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Managing Bologna university museums and collections (1970-2015)

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

Published Version:

Managing Bologna university museums and collections (1970-2015) / Ferri, P; Guagnini, A; Santagati, ME; Zan, L. - In: MUSEUM MANAGEMENT AND CURATORSHIP. - ISSN 0964-7775. - ELETTRONICO. - 36:5(2021), pp. 523-547. [10.1080/09647775.2021.1891562]

Availability:

This version is available at: <https://hdl.handle.net/11585/820862> since: 2022-02-25

Published:

DOI: <http://doi.org/10.1080/09647775.2021.1891562>

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(Article begins on next page)

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Ferri P., Guagnini A., Santagati M.A., Zan L. (2021) Managing Bologna university museums and collections (1970–2015), *Museum Management and Curatorship*, 523-547 | Received 04 Nov 2020, Accepted 14 Feb 2021, Published online: 03 Mar 2021

The final published version is available online at:
<https://doi.org/10.1080/09647775.2021.1891562>

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Abstract – The literature on university museums abounds with accounts of new initiatives to reposition these institutions by opening them up to the general public as they move away from core of university activities like teaching and research. However, what is seldom analyzed is the long-term impact of such initiatives, and whether they survive the initial phases and live up to expectations. The study reports on the administrative history of the museums and collections of the University of Bologna across a continuous period of more than four decades, starting in the late 1970s and ending in 2015. Using a holistic framework, attention is addressed to institutional changes, trends in human and financial resources management, activities and visitors' profiles across an extended period. The paper highlights the difficulties experienced in consistently supporting the vision developed in the late 1970s, and presents some proposals for change.

Keywords: university museum; longitudinal change, new museology

1. Introduction

In the past four decades, museums all over the world have experienced a deep process of transformation that questions the core idea of these institutions (Vergo, 1989; Lasser, 2012; McCall and Gray, 2014; Tzortzi, 2014). The so-called “new museology” entails, in fact, a change of emphasis from an object based to people centred institution (Murawski, 2018; for a critique see Cannon Brookes, 1998, 2012). In this view, the primary task of collecting and preserving the museum as an archive of objects is linked to issues of knowledge sharing and community involvement, mirroring a shift from mere “keeping”, to an articulated set of activities: conservation, research, access and services. In parallel with that, museums and cultural institutions in general are also experiencing a new emphasis on the use of resources, both human and financial (Zan et al., 2015; Lindqvist, 2012).

University museums and collections (UM&C hereafter) are also involved in the process of “reassessing the uses and users of their collections” (Laurenço, 2003 p. 321) with interesting distinctive features given their ties with higher education institutions, a sector that has undergone a deep process of redefinition of priorities on its own. This paper examines this twofold process of transformation and the results achieved at the museums and collections of the University of Bologna (UNIBO hereafter).

Acknowledged as the oldest university in the western world, in its more than 900 years of existence, UNIBO developed important collections across many disciplines. In particular, UM&C were used explicitly during the 1970s in a project to revitalize the historical memory of the university and strengthen its link with the city. To our knowledge, UNIBO was an “early adopter” in reconfiguring UM&C for the lay public and the citizens. The study assesses the outcomes of this and other initiatives of a similar kind until 2015, before the appointment of the current rector, by paying particular attention to the contextual factors facilitating or hindering the transformation.

The study contributes to the literature dealing implicitly and explicitly with UM&C management issues (Boylan, 1999; Tirrell, 2000a b; De Clercq, 2003a b; OECD, 2001; Council of Europe, 2005; Were, 2010; Simpson, 2017). Compared with prior works, the present paper has three elements of distinction. First, the study reports on the administrative history of UNIBO museums and collections across a continuous period of more than four decades. Such an extended timeframe allows us to discuss the main innovations – as outlined in UM&C management literature (see for instance Kozak, 2016, which describes the new

strategies of the Museum Collections Unit of St Andrews University) – using a long-term perspective, assessing both implementation and outcomes, which are overlooked aspects in the current debate.

Second, whereas prior empirical literature has investigated aspects of museums management in isolation – i.e. visitor engagement activities (Marstine, 2007; Were, 2010), institutional changes (De Clercq, 2003b), human and financial resources issues (Munktel, 2003) – we use a holistic approach, considering these elements as strongly intertwined (see Simpson, 2017 for an exception). Thus, the paper provides overarching evidence of the interplay between institutional changes, trends in human and financial resources management, activities and visitor profiles across an extended period.

Last, while the majority of insights into UM&C management come from accounts written by museum directors or curators about their own museum, the authors of the present paper provide a view from “nearby” rather than from the “inside”. Although the authors are current or former employees of UNIBO, for most of the period covered by the study they were not actively involved in the management of UM&C at their own institution (see section 3 for more details). While being part of UNIBO facilitated access to sources, the authors’ partially embedded status (both in terms of organization and discipline) fostered a more detached and critical approach to UM&C management issues than usually observed.

The remainder of the paper is structured as follows. The next section presents a historical overview of the nature and dynamics of change of UM&C. The methodological section provides information about access, sources and analysis. Five phases make up the findings section, each of them characterized by a distinctive institutional setting, range of activities, and dynamics in terms of human, financial resources and visitors’ profile. After a synthesis of the findings, the discussion section outlines the implications for the debate on UM&C management. In the concluding comments, a research agenda relating to UM&C is presented.

2. UM&C: origins and patterns of transformation

The origin and fate of UM&C are closely linked to teaching and research activities of their parent organizations.¹ The “golden age” of UM&C can be positioned between 1800 and 1930, when they were integrated into teaching and research (Pickstone, 1994). For instance, many university museums of natural science in the United States were founded and further developed in this period, when field collecting and the science of taxonomy were at their heights (Tirrell, 2000b). This was followed by a period of decline, culminating in the 1970s. As new research themes like ecology or behavior substituted taxonomy (Tirrell, 2000b) and new methodologies made the use of artifacts and specimens obsolete for research and teaching (Tirrell, 2000ab; Lourenço, 2008), UM&C gradually moved from being a core to a non-core university asset (Boylan, 1999; De Clercq, 2003b; Stanbury, 2003).² The unenviable status of a non-core area of activity made it more difficult for UM&C to access key resources like specialized personnel, funding and spaces (Munktel, 2003; Stanbury, 2003), given also UM&C’s weak link with the new priorities of higher education institutions – i.e. strengthening the relationship with the industry, prepare students for the labor market – and frequent budget cuts (Boylan, 1999; Lourenço, 2008).

¹ Collections purchased as an investment by wealthy academic institutions, without any past or present role in teaching and research, are outside the scope of this study (see also de Clercq, 2001: 87).

² There are nevertheless exceptions: botanical collections are enjoying a new lease of life as they now offer valuable archival material, e.g. for research in genetics.

A change in the attitude towards UM&C was marked by the *Magna Charta Universitatum*, signed in 1988 in Bologna by more than 250 rectors of European universities. The document included references to the importance of preserving and caring for academic heritage, both tangible and intangible. This in turn led to the launching of national surveys on the conditions of UM&C in the 1990s (see de Clercq, 2001, Ludwig and Weber, 2013, CRUI, 2000, for the Netherlands, Germany and Italy respectively). Fundamental institutional contributions came from the creation of associations like the Academic Heritage and Universities' Network (Universeum) and the International Council of Museum Committee for University Museums and Collections (UMAC), funded in 2000 and 2001 respectively.

Along with initiatives aimed at raising the awareness of the critical conditions of UM&C, contributions discussing their *raison d'être* started to appear. As many argue, to survive, these institutions should embrace the challenge of opening their doors to the general public, developing ties with their urban context, and finding new ways to turn museums and collections into sites for “multidisciplinary learning” (Cordell, 2000; Lourenço, 2008; Soubiran, 2009; Marstine, 2007; Were, 2010; Barnes and Lynch, 2012; Talas and Laurenço, 2012).

However, repositioning UM&C along these lines was/is not always easy to implement. In fact, authors have repeatedly acknowledged a misalignment between the efforts needed to reimagine UM&C and the conditions of the administrative structures that are supposed to implement this vision (Boylan, 1999; Munktel, 2003; Stanbury, 2003; Were, 2010; Simpson, 2017). The low numbers and lack of competencies of personnel is a key issue in this regard. Besides, as Were (2010) maintains, the highly personalized bond between academics and collections inhibits initiatives aimed at improving access to the collections.

Three areas of intervention are often mentioned when discussing the organizational-level changes that would help UM&C to regain relevance. Consistent with the discussion above, the professionalization of UM&C staff is seen unanimously and constantly as a priority. As Mack (2000, p. 31) put it 20 years ago, UM&C “will need to be managed not by academics as an adjunct to an academic department, but by museum trained professionals, full-time managers or directors, whose business is to lead and manage the museum for use by all its various audiences” (see also Council of Europe, 2005).

Next, changes at the institutional level could be beneficial to support the transformation of UM&C. Frequently mentioned issues include the integration of UM&C with the university to facilitate interdisciplinarity and foster economies of scale (Laurenço, 2008; Kozak, 2016); the provision of autonomy to these integrated organizational entities, with dedicated funding, personnel and managerial boards including academics and representatives of local government and other stakeholders (Boylan, 1999); and the development of partnerships with external organizations aimed at exploiting resource complementarity and developing joint programs (MacDonald, 2003).

Last, a less agreed upon area of intervention concerns the transfer of collections to non-university museums or other cultural institutions. For some authors, the detachment of collections from the university represents a sort of defeat because their value is deeply bound to university research and teaching (Soubiran, 2009; Boylan, 1999; Laurenço, 2008), while for others, whether “we really need to maintain all those objects, collections and museums” is a question worth asking (De Clercq, 2003a). According to this view, the transfer of collections to new users should not be excluded *a priori*, but carefully assessed on a case-by-case basis (see De Clercq, 2003b on the redistribution of geological collections in the Netherlands).

As discussed above, UM&C experienced ups and downs in the past century, moving first from the core to the periphery of university activities, and then experiencing a process of rediscovery starting from the late 20th century. Much seems to be still needed to support the

repositioning of UM&C in terms of activities and users, especially in the areas of professionalization, institutional design, and transfer of collections to other institutions. We turn now to the UNIBO case to provide additional evidence and extend this debate further.

3. Access, sources and method

Interest in the management and organizational aspects of museums and collections at UNIBO started in 2011, when the university administration asked two of the authors to provide guidelines for the institutional transformation of the museums system. In 2017–18, the same authors were involved again in a similar task, and one was also appointed as a member of the management board. While performing the second assignment, they were struck by the gravity and persistence of the problems experienced by the UM&C at their own institution. Hence in parallel with – and partly after – their second consultancy assignment, they independently started investigating the causes of the situation.

The present study relies mainly on primary and secondary documentary sources. Interviews were also performed to complement the document analysis. The inquiry into the origins of the collections (i.e. before the 1970s) relies mostly on secondary sources (for example Vv.Aa 1979, 1987, 1988). For the following years, which represent the core of the study, the analysis draws on an almost complete set of the meeting minutes of the organizational bodies that were set up to manage the UM&C at different points in time, namely, a) the Committee for the Museums and Archives of the University (*Commissione per i Musei e gli Archivi dell'Università* – CMA hereafter), active from the early 1970s until 1988, b) the Technical and Scientific Committee of the Interdepartmental Service Centre for University Museums and Archives (*Centro Interdipartimentale di Servizi per i Musei e gli Archivi* – CISMA hereafter), active from 1989 to 1998, and c) the Technical and Scientific Committee of the University Museums System (*Sistema Museale di Ateneo* – SMA hereafter), active from 1999 up to now. In addition, the annual reports of CISMA and SMA, the rectoral decrees relating to these structures, and other documents such as the letters of the CISMA and SMA directors to the academic bodies for the period 1989–2015 were examined. University yearbooks were also a valuable source to understand the evolution of personnel allocated to UM&C.

In terms of interviews, during the 2011 consultancy assignment, we repeatedly interviewed 12 of the 16 members of the academic staff responsible for a museum or collection. In addition, during the 2017–18 assignment, we worked closely with the administrative staff of SMA. Although this material is not explicitly used in the paper for confidentiality reasons, the interviews and meetings gave us an initial understanding of the contemporary organizational issues characterizing the UNIBO museums and collections. Additional interviews with the Secretary General of UM&C in charge without interruption between 1989 and 2014 and with two of the Directors of CISMA were performed in 2018–2019 to complement and validate the draft emerging from the analysis of the documents.

The analysis was carried out in two interrelated stages. The first stage aimed to understand the evolution of the institutional setting of the museums and collections – i.e. who was responsible for them, with what degrees of autonomy – and the dynamics of change in terms of human and financial resources, type and level of activities, and visitors. Missing or poor-quality data partially affect the completeness of the picture emerging from this analysis, especially in the areas of financial resources and visitors number. Regarding the former, the financial reports of UM&C do not include all revenues and expenses. In some cases, these are charged to other units at the university level or to other departments (e.g. building maintenance was allocated to the construction office of the university). Data reliability is also a major issue when visitor numbers are concerned, due to the lack of a consistent procedure

for recording access. Therefore, we are particularly cautious when presenting visitor figures throughout the paper.

As a second analytical stage, we sought to identify meaningful ways to interpret the narratives relating to changes in institutional settings, level of activities, resources and visitors. Eventually, we identified five distinct phases, each starting and ending with a main institutional transformation. Changes at the level of activities, human and financial resources, and visitors are presented according this periodization.

4. Reconstructing the evolution of UNIBO museums and collections

In this section, we present the longitudinal evolution of museums and collections at UNIBO from 1970 to 2015. The story occurs in five phases: 1970–1988; 1989–1998; 1999–2002; 2003–2012; and 2013–2015 (also comprising an update of the most recent events up to 2018). Before analyzing the phases, we provide historical information about the origins of museums and collections at UNIBO. Table 1 shows relevant information for each of the five phases.

[Insert tab. 1 here]

Historical background

The origin of the museums and collections at UNIBO is old, in so far as they preserve items from 16th and 17th century private collections, notably those of Ferdinando Cospi and Ulisse Aldrovandi, consisting mainly of natural history specimens, and some archeological items (Findlen, 1984). In the mid-18th century, those collections were transferred to the Institute of Science from other locations in Bologna. The institute was a science academy, where students and teachers of the *Studium* (the old denomination of the university) engaged in experimental research and debated on scientific subjects. The location of the institute was Palazzo Poggi.

In 1804, during the Napoleonic occupation, the function of the Institute was taken over by the reformed *Studium*, which became the University of Bologna (Simeoni 1947; Cremante 1987). The headquarters of the university was physically transferred to Palazzo Poggi, and it absorbed the collections of the institute. In 1860, after the annexation of the Emilia Region to the Kingdom of Piedmont and Sardinia, the university was reorganized. Macro chairs were broken down into more specialized chairs and the collections were also rearranged according to the new academic structure. For instance, the Chair of Natural History was divided into three new chairs, each corresponding to specific disciplines: mineralogy, zoology and geology. As a result, materials of the Museum of Natural History were divided into three collections, each of them attached to one of those chairs.

Hand in hand with the creation of other chairs, the subdivision of the collections according to disciplinary criteria continued. When chairs developed into departments³ that were moved into separate buildings, the fragmentation of collections became even more marked. The professors in charge of those collections continued to enrich them, in some cases setting up structures called “museums” (most notably the museums of mineralogy, zoology and geology). In those cases, the denomination “museum” meant that they were collections of items catalogued and displayed to be accessible for educational and research purposes.

³ Chairs were first grouped into institutes from the beginning of the 20th century. It was only in 1997 that institutes were transformed into departments. This process brought about significant changes in the responsibilities, degrees of autonomy and dimensions of the new academic structures. The discussion of this transition is outside the scope of the present paper. For simplicity, we use – in some cases anachronistically – the term “department” throughout the paper.

Occasionally, they admitted non-academic visitors, but the museums' public consisted primarily of university staff, students and researchers.

A relatively new museological initiative was the Museum of the VIII Centenary, organized in 1888 on occasion – as the name indicates – of the anniversary of the creation of the University of Bologna. The museum displayed seals, *insigna*, and honorary documents bestowed for that occasion by other universities. Initially established in the Archiginnasio library, it was transferred to Palazzo Poggi in 1936, where it became known as the Museum of the Studium and of the VIII Centenary (Bortolotti, 1988). In its new location, its main function was to confer dignity to the headquarters of the university administration.

To complete the picture, inside Palazzo Poggi there was also an array of other collections: the military architecture collection, the geography and nautics collection and the portraits collection; the Indian museum, the obstetrics collection; and a selection of objects from the old Aldrovandi and Marsili collections (Rodrigues 1954, 1955; Emiliani 1979). This heterogeneous ensemble of collections was referred to as the Head Office Museums (*Musei della Sede Centrale*), and from 1984 as Museums of the Rector's Office (*Musei del Rettorato*).

While the collections located in Palazzo Poggi were under the direct responsibility of the university's central administration, the departments managed all other museums and collections. The state of preservation and the quality of the spaces hosting the collections varied according to how relevant the items were to research and teaching and to the awareness of the departmental boards. Generally, the care of the collections was entrusted to associate or full professors appointed by the boards. They were given that task either because of their subject-specific knowledge and expertise, because they used the collections for teaching, or because they had a personal interest in the history of their disciplines. The position was neither formally recognized nor paid for. Sometimes these professors were assisted by university technicians who had the skills required for looking after objects. It must be kept in mind that the situation was not different in other non-university based science museums: well into the 20th century, very few people in charge of museum collections had specialized curatorial backgrounds.

As for access to the university museums and collections, we do not have a detailed account of the extent to which they admitted visitors before 1985 (the lack of similar information is quite telling in itself of the marginal role of "visitors" at that stage). In principle they were "open", but in practice they did not cater for the general public. Nevertheless, there were some exceptions, most notably the Museum of Zoology, which was opened to the public in 1949 (Sabelli 1988; Zambotti 2015). Therefore, at the beginning of the period under investigation, there were entities created originally as teaching and research museums, along with others set up as spaces where items of historical value were displayed.

A different solution was adopted for the Museum of Antiquities, which included an archaeological and a numismatic collection, and also medieval and ancient extra-European objects. Although a chair of archaeology was established in 1803, with a Museum of Antiquities being created in 1810 (based on the collections of the antiquity room of the Institute of Science), in 1881 the collections of this section were removed from the university and transferred to the new archaeological museum established by the Municipality of Bologna (Morigi Govi and Sassatelli, 1984; Tovoli, 1984). This case provides an interesting element for comparing collections developed inside the university but no longer run in that context, with those that remained university based. This aspect will be examined in the discussion section.

Phase 1: From early initiatives in the 1970s to the IX Centenary celebrations (1988)

This phase witnesses the first attempt to overcome the strictly disciplinary perspective characterizing the previous period. This transition was triggered by two events: the broader political process of repositioning the city of Bologna from a cultural point of view, and the celebrations of the IX Centenary of the University (1088–1988).

A new interest in the historical heritage of the museums emerged in the early 1970s in the context of an ambitious project to revitalize the cultural and social life of Bologna. The project combined an urban plan for the reorganization of the center of Bologna and a plan for the coordination and recovery of the historic heritage of the university (Vv.Aa., 1970; Varignana, 1972). Its promoters were Pier Luigi Cervellati, professor of urban studies and member of the Bologna City Council, and Andrea Emiliani, an art historian, superintendent, and Director of the National Art Gallery of Bologna.

Although for a variety of reasons this highly visionary political, social and cultural program was not fully implemented, attention began to be paid to the improvement of the accessibility of university collections and museums *as a whole*. The goal was to make them visible to the academic community, as well as attracting the attention and the interest of the lay public (Cervellati 1970). To achieve this long-term goal, in the early 1970s the Board of the University created the Committee for the Museums and Archives of the University of Bologna (CMA hereafter), an advisory group to promote projects for the restoration and preservation of the university's scientific and historical heritage.

Early signs of this new approach to UM&C can be seen in the temporary exhibitions promoted by the CMA and jointly organized by more than one department: "The objects of the Institute of Science" in 1979 (Vv.Av., 1979); "The 18th century anatomical waxes in Bologna" in 1981 (Armaroli, 1981), and "The veterinary museums" in 1984 (Vv.Aa., 1984).⁴ The exhibitions were designed to create a bridge between the university and the city. It was also in this period that the idea of extending the purpose of UM&C beyond their historical interest, and to give them a teaching function for students of primary and secondary schools, began to emerge (CMA, 28 May 1984). In addition, since in the early 1980s, the university had arranged guided visits for the general public (CMA, 28 May 1984). The concern with the state of conservation of UM&C became more pressing in 1984, when plans for the IX Centenary of the foundation of the university began to be discussed in more detail. UM&C were expected to play a central role in the celebrations. The goal was to open all UM&C in time for the event (CMA, 20 December 1985) and create "opportunities of historical aggregation for the university and the town" (CMA, May 1984, Vv.Aa., 1987).

This acceleration in the preparation for the centenary also gave new life to an older project of urban regeneration, which included the university museums within a broader reorganization of the city's museums. Two experts drafted a new version of the project in 1985, where they discussed also the guidelines for the reorganization and expansion of the museum-related spaces within Palazzo Poggi.

To make UM&C accessible to students of primary and lower secondary schools during the IX Centenary celebrations, in 1986 the university signed a five-year agreement with the Bologna municipality. The university selected eight museums and equipped them with teaching rooms, while the municipality contributed 18 teachers⁵ (see Boylan, 1999 for a similar initiative at the Manchester University Museums). In 1987, the university outsourced to the Provincial Cooperatives' League (*Lega Provinciale delle Cooperative*) the tasks needed

⁴ Additional evidence of an attempt to overcome disciplinary and departmental barriers can be seen in the publication of collective volumes where historians and the professors in charge of the collections offered detailed accounts of the origin and the state of the historical heritage of the University (Vv.Aa., 1987, 1988).

⁵ The initiative is still ongoing. The number of municipality teachers grew up to 23 in 2003, and then decreased to 16 in 2010. To partially compensate attrition due to retirement, in the last two decades the University has appointed few units of personnel in charge of educational activities.

to open the museums for the celebrations. This included cleaning the premises and cabinets; painting the walls; installation of electricity and heating facilities; the provision of personnel for keeping the museums open (also during the weekends), and for the promotion of the museums. Overall, the initiatives launched before and during the IX Century celebrations were successful in focusing attention on the historical heritage of the university. In phase 2, we shall see how the institutionalization of the transition from collections to museums faced (and clashed with) the rigidity of the university administration, and the incapacity of the latter to understand the specificity of those resources.

Phase 2: The administrative constraints – CISMA 1989–1998

After the conclusion of the IX Centenary celebrations, museums continued to be open, either daily or for special temporary exhibitions. The most important change was the creation of the Interdepartmental Service Centre for University Museums and Archives (CISMA) (DR 693/202, 1989). The statutory aim of CISMA was to “promote the development, the preservation, the expansion, the protection and the diffusion of knowledge about the historical/scientific and naturalistic materials, fostering also the integration with the educational and scientific activity”. It was also the aim of CISMA to “promote links with external institutions, public and private, and especially with local authorities” (DR 693/202, 1989).

The structure of CISMA consisted of the Director, the Technical-Scientific Committee (TSC), the Sections and the Council (*Giunta*). The members of the TSC were the museum representatives (*responsabili*), nominated by the departments to which the museums and collections were attached. Their task was to ensure the functioning of each museum or collection, which involved everything from organizing to displaying and preserving the collections. In general, the representatives were members of the academic staff who developed a personal interest in the historical collections (many have been CMA members) and were willing to devote time to their care. Interestingly, as in the past, the position of “representative” was not an official one, therefore neither their position within the academic structure nor their duties were precisely defined. The Director of CISMA was nominated by the representatives.

In terms of the activity carried out in this phase, the most important project was the creation a museum representing the early history of the University: the Palazzo Poggi museum. This was to be obtained by reorganizing the collections of the Museums of the Rector’s Office and by moving to that location entire pre-1800 collections or selected objects from other departments (most notably the anatomical wax models). The project was inspired by Cervellati and Emiliani’s guidelines issued in 1985. The Palazzo Poggi project also required major architectural and construction work, including the integration and adaptation of rooms of the adjacent University Library. Even more ambitiously, the project sought to make Palazzo Poggi the cornerstone of the entire museological project of UNIBO. However, as we shall see, the implementation of the project was characterized by lights and shadows.

The proactive approach to fundraising adopted by CISMA in this phase is certainly remarkable: in the early 1990s CISMA raised €413,000 from the Ministry of University and €12,000 from the National Research Council, to fund the design and construction works at Palazzo Poggi. On the negative side, the project was characterized by conflicts, design fallacies and delays, which eventually caused the project to last for more than 10 years. In fact, in 1994, the construction company went bankrupt and construction stopped for two years. Even the transfer of collections from the Departments to Palazzo Poggi was thwarted

by episodes of jealousy and attempts to boycott the initiative.⁶ Overall, the lengthy and troubled development process of Palazzo Poggi weakened the initial expectation of turning it into the driving force of the whole university museum system. As partial compensation for the delay, bank interest on ministerial funds provided important income for Cisma's activities.

Quite apart from the Palazzo Poggi project, what continued to lack in this period was a medium/long-term plan for UM&C as a whole. Cisma functioned as a sort of money drawing machine, allocating relatively small amounts of money to each museum or collection, based on representatives' requests. Money was mostly spent for office equipment (especially computers), cabinets, restoration of items of the collections and publications.

The case of the physics collection is even more telling. A Museum of Physics was created in 1907, in a spacious hall of the new building of the Physics Department. However, in the 1950s the museum lost its importance and the collection was removed from the hall; from then onwards, the objects were arranged in cabinets placed along the corridors of the department and in rather precarious conditions. When in 1995 the problem was addressed, the representative of the Physics Department sought not to reorganize the old Museum, but rather to create a new Museum of Science and Technology outside Bologna. Although the TSC did not support the project because of its unclear relationship with the university, the collection of new apparatus to be used for the creation of that "external" museum was further expanded in the following years (TSC, 29 March 1995, see Kelly, 2000, for a critique of the "countless random assortments of artefacts assembled by long forgotten professors and now jumbled together in cluttered display cabinets" characterizing some university museums). The items accumulated in storehouses and the cost of the rent was charged to the university, while the problem of the collection kept in the department remained unsolved.

Evidence from the committee minutes suggests that the reasons behind these weaknesses related mainly to Cisma's organizational setting, and the lack of adequate financial and human resources. Although Cisma was formally a responsibility center with administrative and accounting autonomy, the departments nominated the representatives and were responsible for the collections and the parts of the buildings in which they were located. The power of departments (and the parallel weakness of Cisma) resulted from the fact that Cisma was set up as an Interdepartmental Service Centre. Our sources show that this distinctive organizational entity was not selected because it best suited the goals of preserving and presenting the collection, but allegedly because no better alternatives were available within the university statute (Cisma, 1996; Cristofolini, 1996). In addition, the decision to include from the beginning 12 very heterogeneous museums and collections in terms of conservation and accessibility made the development of a common cultural project much more difficult.

As for financial resources, the annual operating grant provided by the university amounted to almost €100,000, plus €25,000 earmarked for cleaning (to allow comparisons, all monetary values before 2001 have been transformed from Italian *lire* into euros). This was denounced several times in the reports of the TCS as barely enough for the "basic metabolism" (as it was described) of the existing museums and the maintenance of the collections. That said, Cisma in this period could also rely on extraordinary inflows deriving from interest generated by the unspent ministerial grants of 1991 and 1992 (TSC, 30 March 1994).

⁶ See for example the vibrant reaction of Carlo Sarti (curator of the Museum of Geology), when in 2000 the objects from the Marsili collection kept in that museum were removed in order to create the Marsili section of Palazzo Poggi (Sarti, 2010).

In terms of human resources, CISMA was far from autonomous. As displayed in Table 2, CISMA had only around three staff, who performed administrative duties. In fact, in this phase, the departments provided the personnel involved in museum-related activities.

[Insert Tab. 2 here]

To some extent, the academics appointed as representatives operated as head curators, although they did not have the professional museological preparation for that task, as in the past. Some help was provided by departmental staff members, usually classified as technical assistants. To our knowledge, in 1994, there were five such employees between the Museum of Geology (2), Museum of Mineralogy (1), Botanic Gardens (1) and the Museum of Comparative Anatomy (1). Although they were appointed to perform curatorial tasks, the extent to which they engaged in this activity varied (TSC, 14 June 1994; D'Amico 1994). The position of technical assistant was often a temporary occupation for researchers awaiting to be appointed to academic positions.

Moreover, starting from the late 1990s, human resources were complemented by low-skilled, external personnel performing a variety of curatorial/museological tasks on a temporary basis (see Table 3). There were students who collaborated on a part-time basis (around 25 in 1997), recipients of scholarships from upper secondary schools, and conscientious objectors assigned to UM&C (approximately seven per year). In addition, short-term contracts were issued for more complex tasks like cataloguing, preparing or editing publications, assisting in the organization of temporary exhibitions and specialized repair work.

[Insert Tab. 3 here]

The lack of personnel was by no means the only constraint. What was missing in the organization of CISMA was someone in charge of activities to bridge the units, like planning a common policy regarding exhibitions and other outreach initiatives. The director was in fact the coordinator of the TSC, but did not have a clear mandate for the implementation of any action plan. CISMA was de facto a federation of units, which remained administratively dependent on the departments. As the Director of CISMA (and representative of the Museum of Mineralogy) pointed out as early as in 1994:

“The museums are institutionally regarded not only as sections of CISMA (this would be a good thing), but above all sections (weak ones) of the individual departments and institutes. [...] there is the danger of a vicious circle, in which a weak identity adds up to limited funding and personnel, thereby producing limited activity, as well as diverting some of the few collaborators (among them curators and conscientious objectors) towards other non-museological activities” (D'Amico, 1994).

As dissatisfaction mounted, plans began to be discussed for the redefinition of the position of CISMA and its Statute. This brings us to the next phase.

Phase 3: Expectations for an integrated approach to museums and collections (1999-2002)

Starting from 1995, two alternatives were considered to overcome CISMA's institutional weaknesses. Within a more general revision of interdepartmental and service centers, the university administration proposed centralizing the appointment of the director and the

approval of CISMA's budget. On the other hand, CISMA proposed the creation of a "multicentric museum of natural history and history of science of the university", an organizational form that, in CISMA's view, would have been more functional to the preservation and the presentation of the collections (TSC, 18 July 1996). This clashed with the university proposal, which implied a reduction rather than an increase of CISMA's autonomy.⁷

What followed was a prolonged period of negotiation with the university. Eventually the result was a compromise. While the university did not allow CISMA to obtain a separate administrative status (it remained an interdepartmental service center), a new regulation from 1 January 1999 partially modified the relationship between the service center and the departments, along with a new denomination for the former (*University Museums System-SMA*, see DR 474, 1998). A significant departure was the decision to entrust to SMA with the responsibility of the collections inventoried in the registers of the departments. SMA could now, at least on paper, make decisions about moving, lending and preserving historical items. On the other hand, the departments continued to nominate the museums' representatives and to have responsibility over the physical premises where collections were located (although their administration was entrusted to SMA).

A key critical issue remained the number and qualification of personnel. As shown in Table 2, SMA could now count on 13 people, 10 more compared with CISMA. However, the rise in the number of staff was mostly due to the transfer of personnel already working on UMCs from the departments to SMA (for instance gardeners). Interestingly, as far as curatorial positions are concerned, such transfer resulted in a reduction in the actual number of people. In fact, out of the five people performing curatorial activities in the CISMA period, only two were transferred to SMA. The remaining three opted for an academic career and abandoned collection-related activities. As a result, SMA had to face a reduction in the number of its staff, because the central administration did not compensate the losses with new appointments.

One of the reasons that favored a solution in the dispute between the university and CISMA/SMA over the organizational design was perhaps an awareness that the university would soon prepare for another important cultural event: in the year 2000 the city of Bologna became European Capital of Culture. Once again, an exogenous and contingent factor triggered a new phase of intensification in the activities of the UM&C.

The main visitor-oriented activities inaugurated in 2000 was the reorganization of the Botanic Gardens and the creation of a semi-permanent installation called "The Whale". Although it was located in the Department of Zoology, it was the result of collaboration between the Museums of Zoology, Comparative Anatomy and Anthropology, and it was envisaged as the preliminary step for the creation of a Museum of Evolution. It was also in 2000 that the new Museum of the IX Centenary, a virtual museum entirely based on digital and analogue technologies became part of the SMA (TSC, 15 November 2000).

Even more importantly, after almost 10 years of endless delays, the museum of Palazzo Poggi opened as part of the Bologna 2000 initiatives. The inauguration of the museum was the final act of the extraordinary long mandate by the same Rector, in charge from 1985 to 30 October 2000 (just two days after the inauguration of the Palazzo Poggi museum: not by coincidence!). Thanks to the opening of Palazzo Poggi and initiatives like the weekend opening, UM&C gained new visibility in this period. Some exhibitions addressing a wider audience were organized in 2000–2002. One of them, "Feathered Dinosaurs" was also the result of the collaboration between the Museums of Zoology, Comparative Anatomy, and

⁷Regarding the university administration proposal, an aspect that should be investigated further is the role of the Rector in suggesting this specific solution. Regarding CISMA's proposal, documents do not report the views of distinct representatives and the extent to which they agreed or not with such project.

Anthropology and was successful in attracting the public (20,000 visitors in three months). This is an example of the synergy that was meant to be one of the objectives promoted by SMA. A project for a web portal and e-learning activities for the university museums was also launched in 2003. Meanwhile, catalogues and other material concerning specific collections were published, which enhanced the public visibility of the collections.

Phase 4: Pitfalls and conflicts: toward a new fragmentation (2003–2012)

This phase is triggered by a major institutional change. Following a conflict that, according to our sources, began in 2000, the Palazzo Poggi Museum cut almost all ties with SMA in 2003. The separation happened in different stages. Immediately after the election of the new rector and the inauguration of the Palazzo Poggi museum, SMA invited three experts to assist with the further scientific and organizational development of Palazzo Poggi, including Walter Tega, professor of philosophy, Dean of the Faculty of Literature and Philosophy, and expert of history of the Institute of Science (TSC, 15 November 2000).⁸ In view of the complexity of the project, Walter Tega suggested the creation of an administrative structure in charge of the museum's further development. This consisted of a Chairman (prof. Tega), a Director (Ms. Lanzarini, already secretary general of SMA) and a scientific committee (TSC, 01 December 2000).

However, just after the opening of the museum and the election of the new rector, the chairman began advocating the idea that the administration of that museum would have benefited from a dedicated organizational structure, independent from SMA (TSC, 28 March 2001).

In March 2001, Walter Tega prepared a new regulation for Palazzo Poggi, which was presented orally and approved during a TSC meeting (TSC, 03 April 2001). According to the regulation, the Palazzo Poggi museum was part of SMA but with an autonomous status: its director was to be appointed by the rector, it had its own administrative officer and scientific committee. As a form of liaison with SMA, the Director of SMA joined the Scientific Committee of Palazzo Poggi (DR 137/38, 2001). More importantly, according to that regulation, part of the central administration funding to SMA was specifically designed for Palazzo Poggi's activities.

The relationship between SMA and Palazzo Poggi soon turned out to be tense. As emerged during the interview with SMA secretary general, the *casus belli* was the payment of invoices issued by Palazzo Poggi, which SMA did not want to pay, given that SMA was legally accountable to the Court of Auditors. However, the real issue at stake was the attempt by Palazzo Poggi to become autonomous from SMA (TSC, 12 December 2001). As the documentary evidence suggests, the problem was that the meaning and extent of the "autonomy" conferred to Palazzo Poggi regarding the use of financial resources was neither clear nor shared between the two parties. According to Palazzo Poggi management, decisions about their expenses required only a formal approval by SMA; on the other hand, SMA tried to retain its control over Palazzo Poggi spending (and organization) (TSC, 27 March 2002).

Notwithstanding bitter complaints from SMA, the autonomy of Palazzo Poggi was confirmed by a new regulation approved by the university administration in 2003: it was determined that funding for the latter would come directly from the university (along with grants from other public and private sources), thus excluding SMA from an intermediate round of approval. Inevitably, the line adopted by Palazzo Poggi aroused the resentment of SMA, first of all of its director: as he pointed out sharply, SMA was not consulted on the decision regarding the administrative and financial autonomy of Palazzo Poggi (TSC, 23

⁸ Walter Tega was also one of the candidates for the Rectorship in 2000. He withdrew in the last stages of the race, indicating, as emerged during the interviews, to his supporters to vote for the candidate who was eventually elected.

March 2003). It must be pointed out that the views within SMA about the autonomy of Palazzo Poggi were by no means unanimous, reflecting the internal fragmentation of SMA. It must be noted, in fact, that some of the members of the TSC of SMA were also members of the Scientific Committee of Palazzo Poggi, and it was in that capacity they signed a tough letter addressed to the rector in which they accused SMA of ignoring the autonomy of Palazzo Poggi and compromising the development of its initiatives (Palazzo Poggi Scientific committee, 22 March 2002).

What seems to emerge in this phase is a two-speed system. On the one hand, Palazzo Poggi Museum was very active in developing international relationships and in organizing temporary exhibitions (“Representing the Body: Anatomy from Leonardo to the Enlightenment” in 2004–05; “Science Mirrored in Art” in 2005–06; “The Journey: Myth and Science” in 2007, just to mention few). On the other hand, after 2003 SMA suffered a situation of crisis and uncertainty (Lanzarini, 2011). Figure 1 shows the dynamic of budget expenses for Palazzo Poggi and SMA respectively in the period 2003–2013. While Palazzo Poggi intended spending to peak in 2005 and then remain stable until 2013, SMA experienced a sharp decline in spending capacity, because of cuts in funding, and, arguably, lack of significant spending proposals. Data suggests that rather than funding Palazzo Poggi with additional resources, the university administration supported the new museum at the expense of SMA, within an overall reduction of resources.

[Insert Fig. 1 here]

Concerning human resources (see Table 2), museums and collections staff increased to 22 positions in 2010, mainly due to an increase of gardening posts. Interestingly, our data shows that despite its autonomy, Palazzo Poggi did not have its own staff until 2008, when one secretary and two museum operators started to be listed in the Palazzo Poggi section of the university yearly report. In addition, the weight of volunteer staff within university museums continued to grow, revealing a condition of exogenous sustainability in terms of human resources. In 2006, the university successfully applied to the National Civil Service to host 24 volunteers each year, enabling the opening of museums on the weekend (from 2009, the number of volunteers is of 36 each year), to which should be added more than 40 part-time students per year (see Table 3). Starting from the late 2000s, most museums depended on volunteer work and continued to lack a curator. Because of this, according to the TSC, the situation of the university museums of Bologna did not fulfil the requirements of the ICOM Chart of Professions (TSC, 11 November 2009).

Despite administrative uncertainty, efforts were made to improve museum educational activities. For instance, in 2010 SMA signed an agreement with the Educational Sciences Department to improve the educational programs and services according to best practice in museum-based education. From the beginning of the 2000s, we also observe a greater effort to attract general audiences, like the launch of a website (2004), the publication of a university museums guide (2005), and a communication campaign on the educational offer for primary and secondary schools (2009). The focus of university museums on general audiences led to an attendance of about 100,000 visitors in 2012, which included 20 per cent for Palazzo Poggi and 80 per cent for SMA-federated museums (UNIBO, 2013).

Phase 5: 2013–2015 and more recent events

In 2013, Palazzo Poggi was reintegrated with SMA, overcoming the previous conflicted situation. This happened under the new directorship of SMA of Prof. Varni (from 2010) and after the retirement of Prof. Tega (2011). Quite paradoxically, a curator was appointed at Palazzo Poggi only when the museum rejoined SMA.

With the new Rectorate in 2015, a new President of SMA was also appointed. Although an assessment of activities, resources and achievements after 2015 is beyond the scope of this paper, there is one element that is worth mentioning, as it addresses explicitly one of the most controversial elements in the whole story: the ‘ownership’ of the collections. A new regulation issued in the 2017 stated that the owner of the collections is the university and that President of SMA has administrative responsibility over them. As a consequence, no one could argue – as had occurred in the past – that collections belonged to the departments or individual museums (including Palazzo Poggi). This represented a first move towards a clearer definition of duties and responsibilities. It took “only” 45 years to happen. As an update, the number of visitors continued to grow, reaching 140,000 in 2018.

5. Discussion

This research maps the evolution of initiatives to redefine the role of UNIBO museums and collections from the 1970s up to 2015, focusing on administrative and organizational dynamics. Five phases emerged from the longitudinal analysis. Starting from the 1970s, in Phase 1, an attempt to reimagine the function of UM&C took place. For the first time, the role of UM&C was addressed *as a whole*, and was included in the broader picture of the cultural institutions of the city. However, early attempts to work across disciplines and institutional boundaries simply did not succeed. At the end of Phase 1, the inward-looking approach of academics played a central role in reducing the vision developed in the 1970s to a less ambitious short-term celebration of the history of university (the IX Centenary in 1988). Then, in Phase 2, departments strengthened control over “their” collections. In other words, the injection of a new curatorial approach was further weakened by administrative constraints and academic power, ending up with the establishment of a powerless federation of museums (CISMA). In Phase 3, the efforts to redesign the museum “system”, which partly attempted to again integrate UM&C with the external environment, soon led to conflicts. A peak of institutional crisis marked the beginning of Phase 4, when the new Palazzo Poggi Museum left the museum system for reasons that were removed from any curatorial vision, or to put it more clearly, because academic power cannibalized the (weak) transformational design. The fragmentation was only fixed in Phase 5, when Palazzo Poggi joined the system again, and the redefinition of the unitary ownership of the collection by the university as a whole was reinforced.

In reconstructing the administrative history of UNIBO museums and collections, we adopted a holistic approach, looking at issues specific to university museums – i.e. their relationship with teaching and research – but also considering the interplay with broader organizational and institutional aspects, looking at conditions for actions, as common in general management approaches and arts management research.

By simultaneously analyzing institutional changes, human and financial resources, activities and visitor profiles, we found that while all museums and collections at UNIBO have been accessible to the public for the whole period (with visitor numbers overperforming most university museums elsewhere), the difficulty of sustaining a consistent and long-term process of change within the university administration was impressive. As expected, two key areas are particularly problematic: the professionalization of UM&C staff and the institutional design. Regarding the former, throughout the years, we witness a worrying process of deprofessionalization, with few curators in charge in 2015. In addition to budget cuts, this is due to the persistent lack of acknowledgement of the professional nature of museum work, requiring tailored selection criteria and career paths. For instance, when the Secretary General of CISMA/SMA retired in 2016, the administration decided to replace her using an internal recruitment process open to any member of the administrative staff, without

including any competence in museum management among the key selection criteria. It is also worth stressing again that museum-related positions have been used over time to temporarily “park” young researchers.

In terms of institutional design, various attempts to integrate UM&C administration and grant autonomy to the management unit only partially met expectations. Departments seemed to be affected by a RIMBY (Remain In My Backyard) syndrome with regard to their collections. This implied they cared little about heritage items under their responsibility until a physical or organizational change was suggested that entailed significant reorganization. The power of departments over collections sustained the perpetuation of the separation of collections on a disciplinary basis for a long period, holding almost a right of veto against more strategic development of the university museum system as a whole. According to new curatorial approaches, a centralized (or less fragmented) museum would have been able to provide a better service to visitors.

About 30 years after the IX Centenary celebrations, the situation of museums and collections in Bologna is far from satisfactory: collections are more understaffed than any other cultural organization we have analyzed (Zan et al. 2015), and there is an almost total absence of curatorial positions. They also depend to a large extent on outsourcing and voluntary work to manage increasing visits, and are increasingly underfunded (with just one-fifth of 2000 funding levels). Given this situation, the university museums at Bologna will have serious problems meeting the requirements recently set by the Ministry of Culture museums standard (MIBACT, 2018).

Thanks to our “nearby” organizational and disciplinary view, our analysis provides some new insights, at least in terms of the debate on university museums at UNIBO. Regarding the former, our partially embedded role allowed us to highlight system-level administrative issues while respecting, but also overcoming, a narrow focus on the specificities of each collection or museum. Regarding the latter, given our attention to managerial aspects, we were able to systematically quantify both human and financial resources, uncovering trends (Palazzo Poggi funding at the expenses of SMA) and gaps in terms of data availability (*visitors in primis*).

More radically, we introduced a managerial perspective not heard in the internal administrative and academic debate. Overall, what strikes us is the delay of UM&C in reacting to pressures for efficiency and effectiveness, at least compared with Italian museums in general, which have been affected by these trends since the 1990s (Sylvers, 2004).

Conclusion

As time passes, the process of reimagining the role of UM&C starts having a history of its own. In this paper, we analyzed the history of a first mover – UNIBO – providing an account of the expectations, initiatives, failures and successes encountered during the past 45 years.

Two features of the UNIBO context are limitations for the validity and generalizability of our findings. First, we worked on incomplete set of data, especially in the areas of financial and human resources and visitors, in a situation without adequate archives which continues to the time of writing (a sign itself of a lack of accountability for UM&C). Second, the case analyzed in this study is in many ways unique: we are working on the oldest still-operating university in the world, which is likely to have much richer and more complex UM&C than the “average” university; it is also a mega-university (with around 90,000 students, and all possible teaching and research subjects, in a multi-campus structure), where the relationship between UM&C and the university is characterized by unusual levels of internal complexity; and finally, it sits within the context of the Italian university sector, which is likely to differ significantly from other administrative contexts.

Nonetheless, we can provide some suggestions for a research agenda and practical implications for managing UM&C, based on the three elements of distinction of this paper presented in the introduction.

First of all, there is a need for long-term administrative history research on UM&C. While there is an awareness of initiatives that took place between the 1990s and 2000s, both in terms of capital investment – e.g. the Museum Gustavianum in Uppsala in 1997 (Worley, 2011; Munktel, Ödman 2012), the refurbishment of the University of Manchester Museum in 2003 (Alberti 2009) – and reorganizations – e.g. the creation of the Committee of University Collections and Museum in Strasbourg in 2006 (Soubiran, 2007) and similar initiatives at the University of St Andrew (Kozak, 2006) and University College of London (Were, 2010) – more research is needed on how these and other experiences have evolved over time. We would encourage researchers to go back to the sites they have studied or to the experiences they have mentioned as significant 10, 15 or 20 years ago to see how the original idea has evolved, what supported or hindered change, what was achieved or not achieved. What matters, in our view, are not only the intentions, but what actually happened over time: management, after all, is about “getting things done”.

Second, the holistic general management framework used in this study, which focuses on long-term institutional changes, curatorial and visitor-related activities, and human and financial resources, could be used to structure such an analysis, facilitating comparison at a national and international level at a later stage. What emerges is the need to overcome the bias towards projects of transformation as extraordinary investments, focusing instead on the conditions for carrying out day-to-day operations.

Third, our “nearby” approach could be used by other UM&C to improve the level of understanding of trajectories of change, while increasing their effectiveness and overall sustainability (including the organizational one). We, therefore, call management scholars to “get their hands dirty” with UM&C at their own institution.

Such a perspective could help foster a debate on the problematic nature of developing museums *inside* the institutional framework of universities, and stimulate an open discussion on the alternatives available. Based on our findings, in fact, one could argue that UNIBO museums and collections, or a selection of them, would enjoy better opportunities for development *outside* the university administration.

The meaning of “outside” should not, however, be oversimplified. It does not, in fact, simply imply deaccessioning, intended as selling some of the objects of collections in the market (for a recent review of the controversy see Fisher-Jones, 2020).

It could mean, as a first alternative, transferring the collections to other cultural institutions. There is an interesting precedent in this regard at UNIBO. The collections of University Museum of Antiquities (mainly archaeological and a numismatic collection) were transferred to the Civic Archeological Museum of Bologna in 1881 (Tovoli, 1984). Therefore, after 1881, the antiquity collections management resulted from the “normal” interaction between the curatorial perspective and the (municipal) administrative logic, thus excluding the influence of the university in terms of shifting priorities and jealousy of the collections. The attention that the archeological and numismatic collections received in the last century is incomparably bigger than for other collections that remained within the university (in terms of protection, presentation, perhaps even in terms of research). The same could be said in terms of resources (people, money), and visitors’ achievement (Zan, 2000).

On the other hand, moving the management of UM&C outside the university administration may involve the creation of new administrative bodies that are capable of dealing with the contemporary challenges of a museum. Outsourcing, in our view, is not enough as it simply did not work in Bologna: the various proposals and experiments that took place at UNIBO – e.g. the project for the creation of a limited liability company to manage

events in 1997, the outsourcing of the exhibition “The Whale” until 2000 – did not survive in the long run, jeopardized by the dominant routines and inertia of the institution.

In Italy, a solution that has been used for public museums has been the creation of foundations (Zan et al., 2007), which are characterized by a public ownership of the collections, combined with private-like rules in terms of human resource management and tendering procedures. The institutional transformation of public museums into foundations followed an attempt at “de-statizing” – rather than privatizing – the management of cultural heritage (Van Hemel and Van der Wielen, 1997), “signifying a measured exit from the public sector, relaxing the rules and excessive regulation that characterize public administration” (Zan et al., 2007 p. 65). That is to say, preserving the public nature of museums, while providing degrees of freedom their management, with adequate levels of differentiation in applying general rules to the specificities of museum operations (in other words, museums that are publicly owned and privately run).

Something similar could be proposed for UM&C in Bologna. This would imply moving towards museums that are owned by the university but run outside the domination and intrusiveness of academic and bureaucratic power/logics. While the university would be the main partner of the foundation, to underline the historical link with academic teaching and research, other partners could include the local administration and representatives of different stakeholders, to strengthen the link with the city and society, as suggested by Boylan (1999).

It remains a promising question whether such a proposal would work in other university contexts.

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Table 1: Rectors, UMCs managing bodies and presidents, 1970–2015

Year	Phase	Rector	Managing body	Director/President
1970s–1988	1	Prof. Rizzoli (1976–1985) Prof. Roversi Monaco (1986–)	CMA	Prof. Predi (early 1970s–1988)
1989–1998	2	Prof. Roversi Monaco	CISMA	Prof. Minelli (1989–1993) Prof. D’Amico (1993–1995) Prof. Cristofolini (1995–)
1999–2002	3	Prof. Roversi Monaco (–2000) Prof. Calzolari (2000–)	SMA	Prof. Cristofolini (–2001) Prof. Predi (2001–2003)
2003–2012	4	Prof. Calzolari (–2009) Prof. Dionigi (2009–)	SMA	Prof. Marcato (2003–2004) Prof. Predi (2004–2010) Prof. Varni (2010–)
			Palazzo Poggi	Prof. Tega (2003–2011)
2013–2015	5	Prof. Dionigi (–2015)	SMA	Prof. Varni (–2014) Prof. Ferrari (2015) Prof. Balzani (2015–)

Table 2: Human resources at CISMA, SMA and Palazzo Poggi, academic year 1989–90 to 2014–15

Phase	Academic year	Administration	Curators	Gardeners	Educational	Janitors	Total
2	1989–90	1	-	-	-	-	1
2	1990–91	1	-	-	-	-	1
2	1991–92	1	-	-	-	-	1
2	1992–93	3	-	-	-	2	5
2	1993–94	3	-	-	-	1	4
2	1994–95	3	-	-	-	1	4
2	1995–96	2	-	-	-	1	3
2	1996–97	2	-	-	-	1	3
2	1997–98	2	-	-	-	1	3
3	1998–99	3	2	6	-	2	13
3	1999–00	3	2	6	-	2	13
3	2000–01	3	2	6	-	2	13
3	2001–02	5	3	8	1	1	18
4	2002–03	5	3	8	1	1	18
4	2003–04	6	3	7	1	1	18
4	2004–05	6	3	7	1	1	18
4	2005–06	7	3	6	1	1	18
4	2006–07	7	3	6	1	1	18
4	2007–08	7	3	6	1	1	18
4	2008–09	9	3	7	2	1	22
4	2009–10	9	3	7	2	1	22
4	2010–11	Data not available					
4	2011–12	Data not available					
5	2012–13	10	4	4	3	1	22
5	2013–14	10	4	4	3	1	22
5	2014–15	14	4	3	3	1	25

Note: The university yearbooks on which this table is based report information on the area of each unit of personnel (technical or administrative) and about wage levels. Thanks to interviews, we were able to understand the personnel tasks and to aggregate, not without difficulties, human resources into categories that mirror the functions of a museum.

Table 3: University and non-university staff involved in UMCs, selected academic years

	1991-92	1996-97	2002-03	2006-07	2009-10
UNIBO staff (CISMA/SMA/Palazzo Poggi)	3	3	18	18	22
Municipality teachers	18	18	23	20	16
Conscientious objectors / civil service	0	7	7	24	36
Part-time students	NA	24	41	43	43
Non-university staff	18	49	71	87	95
Total staff	21	52	89	105	117

Note: data on non-university staff is not available for every academic year. A complete picture of non-university staff is available only for the academic years displayed in the table. Part time students were already employed UMCs in 1992, but data are missing for this year. Besides, 1996-97 data for part time students are actually from 1994-95.

Figure 1: Budget expenses for CISMA, SMA and Palazzo Poggi (PP), 1991-2015

