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Culture and Local Development: Maximising the Impact

Trento and the Science Museum of Trento, Italy
Report on the Self-Assessment Guide for Local
Governments, Communities, and Museums

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EXECUTIVE SUMMARY

This study presents the results of a self-assessment exercise focused on the strategies of the Trento Science Museum MUSE to impact on local development, and on the related supporting action of the local government, the Autonomous Province of Trento, Italy. MUSE is not just one museum, but a net of the seven scientific education centres in Trentino. Apart from the science museum in Trento, which re-opened in 2013 in an iconic building designed by “archistar” Renzo Piano and is by far the most important attractor, the net comprises an aeronautics museum (Museo dell’Aeronautica Gianni Carproni), a botanical garden and an astronomic observatory (Giardino Botanico Alpino and Terrazza delle Stelle), a geological museum (Museo Geologico delle Dolomiti), a museum hosting pre-historic remains of a pile-dwelling site (Museo delle Palafitte del Lago di Ledro) and a limnologic research station (Stazione limnologica del lago di Tovel). The self-assessment exercise took place in 2018 and covers the museum’s actions in that year and in the years immediately preceding it, a time in which MUSE has had an average budget of about 16 million euro and about 250 employees.

Conducted using a guide designed by the Organisation for Economic Cooperation and Development (OECD), the self-assessment considers local development from different perspectives, namely:

1. Economic development and innovation
2. Urban design and community development
3. Cultural development, education, and creativity
4. Inclusion, health, and well-being
5. Managing museums for local development

Interviews with qualified representatives of the museum and of the local government were conducted using a predefined grid of questions; the answers have then been translated from qualitative information into a quantitative scale. A validation through unstructured interviews to local stakeholders was part of the exercise. This report has been compiled using also information coming from financial documents and other written material provided by the museum as a complement to the interviews.

The collected evidence testifies that MUSE is very committed to local development in all its dimensions, and in order to have a great impact its management is actively involved in various networks of actors, both public and private, sharing similar aims.

Looking in detail at the different dimensions of local development here considered:

1. Various strategies are adopted by MUSE aiming to contribute to the local economic development and make Trentino more innovative. It is not just a commitment to development, but to *sustainable* development, with special reference to the natural environment. In this respect, a best practice is the

museum's dialogue with the local agricultural sector to increase awareness on biodiversity issues. As for the relationship with other economic industries, MUSE is well integrated in the area's well-developed tourism sector, and is also a service provider for Trentino Guest Card, a very successful destination card offering free and discounted admissions to almost all local attractions. Finally, MUSE's Fablab, the only one in the province, is the place where the museums' strategies for increasing the number of innovative enterprises at the local level take place.

2. MUSE science museum in Trento represents an exceptional element of success of a vast urban regeneration plan. MUSE takes also part in committees for the regeneration of non-urban contexts, such as Mount Bondone, Trento's alp, a destination in need of a relaunch where MUSE is present with two of its research centres. MUSE science museum in Trento effectively uses outer spaces to outreach and engage the community. Community development is a goal MUSE wishes to reach through countless initiatives, many of which are also relevant for cultural development and inclusion, revealing one of MUSE's typical modes of action: choose a strategy only if it serves multiple purposes. MUSE's activism in international co-operation, particularly with a project on sustainability in Tanzania's rainforest, also tries to contribute to Trento community's self-definition as an altruistic and open society.
3. MUSE seems to be truly committed to organise visits as experiences, and to quality edutainment. Its strategies in the educational dimension are particularly focused on families, (also those with very young children) and schools. Outreaching is eased by the presence of the smaller museums/research centres of the network, which are often located in rural areas, but also by the gardens and greenhouses surrounding MUSE's science museum in Trento. MUSE is also committed to educational projects where the top-bottom approach to knowledge transfer is challenged through initiatives like citizen science and responsible research and innovation (RRI) projects.
4. MUSE is not involved in actions having a therapeutic effect on its visitors. However, one of its most innovative spaces, the Maxi Ooh section dedicated to children aged 0-5 and focused on senses, is (also) conceived as a space that contributes to early age prevention of mental problems. MUSE's commitment in the social inclusion dimension is focused on disability and NEETs, with the collaboration of local social co-operatives. There is a challenging project in which mentally disabled people and people with serious physical disabilities (spastics) are involved as "accompanying guides" for groups of non-disabled. NEETS work in the museums' greenhouses, and soon will be managing a branch of MUSE's museum shop.
5. All in all, MUSE appears as a well-managed organisation, where conservation is cared for appropriately, information circulates effectively, strategies are formulated and coherent actions are subsequently taken, the work of volunteers is welcomed. In the short run, the main challenges pertain to the management of staff, because there are a large number of workers who do not have a proper contract. The critical point is that they are mainly employed in the education unit, one of the core departments of a museum. In perspective, a second challenge is to make the budget a more effective tool supporting all strategies fostering local development. A re-classification of expenditure is needed to avoid the risk of a

budget allocation that is unbalanced in favour of revenue-generating activities, which are not necessarily those having the highest impact.

The recognition of the role of museums, and of MUSE in particular, as actors fostering local development is present in many official documents of the local government, the Autonomous Province of Trento. Opened in 2013, the new science museum is itself a proof of the fact that the local government believes in investment in culture; the financial figures prove that the commitment is strong. The provincial government has also avoided one of the typical mistakes of Italian local governments: to follow an incoherent strategy by which an important investment to create or renovate a cultural institution is made, but then there is no adequate financial support to it in the follow-up. In recent times the financial relationship between MUSE and the local government, who contributes for about 55% of the budget on average, has improved because a three-year budget has become compulsory for all levels of government and their agencies. This has meant disclosure on future grants levels and therefore easier programming for the museum.

MUSE enjoys an institutional status of great autonomy vis-à-vis the provincial government, which enhances its effectiveness in contributing to local development. It also takes advantage of the fact that most statistics on the local context are available online, because there is an open data policy implemented at the local level. Even more important, in *all* its domains of action the provincial government has a rather strong commitment, in financial terms, to a multidimensional notion of local development. This is made possible by the fact that being Trentino an autonomous province, it can retain about 9/10 of the local revenues. The public actors as well as the subsidised private actors involved are many, and this allows MUSE to work in team with partners.

Multiple partners are an opportunity but may also be problematic at times. Improving the coordination of action between the different branches (departments, agencies) of the local government vis-à-vis the museum is desirable. At the moment some lack of communication is evident, perhaps originated also by different visions on the role of the museum and its future expressed by the different branches. MUSE has better relationships with some departments and some agencies, while some attrition is present with others.

A recent provincial law reforming the governance of culture in Trentino has also pros and cons. While it defines in more detailed terms the goals the provincial governments assigns to cultural institutions, enlarging them so as to comprehend also innovation, social cohesion and wellbeing, it also prescribes a transfer of museums' employees to the provincial government, a serious limitation to provincial museums' autonomy. This part of the law has not found application, yet.

1. INTRODUCTION

MUSE is the name of a net of the seven scientific education centres in Trentino, an Italian province set in the Alps, close to the border between Italy and Austria. It includes the Science Museum in Trento, the capital city of Trentino. In what follows a brief overview of the local context and of MUSE's history and characteristics will be presented. A paragraph follows illustrating the methodology used in this research project to evaluate MUSE's actions in the different impact domains and to evaluate the local government in its supporting role.

1.1. Context: history, politico-institutional framework, economy, cultural policy.

Since the Middle Ages Trentino, the Southern part of the historical region Tyrol, has gravitated in the sphere of influence of the Habsburg empire, of which it was formally part from the Congress of Vienna till the end of World War 1. It was then annexed to Italy. After the Fascist era and World War 2, the new Italian Constitution granted Trentino the status of an autonomous province due to the presence of German and Ladin linguistic minorities. This means that, unlike in (most of) the rest of Italy, most powers there are exerted by the local government, the Autonomous Province of Trento. In the course of time, there has been a constant redefinition (enlargement) of competences attributed to the provincial government, as a consequence of the bargaining between provincial and central government. Nowadays the role of central government is minimal (administration of justice and public order). Apart from the provincial government, who is responsible for health, schools, public transport and transport infrastructure, support to the local economy and culture, the only other relevant level of government is the municipal one. Trentino has little less than 176 municipalities, among which the cities of Trento (about 118 000 inhabitants) and Rovereto; most of the other municipalities have less than 1 500 inhabitants, so the total population of the province is about 530 000. Trentino's Northern border is with a province of similar size and population, Alto Adige, with which it shares a common historical background and the autonomous status, while Veneto (Venice) and Lombardy (Milan) are the two densely populated regions sharing with Trentino the East- and West-Southern border.

Economically speaking, Trentino is the third province in Italy in terms of per capita GDP and second for employment rate (ISTAT, 2017). In 2017 agriculture produced 3,2% of Trentino's added value, industry 23,4% while the rest was imputed to services, among which a major role is played by tourism (ISPAT records 4 290 000 arrivals in hotels and similar accommodation facilities in 2017) and by government, dominated by the local levels (about 37 600 employees in 2013: ISPAT, 2014). Most of the territory is rocks and woods; the agricultural sector exploits the lower lands and focuses on the production of fruits (apples, wine). There is a prevalence of small sized land properties, and farmers are gathered in large co-operatives. Co-operatives are also important in the local financial sector and GDO. Industry sees no specialisation in a single production, and the prevalence of small and medium-sized firms, with few exceptions. The tourism industry

mainly lives on natural attractions, with a winter season dominated by winter sports, attracting a large number of foreign guests, and a summer season in which lakes (Garda) play a big role alongside the mountain destinations (Dolomites).

Trento is Trentino's capital and by far the largest town. It always ranks in the top 5 Italian cities for quality of life in Sole 24 Ore's ranking (5th in 2017), which comprises a large number of indicators proxying private finances and consumption; employment and innovation; environment and public services; demography and society characteristics; crime and justice; culture and leisure. Since ever, public policy has had a strong commitment to keep a balance between centre and periphery, with a special focus on mountainous villages, where people can enjoy quality public services no matter the strength of their tourism vocation.

Primary public expenditure by local governments was on average 8 664 euro between 2012 and 2014 (Bank of Italy, 2016). The province can retain about 90% of the revenues (except municipal taxes) collected locally and spends it both directly and indirectly through transfers to the municipalities. Public support to the economy has been important since the 60ies, a time in which Trentino still had a rather underdeveloped economy: it ranked 67th among the 92 Italian provinces in 1951. Land development was the result of a mix of external factors - increasing external demand for tourism and quality agricultural products, development of the road and rail Brenner axis - and generally well-oriented local policies, favored by the considerable financial resources guaranteed by autonomy. Nowadays the provincial government is particularly committed to fostering innovation through ad hoc industrial policies and through rich grants to the local research institutions.

As far as culture is concerned, the provincial government is by far the most important spending institution (about 63% of total expenditure) followed by municipalities. Provincial cultural spending was about 138 per capita in 2016. The spending sub-category heritage and museums amounted to about 18.7 million euro in the same year (Rapporto Annuale sulle Attività Culturali, 2017).

1.2. MUSE: history, institutional status, audience

In its actual institutional form, Trento's MUSE was born in 2011. A Trentino Natural Science Museum had been operating since 1964 as a public institution, and a provincial law (law n. 15, 2007) had prescribed its transformation into a Science Museum, "a cultural centre focused on natural history and mountain landscape, science and innovation"; yet the regulation making that prescription concrete only appeared in 2011 (decree n. 4-62). This regulation was the new museum's statute. The grand opening of MUSE – this was the name chosen for the new institution - took place on July 27th, 2013. The collections of the old natural science museums were re-located in an iconic and environmentally-friendly building designed by *archistar* Renzo Piano, one of the attractions of a brand new city quarter, not far from the city centre, born on an ex industrial area that had been dismissed since the 80ies. The permanent collection was enriched and re-proposed within a narrative path focused on ecology and sustainability.

MUSE is actually not just one museum, but a net of the seven scientific education centres of Trentino. In fact, as early as in the Nineties the provincial government had devised a unified management for them in order to obtain scale and scope economies. Apart from Trento Science Museum and a small aeronautics museum located in the town's outskirts (Museo dell'Areonautica Gianni Carproni), the net also includes a botanical garden and

an astronomic observatory (Giardino Botanico Alpino and Terrazza delle Stelle) in Bondone, Trento's mountain, a geological museum in the East Dolomites (Geological Museum of the Dolomites), a museum hosting pre-historic remains of a pile-dwelling site near lake Garda (Museo delle Palafitte del Lago di Ledro) and a limnologic research station in the West Dolomites (Stazione limnologica del lago di Tovel).

From an institutional point of view, MUSE is one of the four (nets of) provincial museums; these are the major museum institutions in Trentino, being the other local museums much smaller institutions and visitor attractors. Provincial museums enjoy a quite autonomous status within the provincial government, as they are defined as separate "functional entities", a legal definition close to the notion of an agency. Muse's statute assigns great powers to the director, while the provincial government is called to play a role as a stakeholder and supervisor mainly through an appointed council board that must approve the museum's plans and the financial documents (yearly and three-year budget) accompanying it as well as the balance sheet. The board also nominates the director every five years.

MUSE had a budget of about 16 million euro in 2016. On the revenues' side, the Province of Trento contributed directly with about 8.5 million euro, while the rest of the costs are mainly covered by ticketing (about 13% of the whole of the budget), ticketing for educational activities (6%), European research grants and contracts for scientific counselling (9%), museum shop revenues (6%), royalties and rents (4%) and sponsorships (2%). Looking at figures in perspective, the current transfers from the provincial government were stable at around 5.6 million euro till 2012; there was a great increase in 2013-14, the first two years of the new science museum in Trento and then a return to lower values, as the museum started having much greater own revenues.

In 2017 the number of people working for MUSE was 254, out of which 219 having a contract directly with the museum (35 were long-term unemployed having a contract with publicly subsidized social co-operatives). Out of 219, 125 were collaborators no having a long- or medium-term contract: most of these started in 2013, when the new science museum opened and it was not clear how much of its great success in terms of audience would survive the first year after the launch. The average age of the people working at MUSE is 37 and 86% of them have a degree.

As for MUSE's outcome, MUSE recorded 612 171 visitors in 2016, out of which 515 210 were visitors of the Trento science museum (the second strongest attractor of the net is Museo delle Palafitte, 39 597 visitors, and the third Museo Gianni Caproni, 33 445 visitors in 2016). It was the 12th most visited museum (net) in Italy in 2016 according to *Il Giornale dell'Arte* (the Italian edition of *The Arts Newspaper*). After the opening of the new science museum in Trento a big increase in visitors' numbers was expected, which in fact was the case; the figures have stayed rather stable in the following years, also thanks to many repeat visitors. For many tourists and excursionists MUSE science museum has become the major motivation for a visit to the city of Trento, especially for schools coming from the nearby regions. On a not so positive note, foreign visitors are not many (6% in 2016).

Visitors' satisfaction can roughly be proxied by MUSE's Tripadvisor score, which, for MUSE science museum, is 4, 5 out of 5 (4 586 reviews, October 2018); Museo Caproni's score is also 4, 5 and Museo delle Palafitte 4. MUSE science museum ranked tenth in the Tripadvisor's 2016 Traveller's Choice Museums for Italy. Additionally, for MUSE science museum one can make reference to the score reported in *Il Giornale dell'Arte*. This score values the quality of a number of features (building, accessibility, visibility,

lightning, attendants, bookshop, lifts, cafeteria and toilets) assessed by a mystery guest specialised in museum reviews. According to *Il Giornale dell'Arte*, MUSE ranks among the top 4 of the more than 100 Italian museums reviewed since 2009, with a score of 9.6/10.

Output also consists of research, which may have an impact on local development independently of exhibition. MUSE has a rich production of research work and a large number of contracts for monitoring and studying natural sites. In the research area long-term collaborations with several Italian universities make it possible for PhD students and other young researchers to work on their projects at MUSE science museum. These are not counted as employees or collaborators, but this is in fact a virtuous form of outsourcing of the environment monitoring tasks the museum pursues. These collaborations also contribute to the great number of publications seeing MUSE researchers as authors or co-authors: 60 on ISI journals in 2016, while the papers presented at conferences were 67.

1.3. Research project and methodology.

This research project took place in 2018. Its focus is the assessment of the impact of MUSE's actions on local development, and of the support of the local government (the provincial government) to the museum's strategy. Local development is considered from different perspectives. In particular, following the OECD Guide: "Culture and Local Development: Maximising the impact", five dimensions are here considered:

- Economic development and innovation
- Urban design and community development
- Cultural development, education and creativeness
- Inclusion, health and wellbeing
- Managing museums for local development

The methodology of this research project mainly relies on a guided self-assessment exercise. Interviews with qualified representatives of the museum and of the local government were conducted using a predefined set of questions. A validation through unstructured interviews to local stakeholders was part of the exercise.

The project had a double goal:

1. To verify if MUSE's strategy is oriented toward local development, and, to some degree, how effective it is in this respect;
2. To validate the self-assessment tool, i.e. the grid of questions used in the structured interviews. This work is in fact part of a wider OECD project, the first phase of which consists in refining a method for the evaluation of cultural institutions.

Only the evidence relative to the first goal is here reported.

The structured interviews were conducted with Michele Lanzinger, director of MUSE, and with Claudio Martinelli, head of the Culture Department of the Province of Trento.

The list of the unstructured interviews is the following:

1. MUSE science museum staff:

- Mr David Tombolato and Marco Fellin, Fablab
 - Mrs Samuela Caliarì, Education Unit
 - Mrs Alberta Giovannini, Non-cultural Services Unit (including corporate membership)
 - Mr Paolo Pedrini, Research Unit
2. Interviews with local stakeholders:
- Mr Eccel, Fondazione Mach (partner in research and research communication projects)
 - Mr Marco Dalla Torre, president of the social cooperative Progetto 92 (social inclusion projects)
 - Mrs Chiara Zecchetto, Dolomiti Energia (corporate membership partner)
 - Prof. Alessandro Rossi, University of Trento (collaboration on innovation projects)
 - Mr Andrea Navarini, manager of a local firm involved in a project carried out by MUSE's Fablab
3. Local stakeholders not indicated by the museum:
- A manager of a local small ITC company
 - A teacher of a secondary school in Trento.

Public intervention is pervasive in Trentino; the provincial government is represented in the different policy domains by different branches and agencies. In particular, culture and education are covered by dedicated departments; tourism is mostly the domain of action of a company, Trentino Marketing, the main shareholder of which is Trentino Sviluppo, an agency focused on economic development to which most competences on industrial and innovation policy is outsourced; health is the domain of action of ASSP, another public agency, while APPA is the provincial agency for the environment. Research and higher education is outsourced to the University of Trento, provincialized in 2011, and two foundations, Fondazione Bruno Kessler and Fondazione Mach, which, though separate entities, are mostly funded by the province. Often public agencies and institutions create companies or consortia among themselves: it is the case of Trentino Sviluppo, the University of Trento and the two foundations, who have recently created HIT, Trentino Innovation Hub, whose aim is to ease the transition from research to research application.

The richness of this scenario made tracking all actions of the local government in support of MUSE's strategy for local development particularly difficult, also because the different department and agencies sometimes do not seem to communicate much with each other. The interview to Mr Martinelli had to be complemented with unstructured interviews to other representatives of the provincial government, part of different departments/agencies, the list of which is the following:

1. Other representatives of public government
 - Mr Paolo Nascivera and Mr Paolo Maccagnan, Trentino Marketing
 - Mrs Milena Bigatto and Mr Andrea Guarise, HIT (Trentino Innovation Hub)

The interviews were complemented by a visit as a mystery guest and the examination of several financial documents and publications, the list of which is in the references. MUSE is very strong in communication, both of its cultural supply (marketing campaigns) and of its achievements, which has been of great help for this research project.

2. THE FIVE DIMENSIONS OF LOCAL DEVELOPMENT

2.1. Economic development and innovation

MUSE's director and staff adopt various strategies aiming to contribute to the local economic development and make Trentino more innovative. There is a high degree of awareness as to the role a science museum may play in these two domains. As far as the former is concerned, it is not just a commitment to development, but to *sustainable* development, with special reference to the natural environment.

The strategies within this dimension may be categorised into three groups:

- Strategies focused on the museum's contribution to the local tourism sector;
- Strategies aiming to induce the agricultural sector to reflect on sustainability;
- Strategies adopted by the museum's Fablab.

The following three subsections cover these three domains of actions separately, and all of them include the corresponding role played by the local government.

2.1.1. Tourism

MUSE is a well-integrated attraction within an area, Trentino, with a strong tourism vocation (4.6 million tourist arrivals in 2016, excluding second homes). The management monitors tourism data constantly, both those referring to the city of Trento and those relative to Trentino in general; these are made available online by the provincial government twice a year, 3-4 months after the end of the winter and summer season. The museum is systematically involved in the round tables organised by the networks focused on the development of Trentino's tourism, comprising both public and private partners (hospitality industry associations, single hotel owners). MUSE takes decisions about its offer (timetables, types of guided visits, auxiliary services) having the desires and needs of tourists and excursionists in mind.

Excursionists constitute an especially important segment of audience for Trento's MUSE, because it is the destination of a very large number of one-day school trips from Trentino's neighbouring regions. As for tourists, Trento's science museum has managed to become, since the re-opening in 2013, a must-do for most tourists visiting the town; for many, even the main motivation for a visit. As for the tourists staying outside town,¹ MUSE is often both the local museum (MUSE's peripheral branches) and the iconic museum in the nearby town, well worth a visit on a rainy day or on the way back home.² In this respect, MUSE's integration in the destination card called Trentino Guest Card,

¹ These are large majority, as Trentino is mainly a mountain and lakes destination.

² This is especially true for tourists coming from other Italian regions. Foreigners account for 6% of MUSE's visitors, while foreign tourists account for about 36% of all Trentino's visitors in 2016 statistics.

which allows for a free visit, has been very important: in 2016, 9% of all admissions were Trentino Guest Card admissions.³

A detailed account of the Trentino Guest Card project, a best practice in tourism destination management, is available in the Appendix. In this Appendix, the different financial arrangements MUSE has signed within that project in the course of time are also presented. The attention MUSE pays to the financial consequences of its integration into TGC testifies MUSE's clear awareness that in the relationship between tourism and culture, cultural institutions must get no less than what is due, taking account of all positive externalities. In this respect, the museum is also attentive to all private initiatives. A restaurant that had launched a MUSE special menu without involving the museum was invited to join a co-marketing campaign, or the museum would sue it.

MUSE benefits from a good governance structure of the tourism sector at the local level, a context in which the public and the private components interact fruitfully. Trentino is an autonomous region and all administrative powers with respect to tourism are delegated to the local (provincial) level of government, who has set up a public company, named Trentino Marketing, to design and implement most tourism policies. The region is divided into different tourist areas, each having their own local tourist board (Azienda di Promozione Turistica, APT hereafter). APTs are public-private institutions in which (most of) the local tourist entrepreneurs are involved both as contributors and as decision-makers: the share of affiliated hotel-owners is above 90% in all tourist areas. Trentino Marketing acts as an umbrella with respect to the local APTs as to the promotion of quality standards, tourist product clubs and common marketing strategies both in Italy and abroad.

One of the most successful recent actions Trentino Marketing has promoted is the creation of Trentino Guest Card, the destination card comprising more than 200 free or discounted activities around Trentino, among which all most important natural and cultural attractions (see Appendix). Another famous initiative is The Sounds of the Dolomites, a program of readings and open air classic, jazz and world music concerts taking place in high mountain contexts during the summer. Most local tourist boards, coordinated by Trentino Marketing, are involved in the Sounds of the Dolomites. In 2018 MUSE will be involved in this project, too: its guides will accompany groups of participants to the concerts' venues explaining the peculiarities of the natural surroundings.

A portion of Trentino, the Dolomites, are part of a UNESCO-listed natural site. A foundation has been set up to coordinate all preservation and cultural dissemination actions regarding the site; the foundation involves all local stakeholders. An interesting project, called New Tale, started in 2017 as a collaboration between the UNESCO

³ TGC is not the only destination card MUSE is integrated into, though by far it is the most important one. While TGC covers 17 out of 20 Trentino tourist areas, Muse is committed to cover the whole of Trentino with marketing actions. Paganella and val di Fassa, have not joined the TGC project. MUSE has set up in this case a direct relationship with the local tourist board in order for both local destination cards (*Andalo Card*, *Val di Fassa Card*) to include a discount at MUSE. *Museum Pass* is a card comprising free entry to a number of museums and castles and free public transport tailored mostly to meet the demand of *local* museum visitors. The tourist boards of the two main cities of Trentino, Trento and Rovereto, were the leading actors in the creation of this project in 2012. The average number of museum cards sold is modest: around 1 600 in the last three years. Museum Pass holders can visit MUSE for free, and have priority access in case of queues.

Dolomites Foundation, Trentino Marketing and MUSE. The beneficiaries of this action are hotel-owners and their staff, who are given courses on a new narrative about the Dolomites. The idea is that they will then use it in the communication with their guests to make them more aware of the uniqueness of this natural environment. MUSE's research line on landscape is here of particular relevance, being landscape both a natural and cultural notion that captures well the interaction between nature and man's intervention, a feature shaping Trentino's identity also in touristic terms.

There are personal good relationships between MUSE's director and Trentino Marketing general manager, which is testified also by the fact that on numerous occasions they travel together to the most important travel and tourism market events around Europe and Italy. Instead, there is a not so collaborative relationship within the provincial government, in particular between Trentino Marketing and the culture department. Between the two agencies communication is scarce, which sometimes makes networking difficult.

2.1.2. Communicating sustainable development to the agricultural sector.

MUSE's research team is particularly focused on ecology. Biodiversity and sustainability at the local level are the main concerns; this implies collecting data, creating integrated databases, constant monitoring and elaboration of interpretations and recommendations. All this translates into scientific articles, often published on prestigious international scientific journals. But the pure research agenda goes hand in hand with a cultural dissemination agenda, though the two are managed by different museum units. Par. 3 will deal with MUSE's commitment to convey sustainability goals to its visitors; here we will focus on its efforts to establish relationships with the agricultural sector so as to condition their choices in matters such as use of pesticides, dung disposal and, more generally, the vision on how their business should evolve.

The idea here is that preservation should no longer be seen as a matter concerning only natural reserves. Most of the environment is man-made or man-modified, and this has been so for centuries. The question is whether equilibrium can be found between economic and ecologic sustainability, considering that also a cultivated field can be the home of a lot of spontaneous botanical species and of wild fauna.

Some of Trentino's valleys are characterised by intensive farming; Trentino's most famous products are apples and wine, but also breeding is widespread. In general, producers are very small businesses, but most of them are gathered in a small number of large cooperatives who are big players at the national level on the respective markets. Not only do cooperatives act as marketing agencies, but they also strictly monitor product quality, which means they dictate all farming strategies in detail to their members. This makes them the ideal interface between MUSE and farmers.

MUSE's staff highlights that the dialogue with the fruit producers is positive: it is not green-washing what their cooperatives look for in collaborating with MUSE, but an update on best practices. The situation is more problematic with breeders, who resist suggestions on how to make their business less harmful for biodiversity. They also strongly oppose the presence of wild carnivore mammals, some of which have been re-introduced (bear) and some of which (wolf) have reappeared again after more than a century. Muse co-ordinates research, preservation and communication projects involving various Alpine regions from different countries focused on these mammals, and it is especially committed to set the record straight on the dangers their presence entails – dangers that breeders' associations and some political parties highly exaggerate.

In dealing with the agricultural sector, MUSE is not alone. Its actions are part of a general strategy by the environment department of the provincial government. The provincial government has always favored farmers through subsidisation, believing this would keep the mountains inhabited and alive, and local politics is tightly connected to the cooperative movement. This favors the agricultural sector's responsiveness to MUSE's initiative.

MUSE has also started researching on the consequences of ski slopes management on the environment. Ski slopes are crucial for winter tourism, but the more and more common use of artificial snow means collection of water at high altitudes, altering the ecosystem. MUSE's staff is starting a relationship with the companies managing ski areas, having in mind the relationship with farmers as a model to follow.

2.1.3. MUSE's Fablab

Trento's MUSE hosts a Fablab, and its contribution to the increase of innovative enterprises at the local level mainly consists of actions taking place in it. FabLabs (digital fabrication laboratories) are set up to inspire people and entrepreneurs to turn their ideas into new products and prototypes by giving them access to a range of advanced digital manufacturing technology (3D printers, laser cutters...). MUSE's Fablab is the only one in Trentino, and it is at the head of a net of Fablabs in nine countries of central Europe (Interreg Central Europe Fablabnet), the activities of which are also financed by the EU regional development fund (2.7 million euro for the period 2016-2018). MUSE's Fablab is also highly interconnected with other initiatives promoting innovation at the local level set up by the local government and the local university (of which more at the end of this sub-paragraph).

MUSE's Fablab is located among the exhibits of the museum. This has pros and cons. Clearly, the laboratory cannot operate fully, for security reasons, while the museum is open for visitors. On the other hand, the location creates interest and curiosity for the Fablab among the audience – this means reaching very large numbers.⁴ Some spot events, such as Arduino Days and Hackathons, draw further attention on the infrastructure.

The Fablab has its own website and, within the Fablabnet initiative, launches calls for coaching programmes directed at students, would-be entrepreneurs and start-up companies. There have been three actions so far.

Pilot 1 action, called Digital Transformation Camp, was for students of informatics and saw the involvement of local entrepreneurs mainly as tellers of case studies. These were searched for by MUSE staff actively among local firms, often traditional ones; four were selected and two finally accepted being involved.⁵ The idea was to produce benefits both for students and for entrepreneurs. The former were asked to imagine innovative products and processes considering all the concrete constraints the technicalities of real production impose, the latter were often exposed to the very idea of innovation through digitalisation for the first time. Network creation, especially with the tutors, was an extra bonus for all.

⁴ Visitors can actually work in the Fablab on Sundays on very simple projects, under the supervision of tutors. Upon request, simple workshops are organised for schools, too.

⁵ One produces honey, the other high quality copper pans.

Pilot 2 action, called Fablab2 industry, is an ongoing initiative directed at would-be start-uppers, who, during a 2-month training course, can use the Fablab to concretize and refine their innovative hardware products, meet experts in prototyping and learn from financial consultants specialised in venture capital (two specialised consulting firms from a more industrialised neighbouring region have been involved to deliver these last two training modules). The call had a national resonance and four business ideas have been selected, corresponding to four groups of innovators variously composed of PhD students, young businessmen, even members of the museum staff in one case. The business ideas, which we report here to illustrate more concretely what MUSE's Fablab deals with, are the following: an automated system for managing vertical gardens, a portable lab for genetic analyses, a modular electronic kit for composing edutainment instruments and a monitoring system for air quality using low cost sensors and shared online information. The participants to Fablab2industry will compete for visibility: some of them will go on a tour in some of the other Fablabs of the central European net with their business ideas.

Pilot 3 action, called MakermeetArtisan, has just started and is focused on local small artisan enterprises, a world particularly resistant to innovation. Here, too, MUSE shows its entire proactive attitude: it goes and search for entrepreneurs to involve. The idea here is that even if the action will not have consequences as real as new products, at least it will increase small local firms' awareness of the necessity to innovate to compete successfully.

Fablab is run by both permanent staff and external consultants: probably the best choice considering that the profile of a tutor requires a constant contamination with industry. It mostly relies on European funds for its actions, but the future is uncertain, because the European programme ends in 2018. Ideally, public subsidisation should be complemented by a financial commitment by the local chamber of commerce, industry and artisan associations, as they are the direct beneficiaries of the specialised services and networking the Fablab offers (almost) for free.

One limitation of the Fablab's actions so far has been the involvement of a limited number of participants, but this is more the consequence of a poor response of the context than the lack of commitment by MUSE. Yet this is a serious problem: it is common knowledge that successful start-ups are a very small percentage of all innovative business ideas. The small numbers are also imputable to the fact that this is a completely new initiative, especially at the local level. It is important that the incubated business ideas, even when coming from non-local start-uppers, will find locally a favourable environment in which to locate and grow.

MUSE's Fablab does not operate in a vacuum. Innovation policy is a topic the provincial government has taken seriously since long, with a far-sighted vision rare to be found in Italy. The province finances generously the main research centres of the region: University of Trento, FBK Foundation (mainly ITC and new materials) and E. Mach Foundation (agriculture, food, environment), as well as an agency, Trentino Sviluppo, which is the local government branch for industrial policy. Recently these four organisations have joined forces and created a company, called HIT (Hub Innovazione Trentino) to empower their capacity to transform research products into business ideas. HIT actually has a triple mission: foster common projects, ease patentability and connection to firms, education to innovation. Of particular relevance within the last mission is the role of University of Trento's Contamination Lab, a multidisciplinary didactic initiative centred on problem solving and team networking. Though focused on University of Trento's students, the Contamination Lab, which, after winning a

competition, has recently been granted a 300 000 euro subsidy by the Italian Ministry of Education,⁶ is open to all actions centred on education to innovation. HIT is then the frame within which MUSE's Fablab and the Contamination Lab meet and arrange collaborations in which each contributes to the partner's own initiatives.⁷ This makes sense, as University of Trento has no own Fablab, but it has a prototyping laboratory, and the two infrastructures are clearly complementary.

The provincial government is also active in promoting Trentino as an attractive location for innovative firms. It has invested in the infrastructure of a mechatronic pole in Rovereto, and it is committed to ease the relocation or start of new, innovative companies by reducing to the minimum firm's bureaucratic burden in terms of regulatory compliance, a very relevant issue in the Italian context.

The commitment of the provincial government to innovation is great, but given provincial museums' great autonomy in determining their strategies, the interviewed provincial government representative considers some of the actions proposed by the OECD Guide not respectful of the current institutional arrangements regulating the relationship between the two actors. A more direct involvement of the province of Trento in the operations of its museums is envisaged in law 15, 2017, reforming those arrangements. However, some argue this direct involvement will be for good, because recent empirical evidence show that museums are more effective when they enjoy some degree of autonomy.

2.2. Urban design and community development

In 2013, Trento's natural science museum moved from a XVII palace in Trento's town centre, which was not very suitable for conservation and exhibition, to an iconic building in a new quarter, Le Albere, built on a large ex-industrial site. This innovative urban regeneration project involved both public and private capital and was commissioned to the workshop of architect Renzo Piano, who conceived a brilliant reconversion from brownfields to greenfield and designed all buildings (300 apartments, 27 000 sq. mt. of offices and shops, the science museum itself and a conference centre later turned into a university library) following the principles of eco-sustainability. The result is an impressive new skyline and one of the best parks in town, yet the project has not been as successful as expected: most apartments and many shops and offices are still unsold. This is due to a number of factors, two of which are the strong effects of the 2008 recession on the real estate market and the lack of some basic infrastructure (schools, parking places).⁸ Most of all, the new quarter was conceived as consisting only of up-market apartments while there was not sufficient demand for them. Within this problematic context, MUSE's boom since its opening as "the new MUSE" represents an exceptional element of success of the initiative, and an opportunity to draw constant attention on the urban regeneration project itself, even in marketing terms.

⁶ This subsidy has been granted for the Lab's next 3 years' activity.

⁷ These collaborations are often regulated by a contract.

⁸ The quarter is next to the town centre, but divided by it by the railways. In the original Trento's new urban plan the railways, which cut the town in two, would be transformed into subway railways. Lack of funds made this project unfeasible. This makes Le Albere only apparently close to the main facilities and services.

Tripadvisor reviews reveal that the iconic building and the brilliant inner organisation of spaces are among the museum's best liked features. MUSE director collaborated actively with Renzo Piano Building Workshop in the planning phase, and so the building is both a piece of stylish architecture and the answer to the many demands of the museum institution. Some of these were actually the community's demands: in fact, MUSE organised a survey on the desired features of the new museum, involving a large number of locals. For instance, the extension of the area dedicated to activities targeted to very young children came as a consequence of the consideration of the community's needs in this respect (see also par. 3). The bottom-up approach in the planning phase has probably contributed to the success of the new MUSE.

Paradoxically, the quality of MUSE's building and its location within a stylish urban quarter are among the causes of MUSE's most important problem: congestion. The museum was expecting a yearly average audience of about 200 000, while its success was such that the actual figure is more than double: this generates undesired overcrowding effects. High demand does not refer just to visitors. MUSE's iconic building has generated a strong demand of meeting and conference rooms to rent by private firms and other local institutions, but spaces of this kind within the premises are not as many and as large as needed.

One option MUSE has exploited to overcome some of these problems is the expansion outside its built premises. The large green just outside the museum was originally conceived as an Italian garden, but it was soon clear a lawn was more suitable for the organisation of events and for the resting needs of visitors; it now hosts also some of MUSE's mechanics toys. The outer spaces have been exploited also as an opportunity for outreach and for social inclusion projects: the reference is here, in particular, to MUSE's vegetable gardens and greenhouses (of which more in par. 4), which also host laboratories for schools. As typical in MUSE's philosophy: two birds with a stone, many projects co-exist involving the vegetable gardens, some of which are meant to make them financially sustainable. They are the focal point of a 3-year partnership with Ricola Italia, the national branch of a Swiss producer of natural herbs candies. In 2018 the project, which includes co-marketing campaigns as well as a contest for schools focused on biodiversity, was awarded a prestigious national award, Premio Cultura+Impresa 2017-18.⁹ Ricola and MUSE have extended their collaboration also to the Botanical Gardens at Viote, on Trento's Alp Mount Bondone. A path dedicated to healing plants and herbs was set up, an initiative in which Ricola did not just play the role of a sponsor but collaborated actively.

Mount Bondone, part of Trento's municipality, is a mountain resort suffering competition with nearby destinations. In fact, these have developed their facilities and infrastructure more recently, and are therefore perceived as more attractive. The relaunch of Mount Bondone is one of the municipal government's goals, and special funds and programming skills have been allocated to this project. As MUSE is present on Mount Bondone with its botanical gardens and an astronomic observatory, its director has been actively involved in the committee for this regeneration plan. This reveals that MUSE, as a network of museums scattered on the territory, is fully aware of the relevance of its role also in regenerations of non-urban contexts. It also reveals the generally good relationships with

⁹ The awarding committee, set up by a well-known non-profit institution, Federculture, identifies every year a best practice in sponsorships and partnerships between cultural institutions and firms.

Trento's municipal government, which is not the government of reference for MUSE, a museum part of the provincial administration, but rules over an area in which four of its sites (the science museum, Museo Caproni, the Botanical Garden and the astronomic observatory) are located. However, the new MUSE's plans to expand its premises further finds some resistance on the municipal as well as the provincial government (of which more at the end of this section).

Being part of urban regeneration plans makes even more sense for a museum if associated with a commitment to community development. MUSE sees itself as a catalyst of creativity and of reflection upon common values within the local community. Dissemination of an attitude favouring creative thinking and innovation is mainly obtained through the strategies of MUSE's Fablab (par. 1). Its educational approach favouring co-creation of experience and learning (think of projects of citizens' science and of responsible research and innovation, of which more in par. 3) and its social inclusion programmes (covered by par. 4) contribute to the development of social capital. The very contents of MUSE's education programmes, especially those on environmental sustainability (par. 1 and 3), contribute to make the local community aware of the problems and challenges of today's world, with reference both to the local and the global context.

There are two more aspects of MUSE's commitment to community development that are worth analysing here. The first has to do with building confidence and fighting insecurity at the social level. In this era of fake news and strong power of the social media, people are often reached by alarming and confounding pieces of information. Are vaccine dangerous? Are wolves a threat for the Alpine communities? There is often also a manipulation of these themes by some politicians. A natural science museum is the perfect institution to set the record straight on a large number of issues, and MUSE plays this role not just at the local level, but at the national one – the national press often refers to its research programmes and exhibitions on hot themes.

A second aspect of MUSE's commitment to community development revolves around its project in Tanzania. In 2006 MUSE and TANAPA, Tanzania National Parks, set up a collaboration for monitoring of the ecosystem of Mounts Udzungwa. In the course of time this collaboration has more and more included community development goals. The project is co-financed by the Natural History Museum of Denmark. One of the recent actions also involves a local for-profit partner, Dolomiti Energia, with a co-marketing strategy. Every year this multi-utility company will donate MUSE 10 euro for every TanzaMIA contract signed with its customers. With this money MUSE will buy new, efficient ovens for Tanzanian families. In fact, one of the problems in Tanzania is the destruction of large parts of the rainforest by the locals, who need wood to cook. MUSE's commitment in Tanzania is not to be intended only as a commitment to the communities living there, near the national park, but also as a commitment in shaping its visitors' awareness that sustainable development needs global action. A large greenhouse hosting plants coming from Mounts Udzungwa is part of the exhibition itinerary in the new MUSE. MUSE's activism in international co-operation also tries to contribute to Trento community's self-definition as an altruistic and open society.

When one comes to analyse the role of the provincial government within the urban design and community development dimension, the two must be kept distinct. As for urban regeneration, the provincial government has been deeply involved, in different ways, in

the project called Le Albere, of which MUSE is part.¹⁰ It all started as an innovative public-private partnership. However, the partial failure of the profit-making part of that project, which looms over the parties involved and has had negative repercussions on the local economy, highlights that something went wrong. Some have argued that the role of politics both in the early days and later, when the negative results showed up and the local authorities eased the situation taking a number of measures, has not always been crystal-clear, and that the project was flawed by gentrification purposes from the very beginning. It is not the scope of this work to judge the whole of this urban regeneration plan and its implementation, and the public responsibilities in the actual problems. As a general lesson to learn, it is important to highlight is that when real estate projects are ambitious they may indeed go wrong, especially if not preceded by sound analysis of the local demand.

The new MUSE stands out as the real added value of the regeneration plan for the city. But MUSE is the victim of its own success: its premises are too small for the number of visitors it attracts. In the beginning, many thought these numbers were just the frenzy of the moment – everyone had to go and have a look at the new museum. Instead, the audience has never decreased since 2013, the year the new MUSE opened. The municipal government has made the nearby green space available, and this has made things less critical. Yet this, in MUSE director's view, is not enough. He calls for more space for his institution. There are three possible extensions of premises he considers: the nearby Palazzo delle Albere, an underused Renaissance villa belonging to the provincial government; a house now in ruins, close to the nearby railways, belonging to the municipal government, where the Fablab could be relocated; and a brand-new astronomic observatory on (part of the) lawn in front of the museum. While the latter plan may find future realisation, the first two find the resistance of the governments owning the premises. In particular, the use of Palazzo delle Albere is one of the main topics causing attrition between MUSE and the provincial government, and in particular its culture department. Clearly, the government has invested a lot in MUSE and is reluctant to invest more, given the shrinking resources the provincial government manages after the rearrangement of its financial relationship with the national government. Moreover, there is competition for investment among the different provincial museums.

A second important element causing attrition is the project, supported by the culture department within the provincial administration, to take Museo Caproni out of the MUSE network and assign it to Fondazione Museo Storico, a provincial cultural institution focusing on local history. This small museum hosts a collection of old airplanes produced by a local firm at the beginning of the XIX century; it is far away from the new MUSE and has had about 33 000 visitors in 2016. It clearly needs a relaunch, but MUSE seems to be interested more in investing in new premises for the new MUSE. A private donation has allowed the provincial government to buy Caproni's firm archive, and the idea is to change the nature of the museum, making it more a place where visitors can learn a piece of local history. MUSE resists this plan, which would decrease the number of visitors to MUSE's network of museums.

As for the role of the local authorities in favouring MUSE in its commitment for innovation and social cohesion, the provincial government has included in its recent law

¹⁰ The same is true for the municipal government. The mayor of Trento at the time the project started later became the president of the province.

reforming the governance of cultural institutions (law no.15, 2017) references to the two themes. It is recognised that they have to be intended as goals for cultural institutions. At the moment, the museum enjoys an institutional arrangement by which the provincial government is not authorised to go into the detail of how it reaches those goals. Provincial museums are autonomous, i.e. they are the agenda setters in cultural programming, while their council boards, representing the link between public authority and their management, approve it. This setup, which makes decision-making close to the real needs of the community as perceived by the very providers of cultural services, is common to many public museums in Italy and has been proved to make museums more effective than other institutional arrangements by the literature. However, the very law no.15, not yet implemented in all its parts, seems to point to a new model in which provincial museums will be made less autonomous. MUSE's director sees in this a threat on MUSE's future, also as far as its commitment to innovation and enhancement of social cohesion are concerned.

2.3. Cultural development, education and creativeness

MUSE management and staff consider cultural dissemination in two different ways:

- As a goal in itself, a core mission of the museum
- As instrumental to achieve environmental sustainability.

As for the first dimension, the idea, in the director's words, is not to convey single pieces of information, but to induce in the audience the development of an attitude characterised by curiosity and awareness of the need of a scientific approach towards a number of issues. He rejects the idea that online virtual tours of the museums are good for learning because he believes the visitor should not go and search for confirmation of the information he has obtained during the visit. Instead, she should ideally look for further information elsewhere, to use other respected sources of knowledge. A visit should be conceived as a nudge, and what follows should be a process of creative self-education.

As for the role of the museum as an education agency in matters related to sustainability, increasing local audience's awareness is functional to induce them to change their behaviours, in view to make them compatible with a long-term equilibrium with the natural environment. This is particularly relevant in the Alps, a context in which anthropisation coexists with a fragile ecosystem and where climate changes add new problematic aspects to the relation between economic activities and biodiversity. It is interesting to notice that MUSE pursues this goal not just through actions targeted to their visitors, but also through the establishment of relationships with various trade associations, especially within the agricultural sector (par. 1).

MUSE's commitment to education in sustainability matters directly stems from its history as a natural science museum. However, MUSE's ambition is to shape its identity as a science museum tout court, so its educational activities also cover topics such as health and lifestyles (of which more in par. 4) and the new technologies (of which more in par. 1).

As it is obvious for a museum, in order to reach its educational goals the main strategy MUSE adopts consists of a commitment to quality visits to its collections and exhibitions. Trento's MUSE had around 515 000 visitors in 2016; 612 000 is the number if also the visitors of MUSE's peripheral branches are counted. This makes MUSE the most visited science museum in Italy, and among the most visited Italian museums of all types:

according to the Arts Newspaper it ranked eleventh in 2016. Its educational goals are not restricted to the local visitors, which are a small minority (20% in 2016) for reasons related both to Trentino's tourism vocation and demography (Trentino has a much smaller population than the regions on its southern border).

Visitors' satisfaction is roughly captured by Tripadvisor score, which, in October 2108, was 4,5 (4 586 reviews).¹¹ MUSE ranked tenth in the Tripadvisor's 2016 Traveller's Choice Museums for Italy. Children-friendliness, the iconic architectural structure, inner and outer spaces are among the most cited positive aspects of the museum. Many Tripadvisor reviewers mention that they are very satisfied with what they have learned.

A second proxy for quality is the score of *Il Giornale dell'Arte* (the Italian edition of *The Arts Newspaper*), This score values the quality of a number of features (building, accessibility, visibility, lightning, attendants, bookshop, lifts, cafeteria and toilets) assessed by a mystery guest specialised in museum reviews; MUSE is among the top 4 of the more than 100 Italian museums reviewed since 2009 with a score of 9.6 out of 10.

MUSE's strategies aimed at increasing its visitors include the organisation of events which can be categorized as *edutainment* ("Mystery dinners" is just one of the latest formats) and attempts to use new languages, such as contemporary art, to communicate science. Most of all, it relies on the connection with other educational organisations. In Italy museums have recently been recognised as institutions where teachers' training can take place, and accordingly MUSE has set up a variety of courses, summer schools etc., both in Trento and in some of its peripheral venues. MUSE also offers training courses focused on educational services to other museum institutions. There is also a connection with the local University of the Third Age; one of the proposed activities in this case is a citizens' science project focused on bird watching.

An interesting project, connecting educational and social inclusion goals, is the one involving disabled people as complementary guides at Trento's MUSE on Sundays (of which more on par. 4). Also high school students are allowed to help in cultural dissemination tasks while on job training (*Alternanza Scuola-Lavoro*, of which more in par. 5). Since these choose to allocate their time for job training at MUSE, they can be considered as volunteers; the same can be said for youth in their civil service.

Exhibiting the permanent collection and offering temporary exhibitions is just one of the ways MUSE adopts to foster cultural development. The museum has taken advantage of the recent move to the new, much larger and better organised building to create spaces other than those dedicated to permanent and temporary exhibitions. Besides laboratories, especially dedicated to school and groups, MUSE has children's informal education spaces. One is *Maxi Oh*, dedicated to very small children (of which more in par. 4). The other is the *Discovery Room*, conceived for slightly older children (5-10 years old). It is a room where the playful coexists with the instructive; a space in which the immersive gallery "Explore the wood" lies beside chests of drawers full of replica of exhibits (animals, plants, bones) children can observe and manipulate; where interactive technological tools as well as soft toys are present. A mediator is present in the week ends to facilitate the experience.

¹¹ This refers just to MUSE science museum. A sensible comparison is the one with Milan's Science Museum, because the type of audience is similar (large majority of national visitors) and in spite of some important differences in the two museums' size and age (these differences probably offset each other). Milan's Science Museum has 2 015 reviews, and its score is 4,5.

Outreaching with educational projects is a goal MUSE mainly obtains through its gardens (see par. 2) and through its being at the head of a net of local natural and archaeological museums, as these are tightly connected to natural or cultural landmarks set in the local environment. Of particular relevance is the commitment of the museum in Ledro, which focuses on the local remains of bronze age stilt houses, to performances recreating the life of their pre-historic inhabitants.¹² The show “Living Prehistory” has not just been performed in situ, but it was also on tour around Italy and also in Austria. In other educational activities at the Ledro museum the very visitors can be part of a theatrical representation, and they can mould clay, create objects etc. Predazzo’s geological museum organises guided hikes for locals and tourists to explore the area and capture its unique geological features. Also the role of MUSE in the Provincial Ecological Net (of which more lately in the paragraph) is often an occasion for the museum to reach the residents of remote villages and establish a relation with them. Finally, there are single actions that MUSE organises on a regular basis as well as occasionally and that can be considered part of its outreaching strategy. For example, on the World Biodiversity Day (21th May, 2017) MUSE organised a Bioblitz at Lamar Lake (part of the Provincial Ecological Net): 24 hours dedicated to mapping the biodiversity of the site with the involvement of the local community. Around 100 participants could learn a mapping method, use technological devices (such as bat-detectors) and validate the information posted online before passing it to the GBIF (Global Biodiversity Information Facility) database.

MUSE is also committed to educational projects where the top-bottom approach to the transmission of knowledge is challenged. These initiatives pertain to the following dissemination domains:

- citizen science
- responsible research and innovation (RRI)

Here, too, MUSE conforms to the recent worldwide trends in scientific education. In the case of citizen science, however, it is a vocation MUSE inherits from a distant past. Since its very beginning the museum has, in fact, a symbiotic relationship with Trentino’s Society of Natural Sciences, composed of amateur scientists. The challenge is, however, to reach the new generations. The multi-year project “The School of Ants”, by which young students monitor the population of ants in their schoolyards and report their findings to a national online database, has seen 16 classes involved in the 2016-2017 schoolyear, both in Trentino and in three neighbouring provinces. The project, started as the initiative of researchers from the University of North Carolina, sees University of Parma as the main scientific partner, while MUSE’s education department is the referent for the didactic aspects, such as the creation of the “Ant’s Box”, a small case including all the material necessary for a class to be part of the project. The project aims to spread all around Italy.

RRI prescribes that the gap be eliminated between those who produce, enjoy the products of, and regulate scientific research. NANO2ALL is an example of a RRI action MUSE has promoted. It is part of a EU project (NANO2ALL – Societal engagement on responsible nano-technology, 2015-18) financed by Horizon 2020 and involving eleven countries. Panels have been created in Trento’s MUSE made up by scientists, private firm

¹² The site is part of the UNESCO serial site “Pre-historic Pile Dwellings around the Alps”.

managers, ONGs, journalists and simple citizens, to discuss all implications of nanotechnologies. From the point of view of citizens, NANO2ALL has not just been an occasion to learn the technicalities of a specific research branch, but, more generally, a way to increase their trust in the scientific method and in scientists and to reveal that they are interested also in the ethical implications of their discoveries. RRI is also important for scientists, making them aware of the importance of bidirectional dialogue with society.

MUSE seems to be fully aware of the importance of recording and elaborating its audience's feedbacks. These are not just used as an ex post validation of their action. Surveys have been often proposed to potential visitors about their expectations, needs and feelings. These have been particularly important at the time when the new MUSE building was conceived and realised. Temporary exhibitions benefit from a preview from a random sample of visitors, whose feedback is taken into account to possibly modify some features of the project. Surveys are proposed also to the participants of the various activities the museum organises.¹³

A complete review of MUSE's activities pertaining to the cultural dissemination domain cannot but highlight also some potentially problematic aspects. Among the unsatisfied Tripadvisor's reviewers there are some (in fact, not many: 4,6%) that judge the offer as poor.¹⁴ It has to be admitted that MUSE's collection in itself is not unique; the museum tries to overcome this shortcoming by offering a convincing narrative combining its pieces. This narrative walks the fine line between education and entertainment. The vast majority of visitors appreciate the proposed narrative; those complaining would prefer more a systematic, so to say "classic" approach. Perhaps at times there is also a problem with the quality of guided visits. The staff of MUSE's educational services are mainly employees, yet some tasks are outsourced, such as the "Ask me" services in the area where visitors can experiment mechanics by using physics "toys". The externalisation of some educational services appears as a potentially problematic issue. Particularly in a science museum, in fact, competence is a fundamental element to induce a sense of trust in the institution, hence in science. Sometimes training external staff may not be enough, as their only temporary association with the museum may mean a weaker motivation and identification with the institution.

Finally, is MUSE an innovator in cultural dissemination? The first Bioblitz took place in Washington in 1996. The first Discovery Room was opened in 1974 at the Smithsonian National Museum of Natural History (Washington), followed by many others around the world. MUSE does not often seem to innovate, but MUSE's management seems to be aware of the best practices around the world, has a desire to import them in Italy (often as first timers) and to adapt them in the local context. Some initiatives, however, do appear as truly innovative: it is the case of the Maxi Oh project. MUSE also takes part, in collaboration with other local institutions committed to cultural dissemination, to a project financed by the local provincial government focused on innovation in methodologies for informal education.

¹³ Besides feedbacks collected through surveys, online reviews are most relevant, as they also play a crucial role as a marketing tool. MUSE's policy is not to reply Tripadvisor reviews. However, it seems it takes account of them: more attention to pet owners' needs seems to derive from complaints in this respect.

¹⁴ However, the most cited element allegedly causing dissatisfaction is, by far, the queue at the entrance

In accomplishing its cultural development mission at the local level MUSE greatly benefits from a favourable institutional framework set up by three different provincial government departments. The culture department is responsible for the decision to gather all natural and archaeological museums of the province under a unified and autonomous administrative unit, at the head of which stands MUSE. This allows a high degree of co-ordination of all educational activities and related marketing strategies, as well as economies of scale due to the share of a number of back office tasks. The department of land, agriculture, forests and environment has devised for natural reserves a managing model consisting of a net involving the local communities, thus applying, rather successfully, the European policy framework Natura 2000.¹⁵ The role MUSE has been called to play within this net is quite important, both in terms of research (especially monitoring activities) and in terms of dissemination of awareness, as well as knowledge, at the very local level (valleys and municipalities). Finally, since about 20 years the province of Trento has been granted autonomy in the management of the whole of the local education system. This is also a good premise for the creation of a network between the main education institutions and the world of public museums, themselves all dependent on local governments. This premise has been fruitfully exploited by MUSE to establish stable and positive relationships with schools (education of students, teachers' training).

The provincial government is also characterised by a strong commitment to policies favouring families with children. It has set up a family and youth policy agency which is especially active in inducing local organisations of all kinds (from public institutions to private companies, especially in the tourism sector) to adopt family-friendly policies. This agency has created a label, "Family in Trentino", with its own logo and visibility. This label is granted to any organisation wishing to have it, provided it fulfils given standards of quality for their services dedicated to families. MUSE is among the public institutions having been granted this label. In addition to this, in November 2017 the provincial government, MUSE and UNICEF signed a protocol by which MUSE will become part of an experimental project named "Museums and libraries friends of children and adolescents".

Facilitation in networking processes and creation of a framework of policies favouring families are the main contributions the local government offers to MUSE's dissemination strategy. Given MUSE's current autonomous status, the provincial government is not entitled to help MUSE in this respect with more in-depth actions. For instance, it is MUSE's sole responsibility to find the best way to make a visit a meaningful experience, and to decide its opening times.

Financially-wise, the provincial government grants MUSE an annual allowance (rather stable throughout the years) for its institutional tasks, including research and education. However, MUSE often also asks for extra money for specific projects: research and education activities additional to the standard services it produces. The provincial government often grants extra subsidies, especially if these projects also receive funding from the EU. EU funding is interpreted as a signal of the project's quality.

¹⁵ Also the three mountain parks of the province (Stelvio, Adamello-Brenta and Paneveggio-Pale di San Martino), which have their own administrative status, and UNESCO Biosphere Reserve "Alpi Ledrensi and Judicaria", are part of the net.

All in all, one may conclude that underlying MUSE's activities fostering cultural development there is a shared view between the local government and the museum. However, some fears emerge within the museum as to the possible consequences of the implementation of the reform embodied in provincial law no. 15, 2017. Reducing a museums' autonomy may affect its effectiveness in dissemination. In fact, also the literature has highlighted that there is higher effectiveness in visitor-related activities when a museum is autonomous (Bertacchini, Dalle Nogare and Scuderi 2018). The local provincial government, and especially its bureaucracy (the culture department) do not seem to acknowledge this.

2.4. Inclusion, health and well-being

Being MUSE a science museum, its educational activities (of which more on par. 3) are often centred on topics such as sustainability and/or health. Science also reveals that the features all humans have in common are by far more numerous than those that make us different, and by communicating this, MUSE's exhibitions also contribute to fight racial prejudice and to promote integration. An indirect commitment to the local community's health is also the communication MUSE has established with the agricultural sector in order to make its practices less reliant on chemicals and more oriented towards a sustainable development model (par. 1).

MUSE is not involved in actions having a therapeutic effect on its visitors. Its Maxi Ooh section, however, is (also) conceived as a space that contributes to early age prevention of mental problems.

Maxi Ooh is an innovative project in many respects. It is a space within the museum dedicated to children aged 0-5. The target visitor is a "babult", i.e. a couple consisting of a baby and an accompanying adult. There are two large rooms: one is a welcoming space, where special care is dedicated to the relax of the visitors, while the second one is dedicated to sensorial paths (hearing, touch and sight). In fact, Maxi Ooh is focused on perception, the use of the senses and their coordination. There are spheres (pumpkins) devoted each to a particular sense where children learn and experiment with body, mind and emotions (responsive large screens, heated floors...). It is a space without directions, where adults, both the parent and the tutor, do not teach, but participate to the wonder, discovery and knowledge processes, and where peer learning and exchange are most important.

The story of Maxi Ooh is interesting, because it testifies MUSE's attention to the needs of its most important stakeholders, its visitors, as well as its networking skills. Before the new science museum was opened in 2013, a survey was conducted on 2 500 local potential visitors on the desirable features of a new museum. One of the most important need they expressed was a specific area dedicated to families with very young children, and activities for the latter.¹⁶ The original new science museum plan was therefore modified to include a much larger space for this type of audience. In the meantime, advice was asked for to experts on how to conceive this space and the activities that would take place in it. The local nets of crèches and kindergarten were involved as well as Reggio Children, a private-public entity committed to the diffusion of the world-famous Reggio Emilia pedagogic model for very young children. Reggio Emilia's

¹⁶ In an open question about the most desired features for the new museum, 27% expressed this demand.

crèches model focuses on self-directed experiential learning in relationship-driven environments, and has had international resonance since the end of the Nineties. Organisation of spaces plays a special role in it, as well as co-creation of knowledge and experience by children. Besides seeking advice in the world of early education specialists, MUSE also considered the opinion of a number of other experts in the fields of health and social sciences. Its staff organised twenty meeting with anthropologists, researchers in the field of autism, neurologists and experts in disability to validate the proposed project.¹⁷

MUSE's commitment in the social inclusion dimension is focused on disability and NEETs. As far as disability is concerned, MUSE's management works to make these two statements true:

- Disabled people should be able to visit the museum on their own, if they wish to do so
- A museum is a place where able and disabled people should meet.

Both goals entail that some disabled people are involved actively in museum's life. MUSE works on a number of projects in collaboration with local social cooperatives. These are financially supported by the provincial government, through subsidies to the cooperatives.¹⁸

The social cooperatives working for and made up of blind and deaf people have collaborated with MUSE to prepare and organise guided visits, available upon request, especially conceived for those with these types of disabilities. The guide is a disabled person, part of the social cooperative, who has been trained by MUSE's staff.

Since September 2017, every Monday (the day the museum is closed) MUSE receives the visit of a group of mentally disabled. Their job is to map the museum spaces and evaluate their being disabled-friendly. They also consider the way the collection is exhibited. They will be involved in the creation of a printed simplified guide.

In all these initiatives, there are two goals: to make the museum visitor-friendly also for people with special needs, and to empower disabled people by making them feel part of the museum organisation, with positive consequences on their self-confidence and benefits in terms of acquisition of skills.

An even more challenging project is the one in which mentally disabled people and people with serious physical disabilities (spastics) are involved as "accompanying guides" for groups of non-disabled. Every Sunday a visit is proposed in which one can

¹⁷ It is surprising to notice that Maxi Ooh is not often cited in the reviews on MUSE; even more surprising considering that the majority of the reviewers visited the museum with their family. Possibly there is a self-selection phenomenon here: not knowing of the existence of Maxi Ooh, only families with older children are likely to visit. This calls for a marketing strategy targeted to families with younger children. The few reviews mentioning Maxi Ooh generally talk about it in positive terms.

¹⁸ One could read this type of financial arrangement as if public money dedicated to social welfare indirectly financed initiatives by museums through in-kind contributions. In fact, in-kind contributions are offered by the very beneficiaries, who co-create value within the museum. For instance, the disabled guides do not show up in MUSE's budget as their employees, because they are paid by the partner non-profit institution, but they actually work for MUSE. Another example is the following: some custodians are jobless people paid by the Province of Trento within a long-term project against unemployment.

discover MUSE following two guides: one is part of MUSE's staff, the other is a disabled person, who is doing this as part of her job training programme.¹⁹ Here part of the project is directed to standard visitors: the purpose is to make their perception of disability more coherent with the very reality of special needs. Self-selection is problematic, here: ideally, one would like this type of visit *not* to be chosen by visitors who already have an open mind with respect to disability. On the other hand, imposing this type of guided visit on randomly selected visitors might be a danger, because some of them could express their prejudice openly, thus harming the disabled guide's self-confidence. In any case, the very fact that MUSE promotes this initiative, and advertises it, is in itself a strategy for social inclusion reaching a vast and heterogeneous audience.

MUSE's gardens are the focus of a social inclusion project involving young people whom the provincial government (through its social department) has identified as "critical". These people, usually young NEETS, are taken in charge by a large social cooperative called Progetto 92. In 2013 MUSE's director involved this cooperative in the management of MUSE's greenhouses (of which more on par. 2); Progetto 92 had been running its own greenhouse since long, therefore they had specific skills in this field. So now problematic adolescents work in MUSE's gardens, under the supervision of a botanist and an educator. Costs are shared: botanists and educators are part of the cooperative, while heating, fertilisers etc. are MUSE's responsibility. The collaboration has been extended to include also other activities. Progetto 92 runs a carpentry workshop, which now produces (also) bird houses on sale at MUSE's shop.

The collaboration between the social cooperative Progetto 92 and MUSE is now taking a step ahead. The partners are planning to jointly run a shop in Trento centre, a branch of MUSE's museum shop on the site of the old natural science museum. This is seen as also as a way to increase MUSE's visibility. NEETS will be involved both as producers of gadgets and as shop-assistants. The cooperative also manages projects involving youth who have been separated from their problematic families; they are gathered in small groups in apartments under the supervision of an educator. During the summer, these adolescents are invited to take up a job, and Progetto 92 intends to involve them in the MUSE's shop project, too.

Prisons are run by central government in Italy. A contractual agreement is in force between the Home Office and the Ministry of Culture, with the collaboration of regions, to favour artistic activities in prisons. The performing arts have been introduced extensively, while the museum sector has not been so active in this respect, though some interesting examples of involvement of museums with prisoners do exist.²⁰ MUSE has no ongoing programme directed to the world of prisons, although there is some potential here considering that both MUSE and Trento's prison have a vegetable garden.²¹ The director is considering this opportunity for the future. The garden is also seen as an opportunity for projects involving the ethnic communities living in Trento. Integration projects, seen also as desistance projects focused on marginalised youth, are in a programming phase; a local association is involved.

¹⁹ The disabled guides are paid by the social cooperatives. However, the future of this project is in danger because of lack of funds.

²⁰ In Trento, for instance, the local Diocesan Museum has organised dedicated activities.

²¹ In Trento's prison a cooperative active in inclusion projects has involved about 20 prisoners (out of 250) in the cultivation of saffron, medical plants and cabbages which are sold on the local market.

In all strategies MUSE adopts in the domain of social inclusion the museum management seems to be more active in proposing than in ex-post evaluation of results. The director has expressed the opinion that since these are not typical museum activities, it is difficult for a museum to monitor these effects, valuation should be delegated to third parties. Yet this has not been done. Two other critical aspects are the lack of a *systematic* approach to the share of costs of the projects and a scarce collaboration/coordination in this respect with other museum institutions.

If we define wellbeing as a term also comprising health and social inclusion, MUSE's active role in the promotion of wellbeing mainly stems from its management's initiative, within a legal context in which the museum enjoys a lot of autonomy in its strategic choices. The local government plays a role only in that it leaves museums pursue their goals autonomously, and finance museums' special projects and social cooperatives' actions.

This is not to say that the local government resists museums in their initiatives for health, wellbeing and also social inclusion. Money is often granted to MUSE in addition to its budget for special dissemination projects, some of which regard health issues. Social policy actions are often outsourced to non-profit entities working for and with the disabled and disadvantaged, and MUSE actively collaborates with some of them. These social cooperatives mainly live on public money, and clearly the provincial government would not renew their contracts if it were not satisfied with the strategies they implement, including their collaborations with MUSE. Yet all rests on politicians' sensitivity to the issue, and on a museum's will to be active in the field; within the current legal framework, museums are not encouraged to start initiatives in this respect. In fact, other local museums are not so active.

It would be highly desirable that museums' contribution to wellbeing be recognised by departments/agencies other than the cultural one. The new law reforming the cultural sector (law n.15, 2017) seems to be the first legal document recognising the role of cultural institutions for the wellbeing of the local context: it states that cultural institutions should contribute to improve quality of life and favour processes of social inclusion (with special reference to migrants). On the contrary, the laws specifically focused on local development do refer to wellbeing, but museums are not mentioned there. In the local legislation on public health services there is no mention to the role museums can play, either.²² Finally, there is an the provincial government is committed to connecting educational organisations and the labour market, but the new law regarding these issues has not been implemented, yet, and there is not so strong an involvement, at the moment, of the culture department in this strategy.

2.5. Managing museums for local development.

While all dimensions so far have covered local governments' and museums' joint actions focused on reaching local development goals, this last dimension deals with the coherence between those goals and the means to reach them. Among these means there are both instruments and routines used in day-to-day museum life, such as strategies

²² The health sector is a regional competence in Italy (a provincial one in the local context), and being Trentino a province enjoying an autonomous status, also social policies are carried out mainly following the prescriptions of local (provincial) legislation.

focused networking and on cost-sharing with other institutions, and aspects more related to the long-term dimension, such as its conservation policy and its multi-year programming. In fact, a serious commitment to fostering local development needs both a practical approach to day-to-day organisational and financial issues and a sustainable and coherent policy *in the long run*. In particular, the long-term vision is of paramount importance, given the fact that some of the actions a museum may take to foster development manifest their effects only after many years (think, for instance, of education).

MUSE's challenges with respect to this dimension are two:

- From the point of view of the management of the museum's day-to-day operations, a revision of staff policy.
- From the point of view of long-term programming, a new budgeting method.

The necessity of a new staff policy comes from a status quo in which too many people working in the museum, in particular all the so-called *pilots* (guides to the use of the hands-on exhibits), are now just collaborators, not proper employees. This comes from the recent history of the museum. When the new science museum opened in 2013 the expectation was of a big boom of visitors in the first year and possibly a downturn afterwards. Staff size was adjusted to these expectations, i.e. staff was increased, but not greatly and there was a large use of contracts for temporary jobs. Yet the downturn never took place. Having de facto permanent staff employed as temporary workers is extremely negative for a museum, as it prevents their identification with the institution and triggers principle-agents type of problems. It also splits staff, preventing a cohesive atmosphere to grow. On the other hand, the higher costs of permanent employees are unaffordable given the current and perspective budgets. A solution has recently been found: the collaborators will form a co-operative to which MUSE will outsource the tasks now covered by the collaborators. While this type of arrangement is indeed an improvement with respect to the previous situation, it must be admitted that it is not first best for a museum to outsource (part of) its educational services, considering that education is a fundamental mission. Outsourcing is common in Italian museums, but other institutions have chosen a different strategy: only back office tasks and low-skills profiles have been contracted out.

As far as the long-run vision is concerned, since 2016 MUSE produces an accounting document, called Three-Year-Plan Document, which clarifies its priorities and constraints in financial terms in the next three years.²³ Clearly, three years is more a medium-term horizon than a long-term one, but it is anyway longer than a one-year perspective, which is what has been the rule in Italian public museums up to not so long ago. Now the context has changed. In fact, a national law (Law 118/2011) has prescribed a three-year budget must be produced by all levels of government and their agencies. MUSE abides by the law, but it does not just do that. The multi-year financial plan it produces is made particularly readable through the presentation of a reclassification of all revenues and costs according to the activity based costing method. This is a particularly difficult task for a museum whose policy is often devised so as to get two birds with a stone, and it is a challenge very few governmental agencies (including museums) have faced so far.

Ideally, a reclassification should follow the principle to assign all costs and revenues to the five dimensions: economic, urban regeneration, education, health and wellbeing,

²³ This Plan complements the more descriptive Multi-year and Yearly Activities' Programme.

management. This would make the Document an effective, practical support to the long-term effort of the museum to maximise the impact. At the moment this is not exactly what the Document is. The reclassification it contains is not totally orthogonal to this approach, but it is more functional to the financial negotiations between the museum and the provincial government than to the museum's operations. In fact, the Document is the plan every December MUSE presents to its council board and to the provincial government for approval.²⁴

Yet alongside the current reclassification, the director of MUSE and its accounting unit are now considering another one, intended more as a support to the effective management of resources. Inspired by the OECD Culture and Local development project, this version of the three-year plan should re-allocate all costs and revenues to the five dimensions. A re-classification is perceived by the director also as a way to avoid the risk of a budget allocation that is unbalanced in favour of revenue-generating activities. Revenue-generating activities are not necessarily those having the highest impact. Improving the museum shop may be of second-order importance with respect to starting a new programme for social inclusion. Re-writing the budget along the lines of the OECD Guide and using the activity based costing method allows to reason in terms of impact size, and therefore to allocate the budget between the different dimensions and, within each of them, to the different programmes in coherence with the impacts one wishes to privilege.

In fostering a culture of medium-term planning, the implementation of Law 118/2011 has assigned a new role to the provincial government, too, because now it must declare its grants for every cultural institution in the next three years. Though not a full commitment (adjustments are possible from year to year), this is a great improvement with respect to the recent past, in which every museum could only know about its governmental grants for the next year. The recent provincial law reforming the governance of cultural institutions (law no.15, 2017) often makes reference to long-term goals, such as social inclusion and increase in creativity and innovation at the local level, yet not all of its prescriptions seem to go in the right direction. The reference is here to the re-assignment of all museums' employees to the provincial government, which endangers the autonomy museums must enjoy in order to reach those goals effectively. This part of the law has not found application, yet.

The questions of the self-assessment dedicated to this last dimension of museums' and local governments' commitment to local development are very detailed. They also cover a number of specific topics. In what follows we summarise them, putting together MUSE's and the provincial government's views.

²⁴ There is a clear attempt to classify all costs and revenues so as to highlight that many activities (from fundraising to didactic activities) pay themselves, and part of the revenues even cover conservation and other non-reducible costs. In other terms, the provincial government grants are not even sufficient to cover the costs associated to the basic activities of a museum. Presenting accounting data so as to highlight this evidence clearly points both to how virtuous MUSE is in generating own revenues and to the fact that the provincial government could be more generous.

2.5.1. Short term

Efficiency: the revenue side

MUSE's stance in this respect is judged as satisfactory. The yearly provincial government contribution amounts to about 55% of its budget. The museum can retain its revenues coming from its visitors, including ticketing, educational services, profits from the shop and parking lot, concession fees of the museum café. MUSE covers the rest of its expenses through research grants and contracts (the latter mainly signed with the provincial government for long-term projects focused on monitoring the environment).

Efficiency: minimisation of costs

All projects are discussed and devised as to minimise costs (no duplications) and to possibly get two birds with a stone, so that typically projects are favoured in which different departments are involved (marketing and education; research and education; conservation and relations with other institutions), many of which have been exemplified in par. 1, 2, 3 and 4. Being MUSE a middle-sized museum, it is not so difficult for its staff to circulate information among departments. This is encouraged by the director, who routinely summons a weekly reunion of a number of their representatives.

Cost sharing is not so common with other museums, more so with other institutions. It does not derive directly from a provision of the provincial government: MUSE has its own autonomous status. Yet, many activities focused on social inclusion and employability are supported by the provincial government through grants given to the social co-operatives to which it outsources its activities, and who contribute to MUSE's offer through in-kind contributions, i.e. the very work of the disadvantaged they help. This arrangement may be read as a form of resource pooling.

Also fund-raising and sponsorships may be interpreted as forms of cost sharing. By convincing companies to sponsor its activities MUSE shares its costs: co-marketing campaigns (such as those with Ricola and Dolomiti Energia) are an interesting example. MUSE has staff dedicated to membership cards and the relationship with companies; there is a range of offers for would-be partners, both individuals and companies, as well as personalised arrangements for the latter. As MUSE operates in an area with very few big players in the private sector, its commitment in this respect must be great to be successful, and go beyond the geographical boundaries of the province of Trento.

Communication of the local development goal

MUSE assigns to a yearly corporate social responsibility report the task to communicate its commitment to local development to the different stakeholders. This report has a special focus on the achievements of the last year. In order to play at best its role, it should be complemented with more information on future plans, so as to be more co-ordinated with the Plan Document.

Share of spill-over gains

The need to calculate the spill-over gains is well perceived, but the director of the provincial culture department has little trust in the ability in doing it accurately, given that the positive externalities are widespread and sometimes take time to show up (think of education). There is scepticism about the establishment of a financial partnership for the share of the gains.

However, one of such arrangements is actually already in force between the museums and the local tourist boards through the supervision of another provincial agency, Trentino Marketing (see Appendix).

Volunteers

Trentino is one of the Italian areas in which social capital is at the highest levels, as testified by the per capita number of blood donors. Volunteering has a century-old history: the voluntary fire brigades are present in every town and village and especially in the latter they involve a large percentage of adults. The provincial government is very committed to keep this virtuous record, especially through generous in-kind grants to voluntary organisations. Although there is no strong tradition of a commitment of volunteers in heritage preservation and culture in general, in MUSE's new statute (a provincial regulation dating 2011) "support of volunteers' participation" is mentioned among the missions of the museum.

Volunteers in museums are often a problem in Italy also because of the power of trade unions, who often oppose their involvement. Recently, however, a national law, adopted also at the local level, has added a compulsory number of working hours to the curriculum of all students aged 17-19. This work is not paid and it is possible to choose among different types of jobs; every school establishes relationships with different companies and organisations and offers a variety of them. In Trentino this project, called *Alternanza Scuola-Lavoro*, has allowed the establishment of new relationships between schools and public museums, which was eased by the fact that both education and all major museums are within the sphere of competence of the provincial government. MUSE has set up relations with several local high schools to have students in their *Alternanza time* working in the museum: these students were 158 in 2017. Some see also young people doing their civil service as sort of volunteers, in spite of the fact that they receive a very small retribution.

Civil service in Italy is a voluntary activity under the competence of the regions and autonomous provinces: in 2013 Trentino was the first local government to dedicate it specific law. Civil service is seen as a means to promote active citizenship, to favour social inclusion and also on-the-job education. Some civil service projects involve the participants in cultural activities. MUSE is an accredited organisation for hosting civil service projects, and 24 youth aged 18-24 spent 3 to 12 months working there in 2017.

Occasional use of volunteer work in the organisation of events is not uncommon at MUSE: 135 people were involved in 2017, though just for some days or hours.

Finally, MUSE's citizens' science initiatives may also be interpreted as a way to involve volunteers in scientific projects.

2.5.2. Long term

Conservation

MUSE obviously has a dedicated plan; the staff working in conservation and archiving update their skills through courses that they take on a regular basis.

The provincial government has organised spaces for the conservation of pieces coming from different local museums. Clearly, museums of different nature may have different conservation needs, and so museums also have their own conservation spaces.

Recognition of the local development goal

It is MUSE's statute itself (in legal terms, a provincial regulation) that states that the museum "participates to the development and promotion of the territory".²⁵ Similar statements are also in Law no.15, 2017, yet laws and documents not strictly pertaining to the cultural sector do not see museums as principal actors.

Recognition must go hand in hand with the provision of sufficient resources for museums to operate effectively. Clearly, MUSE would not even exist without past investments and the generous annual allowance from the Province of Trento. However, par. 2 highlighted that the culture department somewhat resists plans to enlarge MUSE's sphere of action, meaning that the backing is there, but not for all possible future projects.

Institutional design

In order to involve museums in local development plans concretely, the OECD Guide suggests that the local government should agree with the museum on a selected number of indicators, and propose a contract assigning the museum the task to reach certain values for them. The contractual form the last sentence mentions is not explicit in the case here considered, nor has there been the selection of a number of performance indicators MUSE is entrusted to reach. Yet MUSE's Three Year Plan Document includes many quantitative indicators referred to the last year: from number of publications associated to each multi-year research project to the number of school classes involved in didactic activities. The Document must be approved by the council board and the provincial government every year; the approval may then be considered as an implicit recognition that if these standards are kept in the future, MUSE is doing a good job, and the grants it receives are justified.

The great autonomy MUSE enjoys is a pro in terms of institutional design, because it allows the institution to be more effective. In this framework, the director is, de jure and de facto, responsible for both (the details of) the vision and its implementation. MUSE is a museum that is very dependent on its director; in perspective, this may be a weakness of the institution, unless there is an enhancement of every museum unit's vision and management capacity.

²⁵ As far as development is concerned, MUSE's ambition is to have a role also in national perspective. Though a medium-sized museum located in a medium-sized town and with no special collection, MUSE is starting to be involved in international cultural exchanges, such as international trips of ministerial delegations

3. POLICY RECOMMENDATIONS

3.1. Policy recommendations for MUSE

Dimension 1): intensify the activity of the Fablab involving a larger number of start-uppers and would-be entrepreneurs as well as established firms.

Dimension 2): clarify with the political partners the future developments of the science museum, in particular as far as the acquisition of new spaces is concerned, and the destiny of Museo Caproni.

Dimension 3): intensify the effort to offer quality exhibitions. Satisfactory contractual relationships should be offered to pilots and guides, who should be put in the condition to identify with the institution's goals and feel motivated.

Dimension 4): establish a dialogue with the local health agency and prison to identify possible collaborations (therapies and health education, social inclusion). Identify with the local government a third party for the evaluation of results in this domain of action, taking into consideration the necessity to consider results in the long run.

Dimension 5): revise the budget structure so as to allocate expenditures to different chapters, each corresponding to the five dimensions of local development here considered. Re-structure the corporate social responsibility report accordingly. Enhance every museum unit's vision and management capacity, so as to make the future of the institution not too dependent on the director.

3.2. Policy recommendations for the local government

Dimension 1): recognise the role of museums in fostering local development not just in cultural policy laws but also in documents dealing with local development more generally (industrial policy, tourism policy, urban planning, education policy, health policy laws).

Dimension 2): clarify the political choices pertaining the future developments of the science museum and the associated available resources, in particular as far as acquisition of new spaces is concerned, and the destiny of Museo Caproni.

Dimension 3): keep not interfering in the strategies the museum adopts, recognising its better ability to understand visitors' demands.

Dimension 4): ease a dialogue between the local health agency and the museum.

Dimension 5): the different branches of local government (departments, agencies) should share a vision on MUSE's role and future and co-ordinate in their relationships with the museum. The current status of the museum as an autonomous agency should be understood and valued as a good institutional arrangement, and not altered. In particular, it is important that MUSE's employees stay as such and do not become provincial employees seconded to the museum.

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Annex A. Best practice for local government: Trentino Guest Card

Trentino as a tourism destination

Trentino is an Alpine region in the North of Italy. Its main tourist destinations are the Dolomites, a UNESCO-listed chain of mountains with a unique landscape and cultural background, and (part of) lake Garda. Recently also the main town in the region, Trento, has gained tourist fame thanks also to the opening of the new MUSE, the organisation of festivals (festival of Economics, Trento Film Festival) and a Christmas market. The area has two main tourist seasons: winter, when Trentino is mainly a ski destination, and summer, a season in which hikers and bikers mix with tourists with more multi-faceted motivations for a holiday. Excluding the owners of second homes, in 2017 there were little less than 4,3 million arrivals and little more than 17 million nights spent in Trentino, of which less than 10% in Trento town. The vast majority of tourists visiting Trentino in the summer are Italian and they are not on an organised tour; during the ski season the arrivals from Italy still dominate, but given that the foreigners stay longer, in terms of nights spent the figures are similar (Servizio statistico PAT, 2017).

Trentino Guest Card

In summer 2013 Trentino Marketing asked the local tourist boards (APTs), public-private organisations operating at the very local level, to join a project called Trentino Guest Card (TGC). Only a few joined, but the number increased in summer 2014, and by 2017 all but three out of 20 APTs had joined. The project has been going on since then, and has been extended from the summer season to the whole year. The idea is to offer all tourists in Trentino a card allowing them free or discounted access to a very large number of services all around the region. The main free services are public transport, museums and natural parks access, whereas discounted services mainly involve private producers of local agricultural products (especially fruits, wine, cheese and honey). The average number of services TGC offers is 200.²⁶ TGC is a group/family card and it is generated and offered to tourists by hotel staff at their arrival. Hotels and accommodation facilities must offer the card to whoever requires it; many actually promote it, as a complement to the hotel services. In 2017 about 226 000 TGC were issued (for a total of 550 000 tourists involved), and they recorded about 260 000 admissions/purchases of services.

The card allows the construction of a database, as a Qcode tracks all users' buys, save for public transport and a small number of discounted services at shops. As the card also records some characteristics of the holder (no. of tourists in the party, no. of children, foreign/Italian, if Italian: region of residence) and of the hotel issuing it, it is not just a

²⁶ Since in some of Trentino tourist areas the local APTs had already introduced a local destination card before 2013, in these areas TGC merged with the local card. This means that in the different areas of Trentino TGC offers a different range of services: in particular, in some areas lifts and chairlifts are included in the summer, whereas in others they are not.

marketing tool, but an essential source of information for profiling, hence future marketing strategies and tourism infrastructure planning.

Trentino Guest Card is self-sustaining, in the sense that the contributions by the APTs fully cover the bill by the providers. Public money is only in terms of Trentino Marketing personnel dealing with the general administration of the project and of the payment of the outsourced IT system supporting it.²⁷ Up to now, thanks to an increase in the use of the services offered in the card after it was introduced, all service providers have agreed to confirm, year after year, their partnership with TGC.

More in detail, public transport providers, museums and parks are paid the admissions/tickets associated with the use of the card by contributions by the APTs, who in turn receive from their affiliates a share of the tourist tax they collect.²⁸ The whole of these contributions is divided into different budgets; the one dedicated to cultural institutions is by far the largest one. This budget is roughly calculated as the expected TGC museum admissions times 0.7. Up to last year, this amount was divided among the different museums/castles in proportion to the number of TGC admissions they recorded, but with a ceiling: no museum could receive more than 20% of the whole cultural institutions' budget. This clause had been introduced, at the beginning of the TGC project, as a way to attract small museums, because, as they were very unlikely to reach the ceiling, it implied a small discount for TGC admissions for them (30%). Possibly, it was also meant to consider the fact that in larger museums TGC visitors would not only mean an admission, in monetary terms, but also some other revenues, due to the presence of other services, such as guided visits, bar and bookshop.

Trentino Guest Card and MUSE

The time TGC was introduced was also the time the new MUSE launched. MUSE's admissions immediately boomed. As MUSE's fame increased, it perceived the 20% ceiling on the overall TGC budget as a very tight constraint. MUSE constantly reached the ceiling, and this implied that at the end of the day, their revenues from TGC admissions were associated to a discount, for every TGC admission, up to 60%.

Considering that the TGC project crowded out a non-negligible number of regular admissions at MUSE, the museum management considered proposing what could be considered as a partial exit. According to this proposal, TGC would not offer a free admission in August, but would only guarantee a 20% discount in that month. Trentino Marketing objected that this was against the spirit of the project, and finally a compromise was found.

According to this deal, in force since 2018, all TGC holders who wish to visit MUSE have a free admission. Now, however, there are two budgets for cultural institutions: one for small museums and one for large ones. The allocation of the budget for the large museums is strictly proportional to the number of admission: each receives the number of admission times 70% the price of a full ticket. This type of deal protects smaller

²⁷ Trentino Marketing itself is partially funded by contributions by APTs.

²⁸ Sometimes, in the areas where a tourist card pre-existed and TGC therefore offers more services, it is given to tourists at a price. In this case, these revenues substitutes/complement a higher tourist tax.

institutions, while at the same time increasing the competition among more famous museums.

The renegotiation was also the occasion for the start of a new service offered by TGC through its new App: a service called “Skip the queue at MUSE”. The service is financed through a dedicated budget, calculated as 70% of service price (1 euro) times a given maximum number of services saleable through the App (negotiated with the museum). The App is a tool Trentino Marketing uses to collect a mail addresses,²⁹ a database they use to promote events through a mailing list service.

The story is indicative of an active role of MUSE in negotiating with the tourism authorities. As its success started driving new visits to Trentino, the positive externalities emanating from the tourism business to the cultural sector were partially counterbalanced by the reverse phenomenon, and this gave MUSE a convincing argument.

But the story is also interesting in that it tells that whenever destination cards schemes are involved, the conflict is not just between tourism boards and cultural institutions (which determines the size of the economic pie for cultural institutions as a whole), but among museums themselves (determination of how the pie is divided among them). There is a clear distinction between small cultural institutions, for which participating to the destination card is crucial in terms of visibility, and larger ones, whose benefits from the card are not so great but the presence of which is crucial for the very success of the destination card.

In theoretical terms, destination cards are two-sided markets where service providers have also access to an alternative market (that of residents and tourists who do not hold the card), but this alternative market is segmented, since there is a stark product differentiation. The segments constituting the demand for not-so-famous institutions are not big enough to make them sustainable. Clearly, different contract arrangements are needed for the different types of service providers, so as to guarantee participation of all types.

²⁹ About 20 000 mail addresses have been collected so far (March 2018).



More information: oe.cd/culture-conference

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