Introduction
Daguerreobase shares with Europeana, being one of its aggregators, the goal of facilitating access to Europe's cultural heritage. In the course of collaborating with various institutions, museums, collections and collectors, we have encountered many misconceptions and lack of knowledge about the juridical concept of the public domain. European copyright law states that all works older than 70 years – which is certainly the case for most Daguerreotypes – automatically belong to the public domain. This applies to all knowledge and information that is not bound or protected by copyright and that can therefore be freely used without restrictions.

In principle most cultural institutions and museums agree that unrestricted and free access to the cultural patrimony upon which modern society is built is beneficial for everyone, but these organizations are increasingly under pressure, as less and less money is available for the digitization, preservation, storing and cataloguing of their data and artworks. For this reason many cultural institutions that possess works free from copyright are reluctant to publish high-resolution images of these works on the web without any restrictions, as they assume that this will mean losing a potential source of income. Is the often-mentioned copyright issue the real reason why these institutions are so reticent, or are there other issues that prevent many institutions from digitizing their collections? Another frequently mentioned concern is the fear that digitized artworks may be used in a totally inappropriate context or even misused. Also commercial exploitation by third parties is seen as one of the wrong practices that may arise. Thus, although most of us seem to agree that our cultural heritage should be available for everyone, only a very few institutions have a clear policy as regards the digitization of their collections. Perhaps there is still a lack of understanding of the opportunities digitisation can provide, and a fear of the new, which hinders the elaboration of strategies for new sources of revenue, or perhaps there is simply a lack of human resources to carry out the work involved.

We need to ask ourselves how museums and archives handle their digital collections, and how they can resolve the tension between their desire to make these collections fully available to the public and at the same time valorise the value and meaning of their precious collections.

The presence of museums and museum collections online
The online exposure that digitization allows is generally considered to be an interesting option for bringing museum collections to the notice of a wider public and many large museums have now digitized most of the items in their possession and have often explored interesting new approaches towards presenting their collection in creative and inventive ways. They have set up
online collection platforms, which people can browse and even rearrange so as to create their own personalized museum, as well as apps and interactive websites, which are able to trigger the interest of online users by means of a dynamic and modern digital approach. The Enumerate Survey Report on Digitization in European Cultural Heritage Institutions provides some important insights into the work that still needs to be done, especially since this survey covers a fairly long timeframe (2012-2015). The survey shows that during this period there has been minimal growth in the digitization of collections, and that although strategies have been steadily developed progress has been slow. Furthermore it shows that only a very small percentage of museum staff is experienced in this field or has been specifically trained.

What prevents the development and progress of digitization?
At present almost all museum organizations appreciate the added value that digitization entails, and yet many questions are still raised and many problems still exist, which block and hinder progress and further development. Money and manpower in particular are in short supply, and it takes expertise and resources to formulate effective digitization plans. Digitization is also a fairly recent phenomenon with which many people are still unfamiliar and there has been little time to conduct in-depth research into the interest and appreciation of potential audiences concerning digitized museum collections. In addition museums do not tend to work together, pooling their resources and expertise and learning from each other. Last but not least, staffs do not always have the right knowledge to develop appropriate online systems and applications.
How can we speed up developments?
An example of best practise: the Museum für Kunst und Gewerbe, Hamburg

The history of the museum
The Museum für Kunst und Gewerbe (Museum for Art and Industry) was founded by the Patriotische Gesellschaft of Hamburg in 1866. The basic intention was to bring together and exhibit historical and contemporary examples of good design under the same roof as patterns for contemporary arts and crafts workers and industrial designers. The founder and director, Justus Brinckmann (1877-1915), put these plans into practice and opened the museum in 1877 and it was one of the earliest examples of a new type of museum with the aim of improving the quality of manufacturing in the region by refining the taste of the citizens.

Under director Max Sauerlandt (1919-1933) the next generation added a new dimension to the original idea dating to the period of the industrial revolution, by introducing his vision of an encyclopaedic collection of outstanding cultural artefacts reflecting 4,000 years of human creativity. The Expressionist idea of the unity of all art forms became established in the collection at that time, thanks to progressive modern art acquisitions.

After World War II, in 1945, the focus moved to the scientific cataloguing of the inventory and the systematic building up the collections. A high point in the history of the Museum für Kunst und Gewerbe was the “Tutankhamen” Exhibition in 1981. Director Axel von Saldern (1971-1988) organized Germany’s first blockbuster exhibition, which had 620,000 visitors.

The museum regards its closeness to the citizens of Hamburg, which has remained strong to this day, as one of their main assets. It is an institution that combines respect for tradition with openness toward the future and it
continues to fulfil the remit, with which it was founded, that of an educational institution that closely focuses on the needs and interests of the public.

The collections
The collections have been accumulated over many generations. Today the Museum für Kunst und Gewerbe is a universal museum, presenting over 500,000 works showcasing human creativity and inventiveness and including over 4,000 years of human history from Antiquity, through the Middle Ages, the Renaissance, the Baroque and Classicism to Modernity and the present. In 1872 a bouillon cup from the royal porcelain manufacturers in the French city of Sèvres received the first inventory number, and today it is part of an extensive Ceramics Collection.

Since then the collections of the museum have continued to grow consistently through acquisitions, gifts and bequests. The collections are internationally oriented, with particular emphases on European and East Asian art. They unite the three world religions: Christianity, Buddhism and Islam. In addition, this interdisciplinary museum has comprehensive collections of Graphic Design, Poster Art, Photography, Fashion and Textiles.

The objects in the Photography and New Media collection were among the first to be digitized. From this collection 693 daguerreotypes taken between 1839 and 1957 were published on Daguerreobase, 652 of which are portraits, 340 men and 312 women. Hamburg was a famous and fruitful place for the art of the daguerreotype and Hermann Biow (1804-1850), the most famous daguerreotypist in the city, portrayed its politicians, celebrities and wealthy citizens, as Franz Liszt, Alexander von Humboldt and Friedrich Wilhelm IV. Biow became friends with fellow daguerreotypist Ferdinand Stelzner, the two opened a studio and established themselves as among the earliest news
photographers. Hermann Biow is remembered above all for his images of the Hamburg fire in May 1842.

Nowadays all of the objects in the Online Collection of the Museum für Kunst und Gewerbe are publicly available on a digital platform. The data is updated regularly so that the number of objects available online is constantly growing. By entering a word into the search box, all the collections are searched for matching objects and their respective images. Objects can be saved via “My Collection” and at the click of a button you can share your findings on various Social Media platforms.

All images tagged as Public Domain are free of rights and can be downloaded. These images can be used without restriction for private, scientific, creative and commercial purposes. Nevertheless the museum asks users to credit its works as follows:

When using a public domain work please credit the artist/creator. To let others know where the work or the image of the work can be found we ask you to credit the Museum für Kunst und Gewerbe Hamburg and to include a reference to MKG Collection Online. The more you credit the museum as providing institution the more other museums will be motivated to also share their works as public domain images. We recommend to state the source as follows: Artist/creator, title, date, Museum für Kunst und Gewerbe Hamburg, and a link to the object.

Further Fair Use - Guidelines for images in the Public Domain are also to be found on the website.

The Policy of the Museum für Kunst und Gewerbe and Hamburg

The digital transformation of the museum’s possessions has been a radical and highly relevant move from restrictive licensing towards free availability of digital data to the public. The Museum für Kunst und Gewerbe is the first museum in Germany to have released its public domain possessions under a
Creative Commons Zero license. This means that all the items in the collection, the copyright for which have expired, are available online as free downloadable records for private, scientific, creative and commercial use. This opens up a completely new way of working and a host of opportunities for users, who can now freely create their own contents.

Research, use and re-use of the collections
Thanks to digital resources such as a website, online collection and social media channels the Museum für Kunst und Gewerbe is able to inform the public as regards initiatives and new developments well in advance. In order to create interesting new online visitor experiences existing digital content can be rearranged, thereby creating new insights into the material. Various digital initiatives accompany and complement the museum’s exhibitions, for example the fashion blog Style Breeze, which can be accessed on both Instagram and Twitter. Micro-sites can also be set up for special exhibitions, as was the case for the project Fast Fashion, The dark side of fashion and Krieg und Propaganda.

The Museum für Kunst und Gewerbe also appreciates the extraordinary potential of digital resources for further development in the future, Audiovisual Apps have been implemented in order to present the museum’s collection of special tools and instruments and the iBeacon tour gives the visitor a virtual tour of the new technological part of the museum. Also an e-book is available which presents the museum’s musical instruments, as well as a digital narrative about the era of Art Nouveau in the form of a web magazine. The digitized works of the museum are available through other online platforms such as the European project Daguerreobase and the German Digital Library (DDB). Unlike many other museums the Museum für Kunst und Gewerbe welcomes the sharing and re-use of its collections, and its policy is based on the idea that there is nothing better for a museum than for its collections to be researched, used and re-used.

The audience
The museum provides digital services and social networks as the primary channels for reaching new audiences, leading to the deliberate decision to provide digital objects in the public domain under a license that allows commercial use. The museum’s objects can thus be shared on social media channels, Wikipedia and online blogs, and used to produce new works in the creative industry. The Museum für Kunst und Gewerbe is not afraid that the digital resources it offers will stop people from visiting the real museum. Since the objects will become visible in other contexts, they will produce discussion on many different channels, leading to more publicity for the museum and therefore more visitors in real life.
Technology
Digital databases have been employed by the *Museum für Kunst und Gewerbe* for a long time now. Standardization and a strategy for re-usability were however only implemented with the start of the *digital inventory* program. Standard data fields and the LIDO standard exchange format, which is used with the help of the museum’s partner digiCULT, are fundamental resources for the long-term digitalization of the exhibits. In its exhibitions the museum makes extensive use of digital devices such as i-pads and audiovisual elements.
The museum plans to address three important issues:
1. Long-term staffing to expand and enhance the production of digital content.
2. Expansion of digital communications to reach more people.
3. A wireless local area network (WLAN) in the museum to make digital content available and to improve communication.

Staff
Employees with digital expertise are available in every field, as the digital inventory affects a wide range of different areas. For the implementation of the online collection they deal with digital imaging, metadata standards and data curation, as well as content management, linked data, social media, digital copyright and digital curation. Their job involves selecting, editing, creating, linking and sharing digital data for various different audiences.
They believe that contents should be made available in varied ways, to be further developed between the digital inventory and collections as well as with the marketing department. Social media expertise is especially common in the younger colleagues and it is important to increase their know-how and extend resources, so as to be able to create relevant content for digital visitors. The museum does this by training employees and filling vacant positions, while some specific tasks are often outsourced to external agencies.
The appropriate expertise is however internally established by the museum’s own personnel, with an art historical background, for example via workshops about social media or the licensing of digital content. At a project level external experts are access employed in specific areas, such as virtual exhibition designers, for digital experiences or for the creation of audiovisual material. Strategic issues are exchanged within an international network of experts from other museums.

Strategy
It is particularly important to have clear targets and an overall vision, within which digitization is not seen as an isolated issue but as central to all areas of the museum. For the future it is necessary to work with the already partly established guidelines for basic processes of digitization, but also to have a flexible and experimental approach. A museum should reflect society and as our society is based on digital technologies it is natural for a museum to be open to digital opportunities and methodologies.
What can we learn from the approach of the *Museum für Kunst und Gewerbe*?

**Develop a strategy on the disclosure and preservation of cultural heritage**

The most important message of the *Museum für Kunst und Gewerbe* is that digitization can offer completely new and more interesting uses for a collection. Digitization is not only a great tool for the preservation and description of a collection, but if done in the right way, it can also provide opportunities for research and open up museums and their collections to a wider audience. It brings items that might otherwise never have left the archives and storerooms to life and even helps the museum to restore incomplete items to their original appearance. Whole new worlds can be opened up by using virtual techniques, but this only works if the museum develops an appropriate digitization strategy, and if it is able to implement this strategy on all levels, as the staff, management and even the board of directors have to support this strategy.

**Bringing the collection to life**

Collecting and amassing data has no intrinsic added value in itself. Combining and comparing data, by means of which new ideas and information are generated, is possible thanks to the power of digitization. By thematically classifying and connecting material a collection can be made more approachable for a larger audience. The more digitized material is available, the easier and more interesting it becomes to use this information for new combinations and connections. Online users can assemble their own surprising collections or the museum can use new applications to create new combinations and trigger audience reactions. Using digitized information for websites, apps, blogs, Facebook, Instagram and Twitter, and activating links between information streams brings attention to museums as well as their collections, which thus become active and accessible assets.

**Another kind of relation with the public**

Users, wherever they are, can now access and peruse almost any museum’s collection online. This has quite an impact on museums, as the growing power and functionality of modern technologies has created a demand for quick, easy and affordable access to information. Users want faster and more easily accessed data and stimuli than most museums are currently offering, and the relationship between museums and consumers will certainly develop in an increasingly two-way direction. It is becoming more important for museums to operate as helpdesk, providing adequate copyright information, reference information and links to comparable collections. In the end museums themselves will also benefit from this approach, since once the digitization policy has been developed and adopted, necessary conservation programmes will be enhanced, metadata and cataloguing will provide valuable information on collections and research for exhibitions will become easier and more effective.
How about copyright?
Although copyright has been mentioned as one of the biggest obstacles to digitization, in fact this is a problem that can quite easily be solved. By adding the right copyright labels the public will be educated and if they are not fully trusted to use data responsibly, it is easy to add watermarks, which do not hinder research when the data is used properly. Commercial re-use is impossible without consulting the owner or relevant institute. It is important for museums to understand that if works belong to the public domain, they should be labelled as PDM. Workarounds will not be considered acceptable when disputes are settled in a court of law. It is more important to realize that that the process of digitization is inevitable and unstoppable and that it will continue. Users don’t seem to care where information comes from, they simply want to conduct searches on a topic and find the data they are looking for out of a list of downloadable digital items. But this does not mean that source information will always be neglected, and this is one of the important issues that Daguerreoibase, Europeana and Museum für Kunst und Gewerbe have been working on. The public must be able at any time to find out which collection houses the objects they are looking for, also so as to settle possible copyright issues, but especially to be able to contextualize the digital objects.

Does this mean there are no pitfalls?

Recommendations
In order for the process of digitization to mature, there needs to be a clear understanding about the new way of working. Most museums were established in a pre-internet period and in many cases their mission statements and policies do not take into account the online world. The contrast between their traditional non-profit public role and the more demanding commercial approach they now find themselves having to develop, in order to keep pace with the digital era, must be thoroughly considered. To increase the impact and growth of digital collections, museums need to understand where they stand and what their future goals regarding this issue are. Can they take a leading role in digitization, not only in terms of digitizing their analogical collection, but also in the purchase of new digital material? In photography this certainly must be considered. The changes introduced by the digital era are challenging and demanding, but once museums have recognised the need to manage these changes appropriately they can start developing strategies to transform them into new opportunities. Museum managers and staff now require specific training in new disciplines and techniques in order to develop their institutions effectively in the digital age. Skills must be developed for all relevant functions: archiving, cataloguing and indexing of digital objects, preservation, technical know-how, e-commerce, graphic design, management and online marketing.
strategies. These skills must be combined in interdisciplinary teams including domain specialists and IT professionals. These teams might even exist between museums, why not learn from each others experiences? Museums have to find out what is required by the market, what objects in the collection people are most interested in, what value-added services people want and what are the right price-points for them. Nevertheless a better alignment with the market will not automatically lead to a better business model, since it is hard to capitalize on a higher level of involvement or appreciation by the public and museums will have to research other revenue models as well.

Digitization is costly since, apart from the cost of hardware and software, it includes the process of digitization itself, research and development, data transfer, storage and delivery systems, as well as the training of personnel and the development of appropriate management systems. About ten years ago, governments and funding agencies started investing huge sums of money to encourage and support digitization. This was a useful and constructive approach, but it did not last long enough. We believe that it will take another thirty years to digitize all of our cultural heritage, assuming that levels of financial support remain the same.
Literature and sources

- Communication from the commission to the European Parliament, the council, the European economic and social committee and the committee of the regions
- Towards an integrated approach to cultural heritage for Europe
- OMC – Expert Working Group on maximising the potential of Cultural and Creative Industries, in particular that of SMEs 3 June 2010
- The (post) digital visitor: What has (almost) twenty years of museum audience research revealed?
- Using Linked Data to Diversify Search Results a Case Study in Cultural Heritage
- Enumerate Core Survey 1, 2, 3 and Thematic Survey

Agnes Wijers, 30 June 2016