

Professional Utopianism and Administrative Naiveté. Uncertainty and Archaeology in the Shipwrecks of Pisa (1998-20??)

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Abstract

Between 1998 and 2000 archaeologists discovered nine well-preserved Roman shipwrecks at San Rossore, Pisa, 500m from the leaning tower. Shortly afterward a grand vision for a *museum with three vertices* was articulated: a public excavation area plus a conservation laboratory and museum of Mediterranean navigation, to be constructed in a underused 16th century barracks nearby. But despite urgent conservation needs, neither the public excavation nor the laboratory opened until 2005, while the museum remained unfinished in 2015. Irregular and unpredictable budgets caused organizational chaos, while the inclusion of the project in the City of Pisa's urban redevelopment efforts added complexity and delays. Moreover, the grand vision of three interconnected institutions became an obstacle in itself: in the absence of an administrative culture that was able to bring projects *down to earth*, the universalist and utopian tendencies of professional discourse fostered a tendency to choose the *best* project over the most feasible one, adding cost, risk, and uncertainty to an already challenging project. Based on extensive archival research, our paper reconstructs the 15-year history of the project and explores the emergent management issues at this unique site, including the role of professional optimism, bureaucratic myopia, urban planning, and uncertainty.

Keywords: salvage archaeology; heritage management; Pisa; professionals; managing uncertainty

Introduction

This paper examines the organizational dynamics that emerged from the discovery of a group of well-preserved Roman shipwrecks in Pisa, Italy. In December 1998, archaeologists discovered the first of 16 shipwrecks during construction of a new directional center by the Italian State Railways at San Rossore, 1 km north of the center of Pisa. Known as the *Navi di Pisa (ships of Pisa)*, the shipwrecks are globally important finds, but also highly fragile, required costly conservation interventions and access to extensive technical expertise. The excavation, conservation, and museification of the finds have now stretched over 17 years and represent an extremely complex example of organizational activity.

The discovery and its outcomes present numerous elements of interest for management scholars. It represents yet another example of the extension of economic and managerial discourse into other empirical contexts, in this case that of archaeology (and cultural heritage more generally). The field has been rarely examined in management research to date compared to sectors such as health care or education, but raises intriguing issues given the role played by strongly value-driven professional organizations that behave as "clans" (to quote Ouchi). This case in particular highlights how uncertainty is managed (and in some cases,

increased) by the behavior of professionals, allowing us to explore issues of professional utopianism, bureaucratic myopia, professional naiveté, and uncertainty (both that inherent to archaeology, and that produced by the institutional setting of the project). As often happens in unusual contexts dominated by professional logics, the management scholar is called to 'listen' to a dialogue among organizational logics that are quite distinct from those found in non-professional businesses or organizations.

Such situations also constitute ideal opportunities to apply phenomenon-driven approaches. Our sympathy for such an approach, affirmed by a decade of substantive interest in the cultural heritage sector, is not simply due to the fact that interest in arts, archaeology, or heritage by management scholars is so infrequent that much of our research is relatively *pioneering* (von Krogh *et al.*, 2012). Rather, our approach contains the idea that understanding professional processes and dynamics cannot be easily structured *a priori*, and requires an approach to research that is open, loosely-structured, and sympathetic to the logics, values, and professional discourses of *the natives*. In short, it has an ethnographic flavor, in which interesting research questions tend to emerge during field research, or even after its completion (Zan, 2013). We are frankly bored of totally predictable responses from journal referees that offer the banal critique that the paper contains mere "description" (as if reconstructing the meaning of events and complex processes was unnecessary and should be discounted), or exhibit the "so what" syndrome. Understanding, describing, and analyzing a situation is sufficiently *conceptual* for us, given our curiosity and care about the empirical situation being examined, quite apart from the possibility of wider generalizations and implications.

Finding results that are more of a contribution to the profession in question – beyond being important theoretical contributions for management scholars – often accompanies an action-research agenda (Pfeffer, 2009). In parallel we share a desire for civic engagement, rather than working toward the sole end of speeding up our career results within an isolated and totally self-referential academic community, where selecting research topics is strongly characterized by cynicism (publishing papers rapidly, in mainstream journals, without any substantive interest or involvement in any particular issue).

The paper is structured as follows. In section 1 we provide a rapid overview of our approach to research in the heritage sector, introducing essential elements for the non-expert reader such as the distinction between research (or 'on-purpose') archaeology, as opposed to rescue archaeology. In section 2 we proceed to an in-depth reconstruction of events at San Rossore from 1998 to the present through the identification of four distinct phases in our longitudinal analysis. In section 3 we attempt to analyze the case in terms of the relationship between professional utopianism, the myopia of Italian public administration in general, and the implications of this naive interaction for professionals. Conclusions follow.

1. Management research and archaeology: preliminary notes

As is often the case in phenomenon-driven research, our approach is to some extent eclectic. It is articulated through use diverse lenses that are useful for understanding the specificity of the phenomenon under investigation (Pettigrew, 1985). With respect to management debates in general, we are close to the literature on *strategy as process* (from Normann, 1977, onward), strategic change (Mintzberg 1978, 1994; Quinn 1980; Pettigrew 1987), and to research on elements of internal consistency in action and in processes of organizational becoming (with attention to processes but also to the notion of *fit* in itself: Venkatraman & Camillus 1984; Garlichs 2011).

Our perspective is non-positivist, open to interactions among subjects in which sense-making processes are crucial (Weick, 1976, 1977). We are sympathetic to a contextualist approach (March, 1978), and consider the literature on decision-making processes a crucial element for understanding organizational dynamics. Distinct from many management scholars, we pay close attention to accounting and management accounting processes, using a both processual and critical lens (Hopwood, 1987). Since we focus on arts and heritage, we must also take the literature on New Public Management seriously into account, given the

central role of public administration in this sector (at least in the large majority of the world that lies outside the Anglo-American common law tradition: Hood 1991, 1995; Gruening 2001).²¹⁵

Over the years, we have developed a specific approach to cultural organizations that could be defined as the *ethnography of administrations*. We try to reconstruct the tension between professional discourse (archaeology, history, curatorship, musicology etc., depending on the kind of arts organization) and the attention to client orientation and to resources that has emerged in the last 30 years at the international level as one of the fundamental aspects of NPM (Lusiani & Zan 2011; Hood & Dixon 2015). In each specific case, the trade-off among these three, partially conflictual, dimensions typically emerges as a dialog between the dimensions of effectiveness (professional and consumer-oriented) and efficiency. At a distance from the dominant legal or cultural economics perspectives, we are interested in the micro aspects of the heritage sector through a double lens: that of professional discourse and that of public sector change, in which professional organizations are embedded in most countries outside of the United States. With this in mind, this paper is the result of our field research, based on a series of interviews with staff at the Archaeological Superintendence of Tuscany (*Soprintendenza per i Beni Archeologici della Toscana* or SBAT) during 2011-2014, and on a systematic reading of the historical archives of the Superintendence.²¹⁶

To assist in understanding the series of events analyzed in this paper, the reader should understand the important distinction made within the sector between different types of archaeological excavations and discoveries, which interest us for their organizational and administrative implications) (see Zan *et al.*, 2015 for a deeper discussion). On the one hand there is research, or “on purpose” research, where a specific organization develops an excavation or survey program in which the nature of the finds can confirm or disprove preselected hypotheses. Such projects are typically conducted by universities, foundations, or research institutes, who create a program and identify available resources. A successful project will lead to the discovery of artifacts or other types of archaeological information. This is the classic method of archaeological research, associated in the popular imagination with Indiana Jones and other orientalist adventurers.

However, in recent decades most global archaeology is *salvage archaeology*: excavation is conducted incidental to other projects such as housing developments, bridges, subways, dams, or other infrastructure. Here, archaeological surveys or excavations are conducted to verify that the proposed activity will not destroy important archaeological materials (the so-called “preventive archaeology”²¹⁷), or are initiated during a project, when archaeological deposits are found *during* construction and must be recovered before their destruction (“rescue archaeology”). Depending on the relevant laws and regulations, different actors conduct excavations: archaeologists in particular, but working for public agencies, construction companies, or private firms (predominantly the latter two in Anglo-American contexts such as the USA, UK, or Australia).

Salvage archaeology is particularly interesting, and not only for its huge and growing quantitative significance (perhaps 90% of all archaeological discoveries worldwide; a multi-billion dollar industry in the USA, UK, and France). From a qualitative view, the study of salvage archaeology is of interest due to the emergence of a direct conflict between time, resources, and the logic of site protection, and the construction of infrastructure related to economic development. It is perhaps unsurprising, therefore, that it is a highly regulated activity, and regulated in very different ways in different countries.

²¹⁵ Note that we are not particularly seduced by ‘current’ references to the literature, given the vagaries of fashion in the management field.

²¹⁶ We would like to thank the Superintendence for extensive access to the data archive, and Dr. Andrea Camilli for several in-depth interviews.

²¹⁷ A term borrowed from “preventive medicine” (Demoule, 2012), preventive archaeology requires archaeological evaluation prior to approval of development projects (Bozóki-Ernyeny, 2007). The semantic ambiguity between preventive, rescue, and salvage archaeology is notable: there is no one term in English that encompasses the full variety of possible interventions. Rather, the different terms reflect the peculiarities of local (national) administration and regulation.

Above all, it is the degree of uncertainty that distinguishes the two types of excavation. In an “on purpose” excavation the degree of uncertainty is high, in that it is unknown whether you will find what you are looking for; but at least you are looking for something specific on the base of previous studies and hypotheses. In preventive archaeology (or in rescue archaeology, as soon as a find emerges), there is no hypothesis to prove, nor do you know what it is you are looking for: the excavation attempts to understand “if” an archaeological deposit exists, and whether it deserves to be protected or recovered. In such cases uncertainty is an absolute, constitutive condition.

2. The Navi di Pisa: an extraordinary discovery within preventive archaeology

The shipwrecks of San Rossore were capsized or sunk by periodic tsunami-like flooding events on the river Serchio between the 5th century BC and 7th century AD; deposition of the ships in oxygen-free mud almost perfectly preserved the wood and other organic materials such as rope, cloth, and baskets (Table 1). The richness of the discovery led to a hyper-complex set of events and issues. From its beginnings as a routine preventive archaeology investigation, the project quickly transformed into an emergency excavation, then was institutionalized as a combination excavation, conservation, and museum project (though with serious inconsistencies and problems along the way).

Table1. The Navi di Pisa

Ship	Century	Type	Length	Notes
				Little wood survived; more than 1000 cargo amphorae were found
Hellenistic	4th-3rd BC	Cargo Ship		
A	1st-2nd AD	Cargo Ship	medium-large	Probably from southern France
B	1st-2nd AD	Oared transport ship		
C	1st AD	River boat	12m	The name 'Alkedo' was carved in the boat's prow
D	after 5th AD	River boat		
F	end 2nd AD	Boat	9m	
G	2nd AD	Boat	9m	
H	1st AD	Small boat		
I	?	River boat		
P	2nd AD	River boat		

Table 2. Excavating the ships

Date	Activity
1999-2001	Ships C and F excavated
2001	Ship F lifted, placed in tanks, taken to TESECO
2002	Ship C lifted, placed in tanks, taken to TESECO
2002-2004	Most of Ships A and H plus prows of Ships P and G excavated and lifted, taken to Teseco
Dec-05	CRLB opened, Ships C and F moved there in early 2006
2005-2006	Excavation and lifting of Ship D, identification of ship I
2009	Ship I had not yet been lifted; part 2 of Ship A and Ship B awaited lifting
2011	Public bids issued for lifting Ship B and second part of Ship A

The chronological reconstruction that follows identifies four phases of the project, and is based on interviews and archival research at the SBAT in Florence. Though the project is well-documented and well-published academically, no synoptic chronological description of the project had previously been prepared, making it difficult to reconstruct the timelines of basic activities – such as the discovery, excavation, and removal of ships – with any precision. Table 2, which presents our reconstruction of these activities for the nine largely

intact ships found at San Rossore, therefore lacks some basic detail. For us as researchers, this lack of an overall view of the story of the project, even among its protagonists, is a striking feature: why did telling the story of the project as a whole (as opposed to its individual parts) have to wait for outside researchers?

State of Emergency: Making Sense of the Discovery (1998-2000)

In October 1997, routine preventive archaeology investigations began for the proposed new directional center for the Italian State Railways (hereafter FS, for *Ferrovie dello Stato*) at San Rossore. The archaeological cooperative CoIDRA conducted the excavations under the supervision of the SBAT, with funding from FS, according to Italian law. A complex Roman-era archaeological deposit was located at -1.9m below ground surface in November 1997. At this point, an expert from the SBAT estimated that it would take four workers and 3-4 working months to complete the excavation. However, CoIDRA continued excavations in this Roman layer until almost the end of 1998 – eight months beyond the estimate, even before the discoveries that made the site famous. The initial period of excavation, then, seems to have been characterized by a lack of time pressure.

The *navi di Pisa* were therefore not discovered until almost a year of archaeological excavation had been finished. The first ship was discovered at 3 meters below ground surface on December 7, 1998. Two more ships were discovered in January, two more in March, and by August 1999 nine well-preserved ships and fragments of eight more had been discovered and partially uncovered. The nine intact ships are referred to as Ships A-I, in order of their discovery. It had become obvious to the archaeologists that the site was of major international importance for the understanding of Mediterranean maritime history.

The dramatic nature of the finds inspired then-Superintendent Bottini (the officer in charge of archaeology for Tuscany), to suggest a grand vision for the ships of San Rossore. A 'museum with three vertices' would include the excavation site, conservation laboratory, and museum, all open to the public. In his January 1999 letter updating the Ministry of Cultural Goods & Environment (hereafter the 'Ministry of Culture') about the discovery of the first three ships, Bottini suggested that the laboratory and museum be located in the *Arsenali Medicei* in Pisa, a 17th century cavalry stables on the north side of the Arno, about 500m from the famous leaning tower and 800m from the excavation site.

The preparation of a facility for the definitive recovery and consolidation of the ligneous artifacts... could be designed as an worksite open to the public with a complete series of educational aids that illustrate the discovery and the type of work that will be performed on each of the finds... It doesn't seem entirely out of place here to suggest the possible location of this 'worksite-exhibition' in the *Arsenali Medicei*... It should be underlined that this unexpected and extremely important discovery could be transformed into the central nucleus of a museum installation (which could be open to the public from the conservation phase onward) dedicated to the history of Pisa on the sea (Bottini, 1999a).

The three-fold museum, he underlined, could serve as an opportunity to leverage the discoveries to renovate an attractive, strategically located, but underused portion of Pisa's cultural heritage.

Examination of the early numbers and plans clearly reveals the uncertainty of the situation – which was unavoidable, since it was strictly linked to the nature of the discovery. An initial budget of €300,000 for excavation and €250,000 for conservation were sent by SBAT to the Ministry in January 1999, sums that did not include the cost directly covered by FS.²¹⁸ The proposed work had to be redefined when the Ministry only partially accepted the budget in February. Since the *Arsenali* structures themselves required restoration before they could serve as a conservation laboratory, a temporary solution for the laboratory was identified. An industrial warehouse 20km away in the village of Ospidaletto, was donated for one year by a local

²¹⁸ To make reading easier, we express all monetary values in Euro, though the currency was Italian Lira until 2001.

company called Teseco. This time period which corresponded to initial assumptions about the time required to lift the ships – though things would turn out differently, as we shall see below.

Also, an initial timeline was proposed in March 1999: the expectation was that the stratigraphic excavation of the first two or three ships would be finished between the end of 1999 and February 2000, the ships would be transferred to the Teseco building between May 1999 and December 2000, and finally transferred to the Arsenali for museum display between March 2001 and December 2003 (Bottini, 1999b). In 2015 (fifteen years later!), however, all of the ships are not yet in the Arsenali: the difficulties in foreseeing times and costs (compared to actual figures that will emerge later on) in this early period are in themselves signs of the uncertainty that surrounded the discovery for a long period of time.

A sort of schizophrenic situation emerges from two documents from June 1999: the contrast between the grand plans for the site and the lack of available resources was accentuated by the different role played by two different local branches of the Ministry of Culture. In Florence, as usual in the Italian context, the Ministry has several local branches: there is a *Soprintendenza ai beni architettonici* (Superintendence for architectural resources) and the *Soprintendenza ai beni archeologici* (Superintendence for archaeological resources), each of which played a role in the initial budgeting and planning.²¹⁹ At this time, the Superintendence of Architecture prepared a project for a new museum, with a proposed budget of €1 million for ship conservation and €2.5 million for refurbishing the Arsenali building. At the same time, Bottini, Superintendent of Archaeology, complained about the lack of funding for excavation and preliminary conservation of the ships: if funding was not forthcoming, the only alternative would be to rebury the whole site (Bottini, 1999c).

As these parallel discussions were taking place within the Ministry of Culture, a significant change took place that ended the period of preventive excavation. Though the FS hoped as late as February 1999 that the “archaeological problems” could be resolved on a “less than geological time scale”, by August 1 the railway agency had decided to cancel its control center project and formally ceded the site to the SBAT; this was almost two years after excavations had begun, and 8 months after the discovery of the ships themselves. From now on, the site was totally under the ownership and responsibility of the Ministry of Culture. Even as the project management and funding was being transformed, however, a temporary exhibition took place inside the still-unrestored Arsenali for several months in 1999.

Though the large-scale funding provided by FS for emergency excavation of the ships was in one sense a luxury, the speed of the excavations later was to cause problems in itself: exposing all of the ships to air simultaneously ensured that they would require constant conservation attention. In waterlogged wood, most of the cellulose degrades and is replaced by water; allowing it to dry causes the wood to twist and shrink by as much as 50%, or it may simply disintegrate. At San Rossore, archaeologists constantly irrigated the exposed wood to prevent this; yet the large mass of exposed wood and slow pace of excavation caused problems with fungal growth, highlighting the urgency to remove the ships. The conservation needs created both complex working conditions and high operating costs, which provoked Bottini to again suggest covering the excavation site. In consultation with experts from Italy’s Central Institute for Conservation (*Istituto Centrale per il Restauro*, or ICR), encasing the ships with fiberglass was identified as the best strategy for moving the ships from the site; in the laboratory they were later to be impregnated with kauramine, a formaldehyde-melamine resin which mimics the structure of natural cellulose. During the ICR visit, February 28, 1999, the need to move the first four ships was established. Finally, Bottini asked for additional staff at the Pisa work site (Istituto Centrale per il Restauro, 2000).

The year 2000 started with some important decisions. In February, an agreement was signed with the Public Works Agency of Tuscany (Provveditorato delle Opere Pubbliche or OOPP) to provide engineering

²¹⁹ Florence also has a *Soprintendenza ai Beni Artistici* (Arts), which however did not play a role in this story.

assistance for the excavation site, including safety responsibility, and the running of the excavation site itself. The excavation had reached 6 meters below ground level and was criss-crossed by a series of groundwater faults, requiring retaining walls and an elaborate pumping system to maintain it in safety against the danger of collapse. The same month, the design for the new (temporary) laboratory in the Teseco warehouse was completed. On the needs and purpose of the laboratory, however, some differences of opinion emerged: experts from the national conservation institute ICR noted the need for cost-effectiveness and immediate availability of a space for conservation work:

In fact, the lack of an adequately equipped space for the different types conservation interventions anticipated for the ancient ships, together with the unavoidable necessity of reducing recovery times (at the risk of losing the ships or significant parts of them), suggests different methodologies than that those that the Superintendence has followed to date... in sum it seems useful to consider executing projects that allow restoration and temporary conservation in a short time-frame, independently of the creation of a fully-equipped conservation laboratory (Istituto Centrale per il Restauro, 2000).

Excavation work at the site, now known as the *Cantiere delle navi* (*worksite of the ships*) experienced several stops and starts in early 2000, possibly due to safety concerns. Another museum exhibition was under preparation for June 2000. A contract for irrigating the ships with water was issued. The need to remove the ships was becoming more pressing, with constantly growing costs. In Bottini's budget for 2000, infrastructure costs alone (shoring, pumps, metalwork, utilities) were estimated to cost €727,000. The total budget for the year was €1,813,000, which included removal of only three ships (C, D, E). However, the Ministry of Culture allocated only €1,033,000 for 2000, so the remainder of the spending had to be deferred to 2001 (Bottini, 2000).

Important developments also took place in terms of the general design of the whole project. In May the initial idea to use the Arsenali Medicei as a both a laboratory and museum was reinforced by the meeting of the *Scientific Study Committee for the Museum of the Shipwrecks of Pisa*, convened by the Ministry. The committee's report, issued September 14 2000, proved a key conceptual document that guided the project for the next decade. Bottini's initial vision of a "project with three vertices" was here repeated and amplified: the project would include a museum, a conservation lab, and the excavation site, all connected and all open to the public. The laboratory would function as a national training and consulting center for waterlogged archaeological materials, while the museum would focus not only on the discovery at San Rossore but would concern the whole history of Mediterranean navigation. The whole structure of the Arsenali Medicei (6,000 m²) was identified as necessary for these purposes, requiring negotiations with the University of Pisa, which leased part of the complex. The report also included the suggestion of establishing an ad hoc administrative structure to run the whole threefold entity.

Not a single number accompanied this grand plan. Bottini himself, though more than sympathetic with the vision, made the point that crucial funding decisions had to be taken, and presented a €6.3 million budget for 2001-2003 – which did, not include the conservation of the Arsenali buildings. Bottini also sought funds from the Italian Lottery with a request of €1 million in October 2000, and asked for 32 additional staff posts for the Pisa project within the SBAT. Even as these grand plans were circulating, the needs of the project seem to have been more mundane, as in the case of Bottini's request for €25,000 to deal with the damage caused by a huge rainstorm in November. Though the project planned extensive investments, the issue of running costs seems not to have been discussed.

The "Dirty Job": Professional challenges and solutions (2001-2003)

The San Rossore project was dramatically transformed over the course of 1999 and 2000: rather than a salvage excavation of four months, the project had expanded to an unknown number of years and was organized around a visionary idea of three interconnected institutions (the museum, excavation site, and

laboratory). At the same time, the FS stopped funding the project, yet the Ministry did not assume full financial responsibility: it articulated a grand vision, but did not commit to investing in it. The huge scale and technical complexity of the finds (on many levels: engineering, conservation, archaeological information) required human, organizational, and financial resources that had not yet been identified. As a result, and paradoxically, the end of the emergency excavations led to the emergence of an even greater crisis.

Despite these challenges, Bottini and the SBAT were able to secure many positive outcomes. After delays and uncertainty throughout 2000, by early 2001 €1 million in funding had been secured from the Italian state lottery (hereafter 'Lotto'). Most importantly, the conservation threats to the exposed wood began to be managed through the work of the SBAT and a number of specialized firms. There were serious worries about Ships C & D that emerged in April. Ship F was lifted and transferred to the Teseco laboratory in July 2001, followed by ship C (the 'Alkedo') by the end of the year. Another ship (the so-called 'Barsicci') was covered with soil to protect it in October. Excavation work was suspended for a while, if we understand correctly from sources due to administrative issues and the lack of money, causing tensions with the contractors.

In October 2002, the Superintendance of Architecture requested funding for a feasibility study of the museum, part of a broader discussion about costs and funding that can be traced back to the beginning of the year. A rather bizarre document on possible alternatives for the cantiere was issued in January that presented three possible options: closing the *cantiere* to the public, only using it for visitors by appointment; stopping the excavations for 2 or 3 years; or closing the site forever. The document is interesting because it suggests that there could have been an effective discussion around these alternatives. However, after a rather opaque set of calculations (including very optimistic cost estimates) the report concludes by affirming that

it appears that with a maximum cost of slightly more than €1,000,000 in the first three years and a minimal amount thereafter, it will be possible to recover all of the ships already found, conduct additional excavations, and discover the right bank of the [ancient] river bed.

A reassuring ending that also reinforces the preferences of professionals: the best option was to proceed with excavations.

Fani, the administrative director of the Superintendance, addressed the issue of operating costs more seriously in April 2002. Based on initial assumptions of a short period of work, the cost of shoring, water pumps, and the rent on the Teseco laboratory building (to be paid after the first year) are discussed. Fani is concerned that the Ministry's proposal would create major delays, and funding problems in completing the excavation:

The proposal to constitute a Foundation that would assume the management of the future Museum of the Ships of Pisa, as the Director General has proposed, does not allow us to put off the necessary decisions [regarding funding for excavation and conservation], no matter how rapidly it is possible to realize the plan (Fani, 2002).

Rather, he suggests, activities at San Rossore should be developed under the assumptions that they will need ongoing funding from the regular budget of the Ministry.

In 2003 excavation work continued. Most of Ships A and H and the prows of P and G were excavated and lifted and taken to the Teseco laboratory by the end of 2004. The working group on the new museum met in parallel, to discuss the organizational statute and communication strategy of the new entity (Proietti, 2004). However, no budget estimations nor commitments of resources can be found in these discussions. A special commission for wet wood was established in September; the commission's November 2003 meeting noted the desirability of combining the laboratory and museum in a single visitor itinerary within the Arsenali Medicei; however it was also clear that the conservation laboratory could not be constructed at the Arsenali quickly enough to meet the immediate need to conserve the wood from the ships. The Arsenali plan was put

on hold: the new national conservation center would be located inside the temporary Teseco warehouse while the Arsenali were being renovated.

Jan 2004-Dec 2008: Instability and improvisation: digesting the discovery

By early 2004, the initial sense of discovery had faded, followed by attempts to institutionalize the project. This was hampered by unstable funding, requiring innovative management solutions. However, the excavation area and laboratory were eventually opened after overcoming obstacles related to path dependence on the concept of “threefold museum”. Major themes of this period included the construction of the Centro di Restauro next to the excavation area, major budget instability and resulting management improvisation, major academic publication efforts, and a revival of the stalled museum project.

Building the Centro di Restauro

The high rents at the TESECO warehouse, the continuing arrival of new finds, the long timelines required for conservation of wet wood, and the imminent arrival of equipment donated by ICR made a working conservation lab even more essential. The decision to abandon the Arsenali and build the Wet Wood Conservation Center (Centro di Restauro del Legno Bagnato, or CRLB) next to the *cantiere* required some logistical changes to the cantiere itself, including the abandonment of an area proposed for excavation. Once this decision was taken, the SBAT moved quickly: by January 2004 Camilli had prepared a project for excavation work, construction of the laboratory, and general management of the cantiere (Camilli, 2004). Construction of the CRLB moved rapidly: by September 2005, it was open to visitors, and was functioning by that December (Camilli, 2007, 2009), and ships C and F were moved to the new facility in early 2006 (Camilli *et al.* 2007). Between December 2005 and April 2009, the CRLB carried out conservation treatments on over 8000 artifacts.

Budget Fluctuation: Instability

Although the nature of the finds required long-term commitments to conservation, budgets for the work at San Rossore came from extraordinary funds for the entire decade of 2000-2010. €6.6 million in Lotto funding was granted to the project from 2000-2003, but applications had to be made on a yearly basis and the totals granted changed each year. The Ministry, by contrast, made no allocations to the project from its ordinary budget. The lack of a regular funding stream resulted in occasional radical budget cuts that crippled the project and threatened the destruction of the finds (see Table 3).

The first of these crises came in 2004. After a consistent Lotto funding from 2000-2003 and despite the preparation of multi-year budgets that clearly expressed needs for substantial sustained funding (Camilli, 2004), Lotto funds were reduced from €2,580,000 in 2003 to just €225,000 for 2004. In the end, an emergency allocation of leftover Lotto 2003 funds allowed the project to proceed without major disruption. Lotto funding fluctuated wildly again in 2005-2006, from €1,143,000 to €3,179,000 (and also included a new funding source, CIPE). After 2006, however, Lotto funds were reduced permanently, with allocations of only €369,000 for 2007 and €290,000 for 2008. These severe and continuous fluctuations in the budget created serious operational problems: as Superintendent Fulvia Lo Schiavo reported in 2007, such low levels of funding would completely stop the activities at both the CNP and CRLB except for basic maintenance, and harm the international partnerships and conservation projects already underway (Lo Schiavo, 2007a). In the first eleven years of operation (2000-2010), and despite its vision of the CRLB as a *national and international reference point* for the study of wet archaeological materials, the Ministry of Culture committed its own funds to the project in only one year: €600,000 in 2006.

Table3. Funding the Navi di Pisa, 2001-2011

Year	Funding Source						Total
	Lotto	CIPE 17/2003	FO cap 1321	FO Cap 7723	FO cap 7723 spec.	ARCUS	
2001	2,169,119						2,169,119
2002	1,807,599						1,807,599
2003	2,582,285						2,582,285
2004*	1,925,509						1,925,509
2005	1,143,101						1,143,101
2006	1,379,788	1,200,000	600,000				3,179,788
2007	368,640						368,640
2008	290,395						290,395
2009	129,766					964,000	1,093,766
2010	290,000						290,000
2011			210,000	200,000	2,000,000		2,410,000
	12,086,202	1,200,000	810,000	200,000	2,000,000	964,000	17,260,202

*Original Lotto allocation for 2004 was €224,829; after an emergency appeal an additional €1,700,680 was allocated from Lotto funds remaining from FY 2003

Source: relazione ispettori ragioneria.doc

Managing the Cantiere: Improvisation

This climate of budget fluctuation and uncertainty led to a slower pace of work and a series of management improvisations by SBAT staff. A 2005 description of the San Rossore complex noted:

The excavation site currently occupies an area of 10,650 m², of which 3,500 is the excavation proper at depths from 5.5 to 9.5m below the surrounding ground level. The area covered with prefabricated facilities buildings (entrance, hostel, reception and management center, etc.) is about 500m², while the field conservation laboratory and the Centro di Restauro del Legno Bagnato occupy 1700m². Next to the site, to the west, lies an area with archaeological significance of approximately 10,000m², as yet unexplored (Camilli & Setari, 2005: 81).

By 2006, 7 of the 9 mostly intact ships had been removed, though Ships B, I, and a part of A remained in the excavation area until at least 2011. The technique for removing ships – constant irrigation followed by covering with fiberglass – was by this point well-developed and allowed up to 36 months of excavation time without damage to the wet wood. The excavation technique used in this period - of uncovering a small piece then covering it with a thin layer of fiberglass and irrigating the area beneath with a small tube – allowed them to extend excavation times to more than 36 months (Camilli, 2007a).

At the end of 2004, SBAT renewed its agreement with OOPP for five years to manage *la gestione e la conduzione cantieristica del sito archeologico* including hiring outside guards and cleaning staff, and maintaining the pumps, well-points, and shoring more generally – a move that represents a sort of informal outsourcing of some site management functions (Ministry of Infrastructure, 2008). In September 2005 the Cantiere opened to the public and was receiving circa 1000 visitors per month (Camilli *et al.*, 2007), fulfilling, six years later, Bottini's vision of a 'cantiere aperto' from early 1999, but ironically coming as the excavation was nearing its end.

A guest house for visiting students and scholars was begun in 2005 and completed in 2007 (Camilli & Setari 2005:83; Camilli 2009), as part of Camilli's conscious strategy to reduce excavation to *costo zero* by inviting university researchers to work at the site. By 2007, 22 universities had participated in excavation or

conservation at San Rossore (Camilli, 2009)²²⁰ – indeed, these teams proved essential for completing any work at all in 2007 and 2008, when the total budgets dropped to €369,000 and €290,000 respectively.

The Research Machine

Despite uncertain budgets and a slower pace of work, a torrent of academic activities emerged from the San Rossore project between 2004 and 2008, including a book-length academic guide, numerous papers, several major conferences, a traveling museum exhibit, and theatrical performances at the site (Camilli, 2007b). Beyond this, the CRLB began to fulfill the role of *national reference point* for wet archaeological materials by providing consulting services to other Superintendencies and internationally. There is a surprising contrast between the instability of funding and the volume and importance of the academic materials issued in this period.

Reviving the Museum

Though the original plans to host the CRLB in the Arsenali were permanently cancelled in late 2003, the notion of a museum there did not die. The Assessor for Culture for the City of Pisa said that the city could support the project, but needed a feasibility study with definite times and costs for the whole project (Lolli Ghatti, 2003). To “overcome this impasse” in museum construction, the CaRiPi Foundation commissioned the ASK center at Bocconi University to create a feasibility study for the museum in 2004 (ASK, 2005). They propose three phases: *adjustment* (2006-2008), *anchoring* (2009-2010), and *museification* (2011-2015). A central aspect of the report is how to coordinate restoration times of the Arsenali with the needed conservation times of the ships, work that obviously needed to proceed in parallel. The ASK report suggested the *Fondazione di Partecipazione* as a governance structure, and estimated restoration costs at €12.295.000 for the buildings alone and €7.176.000 for the installation of the exhibits (ASK, 2005: 45, 68). Compare this to the 1999 estimate that foresaw total costs for completing the excavation, conservation, and museum at less than €1 million!

The report estimates running costs *a regime* for 2013 at €2.6 million, compared to estimated revenues of €500,000, an operating loss for the museum of €2.1 million/year (ASK Report p.98). Five years after the museum was first proposed, this is the first estimate of running costs in any of the project documents – and, notably, prepared by an external organization not directly connected to the project.

In February 2007 the official agreement on creating the museum was concluded between SBAT, City of Pisa, and OOPP. The SBAT had €2 million available between CIPE, Lotto 2006 and Lotto 2007; would design and install the museum and manage museum construction using staff from the SBAT; and will coordinate with the Superintendance of Architecture about the use of the building itself (Lo Schiavo, 2007b). This was followed by the preparation of an operating project (*progetto definitivo* and a *progetto esecutivo* in the Italian administrative jargon) by early 2008.

Jan 2009-20???: Managerialization and urban politics

This period saw the proposed museum subsumed into a larger urban redevelopment project led by the City of Pisa, with the introduction of managerial rhetoric and generic strategic planning tools in museum planning documents. Finally, the notion of running costs (including large forecasted operating losses) appears in project documents. The addition of an urban planning project, with its attendant bureaucratic layers, led to an explosion of administrative complexity on a formal level. However, archaeologists seem to have remained in charge of the museum project, which began substantial construction efforts in 2011 – though completing the project has remained challenging, as the museum remained a work of progress in early 2015.

²²⁰ This ‘management innovation’ represents another type of informal outsourcing by SBAT, a sort of managerial adaptation to ‘get things done’ despite funding problems.

Urban Politics Arrives at the Museum

In the period beginning in 2010 we see an increased use of managerial language in the documents produced for the 'three vertices', including strategic analyses, business plans, and management plans. In this period planning and budgeting for all three institutions were interconnected: planning for the cantiere and the museum are discussed in the same documents, and they were to share a management structure and revenues/costs. The phasing of activities at the *cantiere* were also structured according to the needs of the museum (Miccio *et al.*, 2011). However, the plans overlap and sometimes contradict one another.

As noted above, the renovation of the Arsenali and construction of the Museo delle Navi gained momentum in early 2009. A coordination agreement for the project was concluded in March of 2009 under the rubric of PIUSS [Piani Integrati di Sviluppo Urbano], a program to promote urban sustainability in Tuscany funded by European Regional Development Funds. In a sign that the project was changing, the signatories to the agreement included not only the SBAT and the City, but a total of 47 entities (mostly government bodies and foundations) that were to work together under four different coordination plans. This reflects that the scope of the project had expanded from simply constructing a museum to redeveloping the whole Arsenali complex and adjacent properties, located in a neglected and underdeveloped part of the city, and connecting the area to the city center and its millions of annual visitors (Archaeological Superintendence of Tuscany, 2007).

Continued Unpredictability at the Cantiere

Meanwhile, at the cantiere, unpredictability still stalked the *Cantiere* and CRLB. After a major redesign of the shoring system costing €330,000, the OOPP withdrew from management of the engineering aspects of site at the end of 2009, adding a new responsibility to SBAT staff (Gaddi & Puccetti, 2009). At that point the excavation had reached over 6m below the level of natural groundwater. The withdrawal of the OOPP coincided, ironically, with major rainstorms in December 2009 that caused the pumps to fail and led to major flooding of the excavation area, causing €50,000 in damage to equipment.

The next month, the *Cantiere*/CRLB complex experienced another budget crisis: against the €1,000,000 budgeted for 2010 budget, only €290,000 was allocated from Lotto funds and €0 from Arcus money (which became available later, but only in 2011). Meanwhile, delays in construction at the museum created additional costs of €120,000, in addition to the costs of coping with the flood. Given this problem, Camilli threatened to close the cantiere and stop restoration work when the 2009 funding ran out in April 2010 (Camilli, 2010). Despite efforts by Camilli and Superintendent Ragni to secure emergency funds from the Ministry for the various active projects, none seems to have been forthcoming.

Following this year of virtual standstill, in 2011 the Ministry for the first time allocated significant sums from its Ordinary Funds (that is, its normal annual budget) to the project, totalling €2,410,000 – nine times the amount provided in 2010. In this period the CRLB was working to lift Hellenistic piles and the Hellenistic ship, and working to move navi H and D into the museum.

Managerializing the Museum

The finalization of the PIUSS agreement for the redevelopment of the Citadella and Arsenali Medicei area on the north bank of the Arno, inserted the project into the urban planning and urban politics of Pisa, bringing several new features to the project. These included additional projects outside the 'tre vertici', the increasing use of managerial language in project planning documents, and a new and sometimes politicized approach to budgeting.

The first major PIUSS report, the *Executive Management Plan (Piano Esecutivo di Gestione)*, issued March 2009, proposed a dual management structure for the Citadella area, which now would include not only the Museo delle Navi, but also the Arsenali Repubblicani, Torre Guelfa, and Complesso ex Piscina Michelucci,

all located within the historic Citadel of Pisa. The report presents the project as part of a general approach to redeveloping the area of Pisa north of the Arno, noting the potential synergies involved:

Integration of the Museum of the Ships into the Citadel Area allows a series of functional, spatial, and economic synergies. In particular, one notes the possibility of creating economies of scale in the use of museum personnel, and for implementing a series of public services in the Citadel Area that – besides enhancing the enjoyment of the museum visit – could also constitute an ‘efficient’ source of revenue (City of Pisa, 2009: 8).

The museum, while central to this effort, becomes conceptually part of the City’s redevelopment plans and allows synergies that enhance the redevelopment efforts. The new project elements and management structures, of course, added additional layers of financial and administrative coordination needs to an already complex project.

The complex as a whole would have a managing director and a technical-scientific director working together with about 10 permanent staff, with outsourced services. The Piano Esecutivo, prepared by staff of the City, includes only work on the Museo delle Navi and surrounding buildings (not at San Rossore). It projects completion of all project elements by 2014, with operating costs a regime of €1,499,835 per year mostly offset by €1,312,380 per year of income from tickets, gift shops, and restaurants, for an operating loss only €187,000 (City of Pisa, 2009). This report, coming four years after the completion of the Bocconi study, is only the second time that the concept of running costs appears in project documents.

This new managerial approach to planning and budgeting also affected the SBAT, which prepared its own *Strategic Analysis and Business Plan* for the *three vertices* (excavation site, conservation laboratory, and museum in the arsenali). The document uses a series of generic strategic management tools, with chapter headings including a mission statement, resource analysis, SWOT analysis, demand analysis, analysis of competitors, and critical success factors. The budget section estimates that the three institutions will require €3.4 million in investment and have a annual operating cost of €1.61 million, of which 35% could be self-funded through consulting services (though, curiously, museum tickets are not considered as an income source) (Camilli et al., 2010). The business plan makes for peculiar reading, given that this type of managerial language had never been used before over the 10 years of the project; some of the discussions, moreover, seem strangely artificial.²²¹ It also shows a fundamentally different logic than the previous budgets of the SBAT: like the PIUSS report, the document moves beyond simple cost centers and attempts to distinguish between operating costs and investment costs over time and estimate the long term (*a regime*) costs of permanent institutions.

The PIUSS Progetto Esecutivo and the SBAT Business Plan were apparently prepared separately, without coordination. Both provide cost estimates for the Museo delle Navi, but they are organized in fundamentally different ways, with different categories, numbers, and organizational logics (Table 4). Moreover, both conflict with the estimates in the ASK Bocconi report of 2004, as well as with the 2010-2012 and 2011-2013 budgets of SBAT itself. Perhaps to deal with this situation, Salvatore Settis, chair of the Ministry’s Scientific Commission for the Navi di Pisa, convened a meeting of PIUSS participants in March 2010 to compare the economic estimates of the City with those of the ASK report of 2005. The report of the meeting notes that the ASK estimates are much less optimistic, showing a operating deficit of €2 million per year for the Museum, Cantiere, and CRLB.²²²

²²¹ E.g. what does it mean to do an ‘analysis of competitors’ when your service is a highly specialized scientific task subsidized by the public sector?

²²² Note the use of budget estimates to politically justify the project ex post facto (e.g. Pisa wants to build it, so comes up with numbers that are *cheaper*).

Table 4. Comparative Estimates of Operating Costs²²³

Cost Centers	Studio ASK, Bocconi University		City of Pisa	
	2010	2015	Start Up	Regime
costi di esercizio della struttura	€ 277,300.00	€ 508,700.00	€ 314,060.00	€ 402,220.00
Personnel	€ 969,199.00	€ 1,281,558.00	€ 668,000.00	€ 1,132,000.00
Exhibit maintenance	€ 10,000.00	€ 150,000.00	€ 0.00	€ 60,000.00
Ordinary and extraordinary maintenance, Citadel Area			€ 0.00	€ 80,000.00
Ordinary and extraordinary maintenance, Arsenali Medicei			€ 0.00	€ 80,000.00
Promotion and Marketing	€ 200,000.00	€ 100,000.00	€ 120,000.00	€ 80,000.00
General Costs	€ 50,000.00	€ 75,000.00	€ 25,000.00	€ 30,000.00
Contingencies	€ 500,000.00	€ 500,000.00	€ 50,000.00	€ 105,000.00
Total Annual Cost	€ 2,006,499.00	€ 2,615,258.00	€ 1,177,060.00	€ 1,969,220.00

ex. 03> PIUSS2010-dopo_tavolo_tecnico_CS_confronti_aggGdL

The report's appendices outline the cost estimates for the PIUSS project for 2010-2015. These costs are also much higher than previous funding for the San Rossore project, estimating €5.9-9.1 million per year in 2010-2014 and a running cost of €4.8 million in the regime phase – more than 50% more than the previous highest funding that the three-fold project had received to date and almost 20 times the lowest funding year. Strikingly, the estimated cost *a regime* for the 'three vertices' of the museum significantly exceeds the maximum allocation during the period of excavation and conservation. The notion that the excavation would have a steady funding stream only *after* its completion is particularly strange.

Building the Museum

Despite the contradictions in the various plans prepared by PIUSS and SBAT, the new money allocated to the SBAT for 2011 seems to have made it possible to proceed with substantial museum construction. A memo of January 2011 from Arch. Mario Ferretti lists the restoration work done so far at the museum, which had already reached €1 million, and included work on light and heating systems, the courtyard, entrance hall, bathrooms and ticket area (Ferretti, 2011). In 2011, a €2 million tender was prepared for the completion of the museum (Miccio *et al.*, 2011), which describes the funding needed to finish removal of the final ships from the excavation site (A and B) and restoration of the removed ships and their installation in the museum (C, D, F, H). After the project is finished it is proposed to close the excavation area permanently. In 2012 Camilli was actively seeking private sponsors for individual sections of the project, and estimated costs for individual ships.²²⁴ Throughout this period, and despite the increased role of managerial rhetoric and extensive involvement of the City of Pisa and its PIUSS partners, it appears that the SBAT archaeologists stayed in firm control of museum programming, development, and active management.

3. Discussion: professionals and bureaucracy

The long-term story the *Navi di Pisa* represents a fascinating history, incredibly complex, full of uncertainties and unstable solutions, and many stops and starts. In the end, its achievements are significant: far from the worst examples of salvage excavation, the project recovered and conserved nine mostly-complete Roman shipwrecks, fragments of 20 more, and thousands of stunning small finds, conserved them with innovative and successful techniques, and designed a museum to display them, which will (perhaps) open in 2016. Yet these successes were reached in the midst of constant organizational conflict that tells us interesting things about decision making, and helps to explain the results (or lack thereof). Examining the empirical data, far from being an 'irrelevant' adjunct to theoretical musings, presents an interesting opportunity to

²²³ Revenue estimates also differ considerably between the two documents.

²²⁴ Individual budgets included €174,765 for Ship F (the *piroque*), €384.750 for Ship A, and €487.620 for Ship C (the 'Alkedo').

investigate the logics underlying organizational action, with particular reference to ways in which professionals (archaeologists, art historians, and conservators) behave and the problems they encounter in understanding the rules, logics, and functions of the bureaucratic institutions in which they are embedded – and in which they participate.

Throughout the whole narrative, there is a striking contradiction between the grand vision of the ‘museum with three vertices’, proposed within a few days of the initial discovery, and the (in)ability of professionals to implement it within the context of the Italian public sector. Funding for even basic operations remained problematic and irregular for more than a decade, delaying the realization of the vision, and creating fundamental uncertainty about the ultimate outcome of the project. If management is an issue of addressing attention (March, 1978), in what ways is such a situation likely to address attention (or mis-address it)? To understand the issue, a closer look at the conditions of uncertainty characterizing archaeological excavations of this type may be useful prior to further discussion of the specific dynamics between professionals and the state at Pisa.

Uncertainty and bureaucratic myopia

Uncertainty is unavoidable in archaeology: by definition, preventive (or salvage) archaeology is characterized by an inability to know what will be found (and thus, how much an excavation will cost). Excavations are carried out to determine if something that deserves protection is buried in the ground; yet even if something is found, its significance is not always apparent until after substantial work has been done. Important finds tend to imply high excavation costs, but also may impose additional degrees of professional or organizational complexity, as in the case of wet organic materials that require specialized treatment.

However, though uncertainty is in itself unavoidable in these situations, its impacts can be better or worse depending on the different nature of its components. In other terms, there is an intrinsic component, which cannot be eliminated; but there is additional component of uncertainty related to the organizational context. We refer to this as “organizational uncertainty”, that is the uncertainty originating in organizational dynamics (and thus the ways in which things are done), and which increases or decreases uncertainty depending on the conducts adopted in different contexts. In our view, the enormous organizational uncertainty surrounding the *Navi di Pisa* affected the project negatively, due to a less-than-positive interaction between archaeological professionals and their own bureaucracy (the Ministry itself).

The Italian tradition in the heritage sector is characterized by a huge intervention of the State in many ways, with pros and cons. An in-depth discussion of the administrative schizophrenia of the Italian Ministry of Culture is beyond our scope here (but is examined in detail in our previous research, see Zan 2002; Zan, Bonini, & Gordon 2007; Ferri & Zan forthcoming), but a few observations can be offered. Italian regulation of heritage (“cultural goods”, as conceptualized in Italian law) is among the most rigorous and generous in the world, with a long tradition of state involvement in heritage dating back to the Renaissance, including the Medici in Florence, the Venetian Republic, and the Vatican (Settis, 2002). Indeed one could refer to a sort of long-term “administrative heritage” embedded within the current, highly centralized system. Day-to-day heritage management, for instance, is not conducted by local administrations but by the Superintendencies, local branches of the central administration of the Ministry of Culture. The State also directly manages many important museums and sites, such as Pompeii.

Here some of the major cons emerge. Heritage, all in all, is just one of many public services that the State provides. From an administrative point of view the heritage sector is structured by the same general administrative rules applied to the rest of the public sector, where the lack of differentiation (a la Lawrence & Lorsh, 1967) is one of the most common problems. It is a law-driven system, based on the Roman code tradition, where administrative lawyers play a hegemonic role in the whole apparatus (“Administrative Directors” of public sector entities are usually lawyers rather than accountants). The whole public sector is

ruled by 'one size fits all' regulations, particularly in terms of human resource management, which makes changing the composition of the labor force in individual offices extremely complicated. The public sector as a whole uses a cash accounting system, which imposes obstacles to multi-year financing and creates serious problems in planning financial resources; even creating a new spending category within ministerial ordinary funds can take over a decade. The amount of red tape is simply astonishing. In terms of routines, underspending is a generalized phenomenon in the public sector, in Italy as elsewhere. Though creative solutions are always sought in order to overcome the limitations and procedures surrounding ordinary funding (with heavy use extraordinary laws and funding, including the State Lottery), serious cuts have emerged in recent years as the Italian State attempts to reduce its deficit.

This combination of inflexibility and structural limitations gives the centralized administrative system an inability to "see" and cope with individual, non-generalizable problems, which we call "bureaucratic myopia". Any individual problem that might emerge (say, the discovery of a shipwreck within the Superintendency of Pompeii, as at Poggiomarino in 2002), must navigate the generic administrative regulations that rule the internal procedures of the public sector as a whole, before it is possible to address the intrinsic, substantive and specific needs and values of an individual discovery. This administrative incapacity persists even when the Ministry provides political support to a project and its aims.

In the context of the bureaucratic myopia that characterizes the Italian public sector in general, the professional optimism of archaeologists can create further problems. At San Rossore, archaeologists pursued their own professional values but did not foresee the likely reactions and behavior of their own bureaucratic institutions, showing a lack of "strategic" attitude (defining *strategic* here as behavior that takes others' reactions into account).

Professional Utopianism

At San Rossore professionals, and their "irreducible" optimism, made things incredibly complicated at the beginning: more complicated than necessary and much more than they (or anyone) were capable of dealing with. The visionary idea of three open, interconnected institutions became a barrier to action for a long period. Reading the project correspondence and meeting memos, it seems as if the more (or most) complicated solution was repeatedly chosen: a museum not only for the ships of San Rossore but focusing on 4000 years of Mediterranean navigation; not a temporary conservation lab to process the ships and associated finds, but a permanent international center of reference for the study of wet archaeological materials; and a museum plan that did not just focus on the Arsenali but included the redevelopment of a whole district of Pisa in partnership with 47 (!) different entities. Adding the notion that these institutions should be 'transparent' and immediately open to the public – even before the full scope of the finds or their conservation needs was understood – added yet another element of complexity that slowed progress. Rather than the Anglo-American acronym KISS (*keep it simple, stupid!*), the motto appears to have been to keep it as complicated as possible, whenever possible. Two elements in professional decision-making can be highlighted here, each of which had huge consequences: the lack of an orientation toward assessing alternatives, and the lack of a notion of internal consistency.

The lack of attention to alternatives is here strictly linked to professional choices. Excavations started over a large area, and even when the first ships were discovered, other possible ways of running archaeological excavations were not seriously debated: for instance slowing the process, focusing on only one ship at a time, or selecting methodologies for excavating, conserving, moving the ship *before* extensive excavations. Though Superintendent Cordaro suggested in 2000 that "it seems useful to suggest the creation of multiple proposals for recovery and restoration in this preliminary phase, so as to take overall effectiveness into consideration" (Istituto Centrale per il Restauro, 2000), alternatives to fast, large-scale work – such as stopping the excavations and protecting the site through reburial – a normal procedure in contemporary

archaeology – were never seriously considered. The reburial argument was used rhetorically in a couple of situations – but simply as a threat in order to get money from the Ministry. Rapid work during the emergency phase created a structure for future costs and decision-making: having exposed the ships, it became impossible to stop working. Alternative patterns in conservation, or in the idea itself of creating a permanent conservation institution, were not discussed in depth (despite the different priorities of ICR, which were successively ignored).

The lack of attention to internal consistency (or to put in other words, to logical consequences) is also at issue. It was many years before the visionary dream of the threefold museum was thought of in terms of feasibility. But early operations (and decisions about the laboratory) focused on “investments” (capital expenditure, e.g. instruments and tools that will be used for years or decades), without addressing the issue of the resources needed for running operations on a day-to-day basis. Indeed the concept of current costs first appears in 2005 for the museum (the ASK study) and 2010 (in the 2010 budget by Camilli) for the excavation and conservation lab. Estimates of the operating deficit of the museum *a regime* ranged from €1.9 to 2.6 million – nearly as much as was spent each year on the excavation in its highest-funded years – a cost which in theory, would be permanent. If such an estimate had been available in 1999, would the excavation have proceeded to invest such huge sums in a project that would require such large, continuing operating subsidies?

The lack of a notion of a flow of resources (that is, the relationship between resources and time), also characterized the original vision of the three-fold museum. That two of the components had a different natures – from an organizational point of view – compared to the core function of a museum never appears in the discussion. The *cantiere aperti*, for instance, could never have been a permanent institution, since excavations would only last for a limited period.²²⁵ The conservation laboratory was also needed for only a finite period, with nothing in the long run for the visitor to see after primary conservation of the finds from San Rossore was finished. Yet from the beginning, the plan was for three permanent institutions open to the public. While this is far from the stereotype of the ‘ivory tower’ archaeologist, heritage professionals’ naïve obsession with the project as public spectacle seems to have corrupted it in a certain sense, as they failed to consider the investments, logistics, and urban planning required to create new institutions open to visitors.

This incompatibility between vision and reality created consequences that made the life of professionals themselves harder than necessary. It took years to understand (or perhaps admit) that the time, costs, and logistics to restore the Arsenali for use as a laboratory were incompatible with the timelines of restoring the ships, and that the laboratory project needed to be thought of, and designed, under different assumptions. Ironically, when the cantiere was finally opened to the public in 2005, most of the excavation activities were finished or on hold.

Administrative naiveté: increasing organizational uncertainty

At San Rossore, professional utopianism combined with bureaucratic myopia to produce what we call *administrative naiveté*, that is an inability to forecast problems, costs, and obstacles associated with the project. The grandiose initial vision of the *museum with three vertices* created a situation of extreme path dependence that was exacerbated by the inability of the State bureaucracies to bring the project *down to earth*.

Funding patterns for the project clearly demonstrate the lack of managerial logic, which is consistent with

²²⁵ It may be that professional values themselves had a hard time conceiving of a finite period of excavation, as can be perceive between the lines: “With the exit of the State Railways from the scene, we find ourselves in charge of numerous problems, in that the excavation was initially planned for a limited period but instead has been extended following the remarkable finds [...] This development allows us to transform it into an experimental excavation.” (1999-10 Verbale gestione progetto).

overall functioning of the Italian heritage bureaucracy. For the decade 2001-2010, the whole project was funded almost exclusively with extraordinary funds from Lotto (only once, in 2006, did the Ministry grant ordinary funds to the project). Lottery funds are unstable by nature and subject to politicization, which had serious impacts on the ways in which activities could be run. This happened with respect to the operating costs of the excavation and conservation lab, which were all in all not so huge compared to the cost of opening (and running) the visionary museum that the Ministry itself also wanted to open. But the problems of the Italian public sector are knowable (and in fact known) to archaeologists, who are themselves mostly public employees; and if you know of a problem, you can avoid it, or at least try to minimize its perverse effects.

This is exactly what the archaeologists were unable to do: their own value-driven professional utopianism ended up increasing confusion, rather than helping to find an effective solution that could support their operating (professional) needs in day-to-day activities. This was true both with reference to the three-fold museum (what could have been done earlier and more effectively in terms of conservation, if the obsession with the Arsenali as a conservation lab had never emerged?), but also with reference to initial professional choices (the decision to excavate over a large area and uncover numerous ships in the early period substantially predetermined the structure of costs for the following decade). Professional optimism, linked with an inability (or unwillingness) to understand their own organizational, institutional and bureaucratic context caused troubles, costs, and risks, adding huge doses of organizational uncertainty to the unavoidable uncertainties of rescue excavation.

The uncertainty was evident early in the project: as Bottini observed at the time “[L]o scavo era iniziato per 6 mesi e invece lo gestiremo per chissà quanto” (Bottini, 1999c). As another observer put it, “In sum, the *Navi di Pisa* have represented, and continue to represent, a paragon of all the principle and complex problems that can arise [...] for those who are required to care for our archaeological heritage as part of their institutional duties” (Archaeological Superintendence of Tuscany, 2007).

Learning to KISS

In one way or another, it seems that professionals (and particularly professionals inside the SBAT) learned their lessons. In fact, as soon as the institutional and organizational confusion declined, things began to “get done”. The “optimistic” and beautiful plan for hybrid, public laboratory-museum in the Arsenali, placed the conservation facilities in a four-year period of limbo, but once the initial plan was abandoned it took less than 2 years to build the new structure and get to work. Conservation work, moreover, seems to have done efficiently and effectively, with 8000 artifacts treated in 4 years and huge research achievements throughout the process. In terms of museum construction, things also seemed to move swiftly once structural decisions were made: the PIUSS agreement was signed in March 2009, major work had already been completed by the end of 2010, and the museum is partially constructed (though we are skeptical about its proposed opening in 2016). Moreover, the managerial approach of PIUSS and the City of Pisa began to include realistic estimates of investments and running costs, allowing projection of costs into the future – generating much-delayed political controversy over the operating subsidies required.

When things are kept simpler, professional optimism was able to play a much more positive role: archaeological managers could pursue clever survival practices vis-à-vis a less than responsive bureaucracy to achieve their professional goals, such as informally outsourcing maintenance of the site to another government agency and research to a consortium of universities, “a costo zero”. But despite these relative successes, we cannot resist comparing the *Navi di Pisa* to an archaeological find of similar magnitude in Luoyang, China, where excavation and conservation were completed, and a museum opened to the public, within *18 months* of the initial discovery – rather than 18 years (Zan & Bonini Baraldi, 2012).

Though the turn toward *modern* managerial rhetoric approach in project documents after 2010 is reassuring in some ways, some doubts remain about its efficacy: for instance when the SBAT's 2010 business plan undertakes a bizarre "competitor analysis" for the CRLB's wet wood restoration services; or the manipulation of cost and revenue estimates within the PIUSS project to make the museum project more politically appealing. Furthermore, the actual meanings associated with the museum constantly changed over time, without making the underlying assumptions explicit (for instance, to what extent the exhibitions within the Arsenali Medicei will coincide with Settis' 2000 idea of a general museum of Mediterranean navigation, rather than just of the San Rossore ships, is still unclear to us). The agenda of the "Settis commission", which affirmed and developed Bottini's 1999 proposal for three interconnected museums, created a situation of 'professional optimism' against which the archaeologists of the SBAT constantly had to struggle. The City of Pisa also attempted to change the agenda of the project by subsuming it into overall urban planning projects; however the City's insistence that the State fund the museum project seems to have allowed professionals within the SBAT to substantially control the process of museum development (City of Pisa, 2009: 2-3).

Conclusion

In reconstructing the 15-year history of the Navi di Pisa, this paper has addressed the critical role played by professional values. In particular, we tried to understand how intrinsic uncertainty was increased by organizational uncertainty linked to professional decision-making. In particular, we focused on how professional optimism and administrative naiveté, are two indispensable elements that help make sense of the whole story. A few concluding remarks are possible here.

Unlike many other countries, what makes administrative naiveté by professionals possible in the Italian context is the lack of a robust managerial culture within the central administration (in this case, the Ministry of Culture). In a different administrative tradition with different operating procedures, a project vision that was unable to foresee its own prohibitive costs – and thus in itself infeasible – would not have been allowed to play such a major role for such a long period. In a sense, a lack of "accountization" (Power, 1997) seems to characterize the debate on management of arts organizations in Italy compared, for instance, to the UK, with a corresponding inability to forecast and manage costs.

Second, a syndrome of making things complex – a love of complexity in itself – seems to be a constant in the story. In the absence of an administrative culture that was able to bring projects *down to earth*, the universalist and utopian tendencies of professional discourse emerged strongly as a tendency to choose the *best* project rather than the most feasible one. This is exactly the contrary of a management approach, where the idea itself of *one best way* is criticized in favor of a more articulated view which tends to define a range of possible solutions or alternatives, that better fit with the individual situation.

Third, traditionally, archaeologists are criticized for their hyper-academic approaches and insufficient attention to visitor experience, often referred to as an "inward looking" attitude (for a critique see Zan 2000; Lusiani & Zan 2010). At San Rossore, however, it was quite the contrary: they seem to have been too visitor-oriented at too early a date. From the month of discovery, they wanted to open a museum, excavation site, and conservation laboratory to the public, an obsession that ultimately created obstacles to effectively accomplishing their core professional tasks. Whether this form of *utopianism* came from managerial rhetoric, new museology, or postmodern archaeology and its obsession with community involvement (or a mixture of the three) a different set of priorities – or placing priorities in a more logical time order – would have had greater effectiveness on excavation and conservation. Core professional values seem here to have been corrupted by theoretical trends in social archaeology.

The process of writing this case study, in itself, poses an interesting question. Despite full access to the SBAT archives, we found no excavation diaries and no synthetic reports summarizing project activities:

rather, we had to laboriously reconstruct events based on hundreds of primary documents stored in an unsystematic way. Why was it that we were forced to write this article to understand the project, rather than having access to a systematic report that a transparent, effective and “modern” managerial organization should produce for its own purposes?

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References

- ARCHAEOLOGICAL SUPERINTENDENCE OF TUSCANY (2007) *Dossier museo e parco archeologico delle navi antiche di Pisa*. Report on file, Archaeological Superintendence of Tuscany.
- ASK – LABORATORY FOR ECONOMICS AND MANAGEMENT OF ARTISTIC AND CULTURAL INSTITUTIONS AND INITIATIVES (2005). *Progetto di musealizzazione delle navi romane rinvenute negli scavi di San Rossore, Pisa*. Milan: Bocconi University.
- BOTTINI, A. (1999a). *Pisa San Rossore – Ritrovamento di navi romane. Letter from SBAT to Ministry of Culture, January 18, 1999*. On file Archaeological Superintendence of Tuscany.
- BOTTINI, A. (1999b). *Piano di spesa – Anno 1999 – Proposta di variazione. Letter from SBAT to Ministry of Culture, March 17, 1999*. On file, Archaeological Superintendence of Tuscany.
- BOTTINI, A. (1999c). *Minutes of meeting between representatives of the Archaeological Superintendence of Tuscany and the Central Institute for Conservation, October 20, 1999*. On file, Archaeological Superintendence of Tuscany.
- BOTTINI, A. (2000). *Letter to Ministry of Culture accounting office detailing the accounting situation and expected spending at San Rossore as of May 29, 2000*. On file, Archaeological Superintendence of Tuscany.
- BOZÓKI-ERNYEY, K. (2007). *European preventive archaeology. Papers of the EPAC Meeting, Vilnius 2004*. Budapest: Hungarian National Office of Cultural Heritage.
- CAMILLI, A. (2007a) L'esperienza delle navi antiche di Pisa: attività e programmi futuri. In Gravina, F. (ed.), *Comunicare la memoria del Mediterraneo. Strumenti, esperienze e progetti di valorizzazione del patrimonio culturale marittimo. Atto del Convegno Internazionale organizzato dalla Regione Toscana nell'ambito del progetto europeo Antiche rotte marittime del Mediterraneo (ANSER). Pisa, 29-30 October 2004* (pp. 217-224). Naples: Centre Jean Bérard/Centre Camille Jullian.
- CAMILLI, A. (2007b). Pisa: cantiere delle navi antiche e centro di restauro del legno bagnato. Resoconto delle attività 2007-2008. *Notiziario della Soprintendenza per I Beni Archeologici della Toscana*, 3/2007, 285-292.
- CAMILLI, A. (2009). *Funding application for Project ARCUS, April 2009*. On file, Archaeological Superintendence of Tuscany.
- CAMILLI, A. (2010) *Appunto sui finanziamenti 2010 per i navi di Pisa. Email to M. Ragni, March 19, 2010*. On file, Archaeological Superintendence of Tuscany.
- CAMILLI, A. (2012) *Sponsorship budgets for ship conservation and museum installation*. On file, Archaeological Superintendence of Tuscany.
- CAMILLI, A., CESA BIANCHI, A.; FANI, A. (2010) *Business plan for the Cantiere delle navi antiche di Pisa, Centro di restauro del legno bagnato, and Museo delle navi antichi di Pisa*. On file, Archaeological Superintendence of Tuscany.
- CAMILLI, A.; DE LAURENZI, A.; MILETI, M.C.; REMOTTI, E.; SETARI, E. (2007). Diario di bordo. *Archeo*, 23 (10), 58-67.

- CAMILLI, A.; SETARI, E. (eds.) (2005) *Le navi antiche di Pisa. Guida archaeologica*. Milano: Electa.
- CAMILLI, A. 2004. *Pisa – San Rossore. Cantiere delle navi romane. Progettazione sulla base del finanziamento aggiuntivo 2003, e programmazione triennale 2004-2006, proposta di ripartizione del finanziamento. Letter from A. Camilli to Superintendent A. Bottini, January 22, 2004*. On file, Archaeological Superintendence of Tuscany.
- CITY OF PISA. (2009) *Piano esecutivo di gestione – progetto di recupero di aree per servizi al pubblico del museo delle navi*. Report on file, Archaeological Superintendence of Tuscany.
- DEMOULE, J-P. (2012) Rescue archaeology: A European view. *Annual Review of Anthropology*, 41, 611-626.
- FANI, A. (2002) *Il project financing nel settore dei beni culturali: una proposta di progetto*. Internal memorandum on file, Archaeological Superintendence of Tuscany.
- FERRETTI, M. (2011) *Memorandum on projected costs and budget for museum construction at the Arsenali Medicei, 31 January 2011*. On file, Archaeological Superintendence of Tuscany.
- FERRI, P.; ZAN, L. Forthcoming. Ten years after. The rise and fall of managerial autonomy in Pompeii. Accepted for publication in *Critical Perspectives on Accounting*.
- GADDI, S.; PUCETTI, R. (2009) *Relazione tecnica descrittiva degli interventi straordinari per la messa in sicurezza del palancolato*. Technical Memorandum on file, Archaeological Superintendence of Tuscany.
- GARLICH, M. (2011) *The concept of strategic fit*. Hamburg: Diplomica Verlag.
- GRUENING, G. (2001) Origin and theoretical basis of NPM. *International Public Management Journal*, 4 (1): 1-25.
- HOOD, C. (1991) A public management for all seasons? *Public Administration*, 69, 3-19.
- HOOD, C. (1995) Emerging issues in public administration. *Public Administration*, 73 (1): 165-183.
- HOOD, C.; DIXON, R. (2015) What we have to show for 30 years of New Public Management: higher costs, more complaints. *Governance*. DOI: 10.1111/gove.12150.
- HOPWOOD, A. G. (1987). The archaeology of accounting systems. *Accounting, Organizations and Society*, 12, 207-234.
- ISTITUTO CENTRALE PER IL RESTAURO (2000) *Navi romane di Pisa S. Rossore. Stato di conservazione e progetto di recupero conservativo. Letter from ICR to Archaeological Superintendence of Tuscany, February 17, 2000*. On file, Archaeological Superintendence of Tuscany.
- LAWRENCE, P.; LORSCH, J. (1967) *Organization and environment*. Boston: Harvard Business School.
- LO SCHIAVO, F. (2007a) *Cantiere delle navi antiche di Pisa e centro di restauro del legno bagnato: Finanziamenti Lotto 2007-2009. Letter to Ministry of Culture March 20, 2007*. On file, Archaeological Superintendence of Tuscany.
- LO SCHIAVO, F. (2007b) *Memorandum on agreement for the creation of the Museum of Ancient Ships of Pisa, 22 February 2007*. On file, Archaeological Superintendence of Tuscany.
- LOLLI GHETTI, M. (2003) *Minutes of meeting on the progress of excavations at San Rossore, April 11, 2003*. On file, Archaeological Superintendence of Tuscany.
- LUSIANI, M.; ZAN, L. (2010). Institutional transformation and managerialism in cultural heritage: Heritage Malta. *Museum Management and Curatorship*, 25 (2), 147-165.
- LUSIANI, M.; ZAN, L. (2011) Change and continuity in managerialism: 100 years of administrative history at the International Museum of Ceramics in Faenza. *Management and Organization History*, 6 (1): 59-80.
- MARCH, J. G. (1978) Bounded rationality, ambiguity, and the engineering of choice. *The Bell Journal of Economics*, 9: 587–608.
- MICCIO, G.; CAMILLI, A.; MOLLICA, E. (2011) *Progetto preliminare per il completamento scavi per il Museo delle Navi Antiche a Pisa e allestimento Museo*. On file, Archaeological Superintendence of Tuscany.

- MINISTRY OF INFRASTRUCTURE (2008) *Agreement between the Interregional Department of Public Works for Tuscany and Umbria, and the Archaeological Superintendence of Tuscany for work at the excavation site of the 'Roman ships', 25 February 2008*. On file, Archaeological Superintendence of Tuscany.
- MINTZBERG, H. (1978) Patterns in strategy formation. *Management Science* 24 (9), 934–948.
- MINTZBERG, H. (1994) *The rise and fall of strategic planning*. New York: The Free Press.
- NORMANN, R. (1977) *Management for growth*. Chichester: John Wiley and Sons.
- PETTIGREW, A. (1985) *The awakening giant: Continuity and change in ICI*. Oxford: Basil Blackwell.
- PETTIGREW, A. (ed) (1987) *The management of strategic change*. Oxford: Basil Blackwell.
- PFEFFER, J. (2009) Renaissance and renewal in management studies: Relevance regained. *European Management Review*, 6 (3), 141–148.
- POWER, M. (1997) *The audit society: Rituals of verification*. Oxford: Oxford University Press.
- QUINN, J.B. (1980) *Strategy for change: Logical instrumentalism*. Homewood, IL: Irwin.
- SETTIS, S. (2002) *Italia S.P.A. L'assalto al patrimonio culturale*. Turin: Einaudi.
- VENKATRAMAN, N.; CAMILLUS J. C. (1984) Exploring the Concept of Fit in Strategic Management. *Academy of Management Review*, 3, 513–525.
- VON KROGH, G., ROSSI-LAMASTRA, C.; HAEFLIGER, S. (2012) Phenomenon-based research in management and organisation science: When is it rigorous and does it matter?" *Long Range Planning* 45 (4), 277–298.
- WEICK, K.E. (1976) Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, 21, 1-19.
- WEICK, K.E. (1977) Enactment process in organizations. In Staw, B.M.; Salancik, G.B. (eds.) *New directions in organizational behavior*. Chicago: St. Clair Press.
- ZAN, L. (2000) Management and the British Museum. *Museum Management and Curatorship*, 18 (3), 221-270.
- ZAN, L. (2002) Renewing Pompeii, year zero. Promises and expectations from new approaches to museum management and accountability. *Critical Perspectives on Accounting*, 13 (1), 89–137.
- ZAN, L. (2013) Economic discourse and heritage conservation. Towards an ethnography of administrations. *Heritage & Society*, 6 (2), 167–184
- ZAN, L., BONINI BARALDI, S.; GORDON, C. (2007) Cultural heritage between centralisation and decentralisation: Insights from the Italian context. *International Journal of Cultural Policy*, 2007, 13 (1), 49-70.
- ZAN, L.; BONINI BARALDI, S. (2012) Managing cultural heritage in China. A view from the outside. *The China Quarterly*, 210, 456-481.