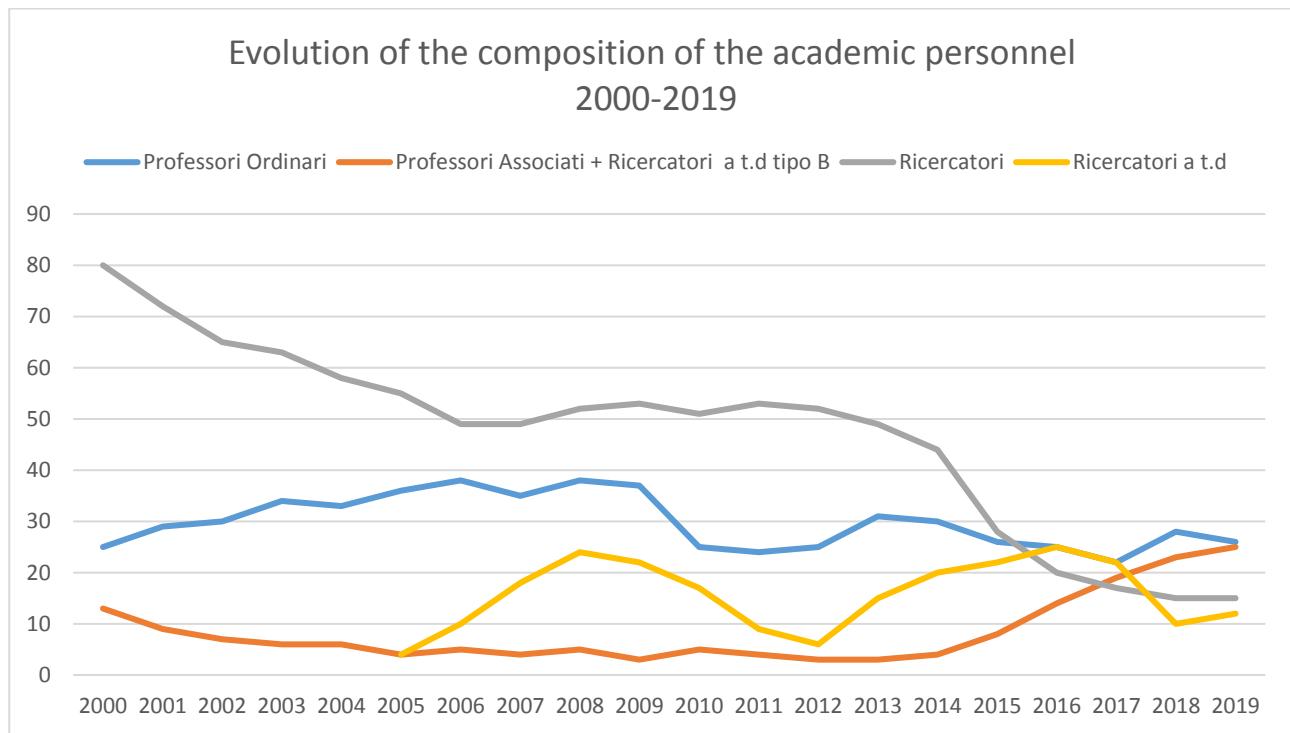
Strategies for the recruitment of academic and research staff

Institutional representative: Director

Administrative representative: General Secretary

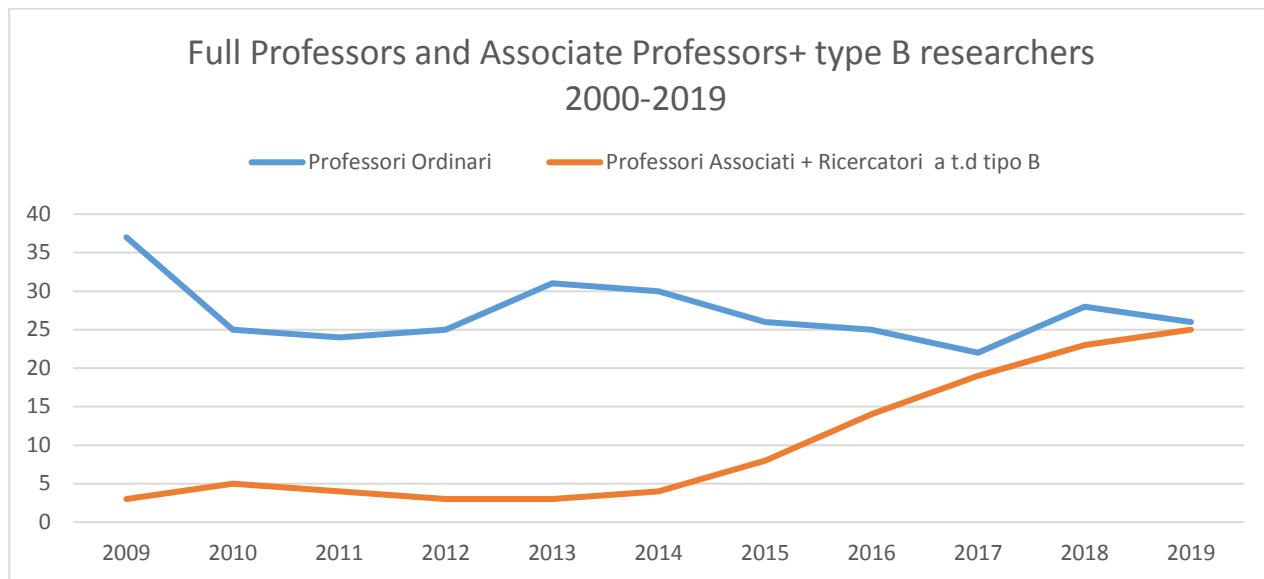
The data relating to the Scuola's budget, and in particular the evolution of the composition of the academic personnel shown in Graph no. 1, invite serious reflection as to future recruiting strategies.

Graph no. 1



With reference to the type A posts for researchers, in the Governing Council of June 2019 a discussion took place with the aim of a conservative policy, linking the activation of these posts more closely to teaching demands, with particular reference to posts weighing on the FFO (the Italian state university funding body, the *fondo di finanziamento ordinario*). It is also thought that type B posts for researchers and for associate professors should be placed in the same group, considering the predictable career development of the holders of these research posts. The eleven hirings of type B researchers in the last three-year period, together with the potential career advancements established by the implementation of Ministerial Decree no. 364 of 11th April 2019 relating to the special plan for the career advancement of permanent researchers in possession of the national scientific qualification, will give rise operatively, as shown in Graph n. 2, to a substantial equalisation of the number of full and associate professors, a datum not in line with the tradition of the Scuola and which could have a serious impact on its governance.

Graph no. 2



In the light of these considerations, future lines of intervention will be as follows:

- the completion of the hirings provided for in the context of the Department of Excellence of sciences, with a post of full professor and, compatibly with the budget restrictions, the filling of new posts of full professor requested by the Faculties, with particular regard to the demands arising from transfers and retirements;
- the use of resources, present and future, deriving from special plans for the recruitment of type B researchers, to cover only teaching and scientific demands caused by cessation or transfer of associate professors, with an eye to recruiting younger teaching staff;
- greater openness of the Scuola Normale in the activation of posts for young winners of particularly competitive projects (for example, the Marie Curie or the ERC Starting Grant);
- in June 2019 a new set of regulations was approved, in accordance with Law no. 240 of 30th December 2010, for the activation of posts for full and associate professors or researchers on contract on the basis of funding external to the Scuola. This instrument is to be exploited to the utmost.

With particular reference to the assigning of posts for full professors, the possibility will also be considered of opting for direct recruitment, a strategy that in the past has proved useful for recruiting high-profile figures, in line with high selection standards. At the same time, a review of the current regulations for calls/competitions is ongoing, in the wake of the various critical issues that have emerged, with a view to consultation with the MIUR and a comparison with the regulations of the other Scuole Superiori.

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
no. of hirings of full professors	1	1	8	completion of the hirings provided for in the context of the Department of Excellence of sciences, with a post of full professor and, compatibly with the budget requirements, the filling of new posts of full professor requested by the Faculties, with particular regard to the demands arising from transfers and retirements
no. of hirings of type B researchers	0	6	3	Hirings for cessation or transfer of associate professors
no. of posts for young winners of particularly competitive projects (for example, the Marie Curie or the ERC Starting Grant)* and of hirings with external funding by type (researchers, professors)	1	2**	2	At most two in the first three-year period

Table 6. Indicators, trends and targets for the objective "Strategies for the recruitment of academic and research staff"

*these are young winners of European research projects external to the SNS, on whose funds research grants have been stipulated to fund their posts.

** no. 1 RTDB (Researchers on contract) - 10% of the remuneration comes from ERC Starting Grant project funds.

Strengthening and development of participation in networks, in national and international projects for the funding of research and in initiatives for technological transfer

Institutional representatives: Pro-rector for Technological Transfer and Pro-rector for research, Evaluation and Ranking

Administrative representatives: General Secretary and those in charge of the Areas involved

From an analysis carried out on the projects active in the last three-year period, considering the small size of the institution, nationally the Scuola shows a positive trend, with placements worthy of merit especially in the context of PRIN (funding for research projects of national interest), while at the European level it is placed only in the highest band of the funding sources (ERC and Marie Curie). At present there are few successful proposals of the Scuola in other types of European competition calls.

Among the possible causes of this poor showing are objective ones such as the limited knowledge of the existing opportunities and a poor capacity for creating networking, as well as the failure in the past to make decisions leading to an increase in the skills of the technical staff in support of the writing of projects and at the evaluation stages, in addition to the failure to incentivise within the Scuola so as to favour the participation in competition calls with forms of rewarding in the case of allocation of funds linked to specific types of European projects.

Participation in European projects can also be supported through internal initiatives of incentivisation and support for the European planning, taking inspiration from what has been

adopted by other universities⁶. Below are listed some possible actions to be implemented in the next three-year period.

- Above all, to examine in greater depth the possibilities existing in the context of European planning, exploiting in a more systematic way the existing **networking** channels (such as participation in Tour 4 EU <<https://tour4eu.eu/tour4eu/>> [10/12/2019]) and creating further opportunities in the sphere of new conventions/collaborations or in those already active on other channels/projects. Participation in the European networks can be considered as a preparation for participation in the calls, since in the process of defining the general lines and the contents of the calls, the European Commission consults the networks of the various stakeholder groups formally grouped in European thematic networks. The networks thus represent a privileged space for the construction of new partnerships for participation in funding calls at European or international level since they include actors of differing nature, from the world of research to that of entrepreneurship. In the context of the networks, the Scuola can provide specific expertise together with the added value of its own brand and tradition. The Scuola must therefore provide incentives for the commitment required for participation in the networks and for the monitoring of the results of the participation.
- To examine other ways of promoting the consolidation of the existing networks and of exploiting them to the full, regarding visiting professors, researchers, scholars and students, endeavouring to improve the benefits attached to international exchanges to ensure their positive fall-out in the context of research, training and placement.
- To weigh up the best ways of support for the teaching and research staff in the identification of calls, in the verification of the correspondence between the idea for the plan and the objectives of the call, in the writing up of the proposal and in the analysis of the evaluation reports .
- To evaluate ways of incentivising the **participation in/organisation of international meetings aimed at forming project partnerships, and of providing contributions to research activities** (or recognition in the form of awarding prizes) to lecturers and researchers who present and/or win, as co-ordinators and/or partners, a project within the context of the European programmes.
- To valorise project results not only by means of reports but also through **communicative strategies of both internal and external impact**. The Scuola must also act at internal training and communicative level to render lecturers, researchers and students capable of identifying and communicating efficaciously the potential fall-out of their research activities for third party partners. In this sense greater use must be made, adapting them to the demands of the Scuola, of initiatives such as the Contamination Lab, co-funded by MIUR and developed by the Services Unit for the technological transfer of the University of Pisa in collaboration with the Scuola IMT Alti Studi of Lucca, and with the Scuola Normale Superiore and the Scuola Superiore Sant'Anna of Pisa, to train students and researchers in self-entrepreneurship and to inform start-up companies and aspiring entrepreneurs with innovative ideas of the possibilities of funding in support of company start-ups.
- To arrive at a better valorisation of potential initiatives and of the results inherent to technological transfer, creating a profitable channel of exchange and communication

6 <<https://www.unipi.it/index.php/unione-europea/itemlist/category/1417-il-sostegno-unipi-alla-progettazione-europea>> (10/12/2019).

between third-party partners and the Scuola. Work will certainly continue on enhancing the initiatives linked to **JoTTO**, the joint technological transfer office of the Scuola IMT Alti Studi of Lucca, the Scuola Normale Superiore and the Scuola Superiore Sant'Anna of Pisa and the Scuola Universitaria Superiore IUSS of Pavia.

Table 7. Indicators, trends and targets for the objective “Strengthening and development of participation in networks, in national and international projects for the funding of research and in initiatives for technological transfer”

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
no. of European projects presented	32	18	18	Annual average of projects presented equal to that of 2018
no. of national projects presented	84	42	85	Annual average of projects presented equal to that of 2018
% of European projects won of projects presented	22%	6%	11%	20%
% of national projects won of projects presented	38%	43%	21%	40%
no. of technological transfer initiatives and of valorisation of research: training activities/training courses	7	7	4	Average of 6 activities per year
no. of technological transfer initiatives and of valorisation of research: participation in events	5	2	5	Average of 4 activities per year
no. of technological transfer initiatives and of valorisation of research: organisation of events	0	2	2	Average of 2 activities per year

Development of Open Science

Institutional representative: Pro-rector for research, Evaluation and Ranking

Administrative representatives: General Secretary and those in charge of the Areas involved

In order to increase the sharing of research results and to maximise their impact in the scientific community and in society as a whole, the close connection between the research policies of the universities and the maximum visibility of the results is considered a priority by the European Commission, which in 2012 and in 2018 approved two Recommendations as to access to scientific information and its conservation⁷, since 2007 insisting on open-access publication of the results, and in some cases of the raw data, of research studies funded with European grants (in part FP7, H2020, ERC, the future Horizon Europe).

In Italy the European recommendations were transformed into the so-called Bray Law of 2013⁸ and the so-called Gallo-Lattanzio⁹ Public Bill now under discussion in the Senate, while MIUR (SIR 2014, PRIN 2015 and PRIN 2017) and other Italian funders (Fondazione TELETHON and CARIPLO, Istituto Superiore di Sanità) have adopted in their funding calls the obligation of open-access publication of results, in accordance with the European model.

In compliance with the indications of the European University Association, which since 2008 has exhorted universities to develop institutional policies and strategies in favour of the availability of research results, the CRUI (the Committee of Rectors of Italian Universities), has also set out various guidelines for open access to the results of research¹⁰ and has urged the leadership of the universities to increase awareness in the academic community of the importance of the policies of open access.

Through the practices of Open Science, the Scuola intends to tackle the problem of the economic sustainability of the costs of access to scientific production, but above all to accelerate the development of research and to promote its social impact in the tradition that has always distinguished it: the promotion of merit and of culture for the collective good.

The priority actions to be taken in this direction are as follows:

1. to propose and put forward for approval by the authorities a set of regulations/policy for the storage of scientific literature in the institutional archive and for open access to it;
2. to implement the university's open access archive in accordance with the policy adopted¹¹;

8

Art. 4 of Legislative Decree no. 91 of 8th August 2013, converted to Law no. 112 of 7th October 2013 (the so-called Bray Law), states that open access to the results of research funded at a percentage equal to or higher than 50% with public funding must be available at the moment of the first publication (Gold OA) or else subsequently in institutional/disciplinary data storage (Green OA) within 18 months for the STM disciplines, and within 24 months for the HSS disciplines, of the first publication.

9

The so-called Gallo-Lattanzio Public Bill "Modifications to article 4 Legislative Decree no. 91 of 8th August 2013, converted, with modifications, to Law no. 112 of 7th October 2013, together with the introduction of article 42-bis Law no. 633 of 22nd April 1941, regarding open access to scientific information" was approved by the Chamber of Deputies on 13th March 2019 and is currently under scrutiny in the Senate commission.

10

Between 2009 and 2013, the Open Access Group of the Commissione Biblioteche CRUI (the Library Commission of the Committee of Rectors of Italian Universities) formulated guidelines for institutional archives and the management of metadata, the creation of open access reviews, the editing of policies regarding open access to publications, the management of the rights to open access, and the Recommendations regarding Open Access and the evaluation of the fruits of research. The documents are available on the web page <<https://www.crui.it/openaccess.html>> (10/12/2019).

11

11 The prerequisite for an institutional archive to achieve its objectives is a continuous and constant flow of insertion of documents representing a significant percentage of the academic production. To this end the following actions are needed:- the creation of awareness and sharing of the objectives for open access in the academic community;

- the creation of awareness among the members of the community of the need to assert their rights in the drawing up of editorial contracts ;
- the linking of the deposit of publications in institutional archives to processes of evaluation of research and to potential internal incentives.

3. to analyse the needs of the research staff for direct open access publication and to calculate the annual costs for the Scuola of the Article Processing Charges;
4. to analyse the needs of the research staff for the archiving of data;
5. to spread the open access culture through workshops and informative materials.

Table 8. Indicators, trends and targets for the objective "Development of Open Science"

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
% of products inserted into the institutional archive compared with 2019				Average yearly increase
no. of initiatives effected/no. of initiatives planned				At least 2 initiatives per year effected starting from 2020
no. and types of participants in the initiatives				At least 10 participants for each type of beneficiary (students, temporary research assistants, lecturers/researchers)
no. and types of informative material produced				Dedicated web section
no. of downloads of full texts inserted				Incremental over the years

Policies and actions for the impact of the Scuola in the Third Mission

Institutional representative: Vice Director in charge of the activities inherent to Teaching, Third Mission and Accreditation

Administrative representative: General Secretary

The initiatives of public engagement, arising from the enthusiasm of the few and/or the involvement of the many and of external organisations, have never been adequately valorised.

The planning of Third Mission activities, in particular those of a social and cultural nature, thus need to be placed on a strategic level and to be planned and set out in a document shared with the governance and the community of the Scuola.

Adequate planning would make for the following:

- greater coherence of the set of initiatives in accordance with lines and themes worked out in good time and with adequate provision of resources;
- greater visibility of initiatives of more recent institution through adequate distribution;
- the consolidation of the cultural brand of the Scuola;
- the possibility to create a databank of indices of approval and/or of impact.

The Scuola has always played a responsible civic role, the value of which is recognised at local and national level.

From an initial perusal of the European and national laws and of the experiences accrued in the university context, it clearly emerges that it is not sufficient to compile a catalogue of the digital

products of research to create public engagement; the digital cultural contents need to be inserted in a communication plan designed to narrate them in a verbal and visual language through a simple and attractive surfing experience, exploiting their special qualities. Story telling and visual story telling play a fundamental role in the construction of sharing pathways.

Another element to be considered is the explicit request on the part of the European Commission and of ANVUR for the communication of research to actively involve the public: the classic one-way communication, in which the flow of knowledge moves only in the direction of research -> society, must be accompanied by a dialogue-conversational approach in which the public participates in the creation of knowledge. The web and social media offer efficacious solutions for developing a similar approach in an organised way: they enable the identification and attainment of the set targets, offer spaces for the sharing and creation of contents, provide the opportunity for surveys and consultations, and yield traceable feedback. As part of a wider planning strategy of the outreach of the Scuola Normale, digital narration and the social networks could support and amplify the impact of the traditional communication *in presentia*.

Table 9. Indicators, trends and targets for the objective “Public engagements and fundraising: policies and actions for the impact of the Scuola in the Third Mission”

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
<u>no. of contributions uploaded on the social media (e.g. youtube) and on the outreach web page of the Scuola in accordance with shared standards of quality for the scientific dissemination, divulgation and communication of the products of the Scuola Normale</u>		Since it is a new initiative compared to the preceding years, no comparative data are available		Incremental over the years
<u>no. of digital contents inserted in the institutional catalogue of research, with a view to creating ways of divulgation designed to make an impact</u>				Incremental over the years

Strategies for economic sustainability and sustainability of the campus

Institutional representatives: Director and Delegate to the Activities inherent to the Architectural Heritage

Administrative representatives: General Secretary and those in charge of the Areas involved

As stated in the initial analysis, the economic and financial sustainability of the Scuola needs close monitoring over the next few years so as to address both the external situation, which is marked by uncertainty and by diminishing funding, and the internal one with a view to proper valorisation of the activities of the Scuola.

An important first step is to increase participation in - and consequently the awareness of - the community of the Scuola as to the budget and the economic and financial dynamics. In 2019 some awareness initiatives have already been activated:

- on the 20th June 2019, a meeting took place with those in charge of the administrative services and their collaborators for an in-depth illustration of the main critical points of the drafting of the budget from the perspective of analytical accounting;
- on the 3rd July 2019, during the university conference all members of the Scuola present were informed of the main critical points of the budget of the Scuola, starting from an analysis of the latest three-year period.

Over the next few years further meetings are to take place at various levels to increase awareness of the impact of the Scuola's activities in both the economic and the financial context, enabling the development of strategies regarding, income, heritage and revenues for the management of the existing critical points and for tackling any future problems.

An accurate identification of the contexts and improvements to be focused on will require in-depth studies on the items of the budget, partly through benchmarking analyses of indicators shared with the other Scuole with special status. A first important step in this sense was that taken in the context of the "economic and financial performance analysis of the Schools of advanced studies" that took place on the 20th and 21st May 2019 with the participation of the Scuola Normale, Scuola Superiore Sant'Anna, IUSS of Pavia, IMT of Lucca, Scuola Internazionale Superiore di Studi Avanzati – SISSA and Gran Sasso Science Institute – GSSI. This procedure involves the restitution of indices calculated on the re-classified budgets of the Scuole from the comparative viewpoint. The analysis of the indices will enable the developing of further surveys and in-depth studies and will yield indicators providing the basis for a 'dashboard' to support and orientate the strategic economic and financial decisions, defining attention thresholds and qualitative standards of reference.

At budgeting, reporting and analytical accounting level, an evaluation also needs to be made of the opportunities and modalities for creating a management control model adaptable to the special nature of the Scuola and facilitating the planning of the objectives and the monitoring of the results attained. In accordance with the ANVUR guidelines on the integrated management of the performance and budget cycles¹², there should be ever greater integration between the economic-financial forecast and performance planning, so as to attain coherence and improvement in the management of both aspects. To this effect, an integration is planned between the budget management (U-budget) and that of the performance cycle (Sprint) to enable the attribution of a specific budget for each objective and the production of its report.

To sum up, in the next few years the following activities will need to be carried out:

- divulgation and training initiatives regarding topics inherent to the budget, analytical accounting and the dynamics of economic and financial sustainability for the various members of the Scuola;
- a comparative analysis of the Scuola's budget indices and those of the other Scuole;
- investigations into the most critical economic and property items; the planning and carrying out of actions aimed at obtaining better results;
- an evaluation of opportunities and modalities for creating a management control model adaptable to the special nature of the Scuola and facilitating the planning of the objectives and the monitoring of the results.
- integration between performance cycle and budget by means of information technology integration and collaboration between the members of the Scuola and the services involved.

Economic sustainability is also partly achieved by energy saving on campus.

The Scuola is a campus within the cities of Pisa and Florence, formed of a heritage of goods and property, some of which is of historical and artistic worth, which over time has grown proportionately to the enhancement of the Scuola.

Over the years the structures (canteen, colleges etc.) have been modernised in order to improve the quality of the buildings and to align them with efficient energy standards.

Something more must be done regarding respect for the environment; for this reason, the Scuola intends to participate in the "Sustainable Campus" project¹³, besides carrying out the works already planned. To this end the Scuola has presented to MIUR the project CAMPUS-SNSostenibile, with a request for joint participation in the estimated costs.

Table 10.. Indicators, trends and targets for the objective "Strategies for economic sustainability and sustainability of the campus"

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
% of achievement of the interventions described in the CAMPUS-SNSostenibile Project with reference to energy consumption and waste disposal	Since it is a new initiative compared to the preceding years, no comparative data are available			50%
Customer satisfaction survey (scale of 1-6) – waste management	Datum not available	4.03	Values higher than 4	
Customer satisfaction survey (scale of 1-6) – internal mobility and mobility to the site	Datum not available	4.18	Values higher than 4	
Customer satisfaction survey (scale of 1-6) – energy consumption	Datum not available	3.55	Values higher than 4	
Customer satisfaction survey (scale of 1-6) – availability of green areas	Datum not available	3.76	Values higher than 4	

Processes of quality assurance and strategic monitoring of the Scuola

Institutional representatives: Director and Vice Director in charge of the activities inherent to Teaching, Third Mission and Accreditation

Administrative representative: General Secretary

Over the years the Scuola has drawn up various guide lines and documents regulating the levels of its activities in line with the qualitative standards in its various institutional dimensions: Teaching, Research, Services and Third Mission. This year, in line with the legal guide lines on the subject of quality, the Scuola has set up an intense work programme to harmonise these standards in a system of policies and of guarantee of Quality. Substantially, the concept of quality is for the Scuola the product of the interaction between lecturers, students and the learning context of the institution.

Numerous pathways have been followed for the pursuance of this objective:

- Quality Planning and Quality Assurance

Completion of the policies in the various key sectors (Teaching, Research, Services and Third Mission) and consolidation of the Assurance System.

- Initial and periodic accreditation of the Scuola

Mapping and review of the processes, redefinition of the flows, reorganisation of the services.

- Directional dashboard

Definition of a directional reporting instrument that periodically provides the governance with a synthesis of the information handled and a measurement of the performance parameters.

Table 11. Indicators, trends and targets for the objective "Strategies for economic sustainability and sustainability of the campus"

Indicator	2016	2017	2018	Targets to be reached by the end of the mandate
% of the processes mapped and no. of processes with a quality certificate	Mapping and review of the processes will begin in 2020			Complete mapping of the processes relating to Teaching, Research, Provisions and Budget. ISO 90001 certification for at least one of the processes mapped
Budget certification	Since it is a new initiative compared to the preceding years, no comparative data are available			Budget certification by the end of the mandate
no. of training and information sharing sessions	No formalised meeting about the topic involved			In 2019 4 itraining sessions took place. Starting from 2020 at least 3 sharing and training sessions yearly are planned for the various members of the Scuola