

## Global Art [*PRINT*] on Demand Initiative

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### Abstract

The Art On Demand Project (AOD) has been made possible through the Art & Science Foundation of Hewlett-Packard Compaq, a group of innovative software companies and consultants, Research (C2RMF) and Education Institutions, Digital Images Publishers (RMN, Alinari,). The aim of this initiative is to establish in the most famous and well know cultural locations around the world a new selling channel point for high quality images.

### INTRODUCTION

There are many websites or Intranet hosting Art Contents. There are also very interesting initiatives such as the AMICO consortium [[www.amico.org/](http://www.amico.org/)], the ArtStor project [[www.artstor.org](http://www.artstor.org)] providing Education Institutions with high quality digital contents, specially tailored from highly reputable contents providers. There are many Internet “visible” and free sources; however, pertinent navigation in Arts digital contents is a frustrating exercise. All sites use different access techniques and Art “language” is like any other, and even more than the others, when intermixed with the user’s mind set and consumer market, search engines are not up to the task. Arts pieces (paintings, sculpture, photos, video) are now available in digital format but finding them requires tedious browsing on many websites, and the time to find eats up the time to learn and the time to enjoy.

The publishing industry produces books and prints, generally of high quality and high prices. Inventory is often limited for costs and spaces reasons, and multimedia products like CD Rom, DVD are designed for large audiences and imposed navigation. “Impulse buying” is difficult to create because of the physical constraints of large print displays. The product mix must be built in advance and cannot satisfy all market segments. Enlarging the distribution network is costly, as it requires building a large inventory of prints.

Art contents are everywhere in museums, millions of photographs stored in drawers and files, many of them are never accessed by the public. There are millions of images on the web many are buried into intranet servers, and like many artefacts, carefully stored and hidden away in Museums or Research Institution’s digital reserves.

Images are worth a thousand words, but they still need words to find them. Images, even if they are independent objects, need also to be accessed within their context, the only way, apart from direct vision is to put them in perspective and organize them into multiple sources: authors, artists, historians, writers, journalists, critics, art dealers. Cultural heritage, a mix of literature, history, philosophy, music, need also to be matched with images to be fully understood and integrated in the minds of future generations.

Global Art on Demand is a new breed of Internet service, integrating several cutting edge technologies to assist all users in accessing cultural heritage, arts and images contents, stimulate creativity and develop access to digital artefacts authorized and legal reproduction. It also includes content protection against unauthorized copying and exchange.



## SO WHY DO WE NEED NOW 'PRINT ON DEMAND'?

Art & Cultural contents are everywhere and although general purpose search engines are highly useful tools, they suffer from several drawbacks:

- They do not access 'invisible web' contents,
- They leave to the users (or their institutions) the responsibility to filter contents which might represent significant risks for young audiences,
- Results are loaded with irrelevant responses (noise) whereas users are mostly concerned by art and culture contents,
- Categorisation used to overcome noise and manage contents typologies is by itself a significant limitation to cross cultural exchange.

Print on demand is emerging. It is currently centralized, expensive and delivery can take several days or weeks. It lacks information (informative or academic) on the work, the artist, history or context, and does not satisfy expectations of all segments of interested audiences.

In most of the cases, paintings ownership, conservation, and public display are spread between different entities. All this makes digital printing activities difficult to manage up stream (what to "print") and down stream (when and where to sell and securely collect copyright fees).

Cultural institutions starve from financial resources: they are content rich and cash poor. However, even the large ones do not cover all art, culture and sciences domains, and cannot justify individually reaching interested subscribers.

In particular, museums and artists are starving for new revenues, but are not geared to build distribution networks or efficient marketing organization. Websites offer the opportunity to remotely buy prints, but buyers cannot measure the print quality from a home computer screen, and must tediously browse through multiple websites and disparate search engines.

Images and Art Education have been recognized as one of the best way to open children's mindset. Reading history, understanding foreign culture through Art exposure is also one of the best ways to balance the growing influence of video games and commercial TV shows. However, teachers and librarians face the daunting task of feeding their LAN and students PCs with affordable and dependable contents. Search engines like Yahoo or Google are offering wide access, but lack both specialization and deep search capabilities. Art Research, History, Social and Literature publishing are largely intermixed and again, university students, as well as professionals need the tool set to help find their way in Arts and Arts related contents.

The public is exposed to Art prints when s/he is in context of museum, a city or monument visit or specialized shops such as art galleries and specialized bookstores. Impulse buying is not fully satisfied because the choice is limited and carrying prints on a vacation trip is cumbersome. Home decoration, furniture stores, where someone is in the mood to buy, have very limited collection of prints (if any) and everyone ends up with the same piece. Schools and Universities need to display and show Art pieces and expose them to their students in large numbers. Aside masterpieces, prints are hard to find, and when available, hard to find and obtain from publishers.

The Art On Demand objective is to address the issues of contents availability, access and wide distribution by offering the first specialized deep Search/Access services on both text and images for arts education audiences, establish a new distribution channel through a network of workstation and printers installed at "brick and mortar" locations. These services and products will be distributed within a fully secured process, including appropriate digital rights protection and revenue distribution process as described below.



## ART ON DEMAND PRINT SERVICES

Art On Demand, AOD, has selected the best of the web art and culture contents, proposing “invisible web” contents owners to join the AOD initiative. Its finding capabilities go far beyond general purposes search engines. With more than 3 million documents and 10,000 websites, AOD is the largest single access for art and culture dedicated contents source obtaining High Quality Prints.

High-resolution images are coming to life and are produced on very high quality print “on demand”. These digital objects have great value, both for their owners and buyers. AOD provides access to high definition images from many sources and is building the “Print On Demand” franchisee Network around the world.

1. Colour Certification: The AOD network will allow users to get first quality print, guaranteed colour matching and durability certification.
2. AOD has qualified printer inks and media to insure the highest possible quality and consistency throughout the network.
3. E-Certification will insure the buyer full refund of his print purchases if colour and media deteriorate over a guaranteed period of time under reasonable exposure conditions.
4. All prints carry the invisible AOD Mark, without reducing quality and are traceable from source to post print.
5. The AOD Marks are resistant to digital images cleaning and manipulation, providing full control to the images’ owners. Their rights will be fully protected and revenue collection is fully automated.
6. Certification of the source, provide the user with full guarantee that the digital image comes from its original owner, and rights have been fully paid for private or pre-defined exhibitions. Certificate of authenticity, rights to use in education institutions will also be issued at print time.
7. Images print will also be available, not only on paper or canvas but also on all kinds of material such as textile, leather, ceramics, through the AOD Industrial Network.

Access to multiple sources will be unified through a single worldwide set of indexes, regardless databases sources formats. Search will be automatically extended to data identifiers such as Authors ID, art piece name and owner’s credit to multiple, automatically build categories and concepts, textual presentations, comments, and descriptions. Access to Art data needs a multilingual, multi-format access engine able to drive the user from its own “mind set” to the contents. The access engine must also find and display documents from many sources, linked to a contractual document to support the security and rights management process. The use of advanced linguistics almost immediately bridges the gap between existing contents and the future “linguistic web” process. This will be achieved using AOD Finder.

High definition images, for on demand single copy printing could also be found using AOD Finder. Digital rights will include both the AOD proprietary scheme or the contents owner’s choice of protection. Image for Print will be accessed through a dedicated platform and images will be distributed within a fully secured process, from Contents “source’ down to the AOD printer.

The relationship with contents providers is regulated though the indexed contents will be made available through several process and contractual relationships. They will be crawled, analysed and indexed on a regular basis. Indexing is automated and websites will be detected by AOD Editorial staff, proposed by AOD members or by site developers themselves. There is no “paid positioning” or “ranking” in AOD Indexes. Only pertinence to the query search is taken into account in the results display and AOD Editor will not apply “aesthetics” judgment. Deep filtering will be applied to detect websites containing pornographic text, racism or highly questionable contents. Those sites will not be necessarily excluded, but will be set aside in a dedicated section of the Index to prevent access by young members of the public. AOD Editorial staff will have the final word on the classification and access rules.



Publishers will be invited to either open a gateway to have their contents set up for indexing in a dedicated section or use AOD Indexing technology on their own servers and propose them to AOD users. AOD aims to search all indexes with one click. Display of the source document(s) will only be possible if the community and/or the users have subscribed to the source.

Contents publishers will also have the option to use the AOD Indexer for their own website or Intranet for “private” or internal contents. Their users will have then the option to search in both their own contents and AOD published index (free or paid).

If AOD content providers would like to provide their website visitors with instantly updated news, provide summarization services to registered users, their site can be linked to insert news watch, summarization and have their users subscribe directly for personalized services (AOD Pertinence Summarizer: Watch and News).

At this point of the description of the AOD process, we have discussed the achievement of several key objectives, all within a secure environment:

- Help find relevant contents from multiple sources
- Help fast reading and summarization of the sources

This is where the real work of the user starts: acquiring knowledge, building his own opinion and starting to produce his own publishing work: a report, school-work, memo, analysis, or simply to share with friends and family. AOD Communicator provides the “down stream” software to facilitate collection of extracts (text and images) with a simple, non-intrusive, single piece of software with a drag and drop function. Sources will be automatically documented, citations will be collected and the publication process will be greatly facilitated. AOD plans to provide several levels of the software including specialized viewers for image visualisation and extraction. The user has also the option to keep his extraction “private” or to publish them within its community.

Being part of a community (college, class, work group, company) means also to be able to exchange and share not only digital contents, but must include immediate communication. AOD communicator provides the tools to allow members to use individual and group instant messaging, IP telephony, web cam conferencing, and PC sharing, all within one click. Through the AOD dashboard, the user has access to all services in a single click: search, find, summarize, collect contents, share them and communicate with other members.

All this is done within an encrypted exchange process with on going authentication of the user. Filtering and “events” collection could be implemented to help “moderate” the entire exchange process.

Already the first AOD kiosk systems have been developed and installed; see figures 1,2,3a and 3b.





Figure 1: Example of Art on Demand installation @ Alinari Archive, Italy



Figure 2: Alinari Kiosk installation in Florence, Italy





Figure 3a

Figures 3a and b: Installation of the Kiosk @ Palazzo Strozzi, Florence, Italy, Alinari exhibition



Figure 3b



Below is a list of companies and organizations that have shown high interest in the initiative and are currently part of it. Please note: thanks to the success of the project, this list is going to grow very rapidly!

Software and hardware participating companies:

- Hewlett Packard Digital Printing
- Pertimm, (Paris, Orlando)
- Pertinence, (Paris)
- Clustone (Sophia-Antipolis)
- Validy

Contents providers:

- C2RFM
- Réunion des Musées Nationaux (Paris)
- National Gallery (London)
- Fratelli-Alinari
- Additional participants to be added later,

Universities/Education sector participants:

- Ecole du Louvre,
- ESISAR Valence (ENSIMAG group)
- DBMS School, Lycée du Parc Imperial, Centre International de Valbonne
- Centre de Recherche et de Documentation Pédagogique (Nice)
- Centre International de Valbonne
- Lycée du Parc Impérial (Nice)
- Additional participants from the Arts & Science Network

#### **AOD POSITIONING: WHAT AOD IS NOT:**

It is important to point out what AOD is not:

AOD is NOT a website: it is a seamless value chain between art and culture contents and users. AOD is a traffic driver to websites; it can greatly help in adding and building more contents (sourcing) , document interactive visits with pertinent data, even provide a very useful tool for your researchers, website designers, right management managers.

AOD is NOT a distributor of contents: the publisher remains in full control and AOD does not buy for resale or exercise editorial control. AOD does, however, reserve the right to cut access to contents with racial, religious propaganda and the like.

AOD is NOT a Digital Rights Management company. As an image owner, you manage your rights yourself or through a CISAC affiliated company, AOD will not interfere with your financial strategy or replace your DRM service vendor.

AOD does NOT buy high-resolution images for resale. Image owners set the price for a given print format, media, client's type and use. Pricing information is carried by AOD and revenues are collected by AOD without changing ownership of the contents.

AOD is NOT a software vendor; it is a service and an irrigator of Art and Culture qualified multimedia contents.

AOD Access engine: you can receive the AOD software to even run your own index on your own server and make the search capabilities available to all your contents, and keep full control of your online publishing. The software could be installed on all server platforms (Windows, Linux, Unix) it can be used as a highly powerful contents management service, or it can be linked to your existing database. Search Interfaces programme sources are provided so you can customize them for your own audience.



## ADVANTAGES OF ART ON DEMAND:

For teachers looking for education material, a publisher's team or a proven art and culture collector, AOD enables the user to locate high resolution images available for print or display, where they can be purchased from the nearest AOD affiliate or website. The customer will know that prints are coming from a legitimate source, rights have been properly processed, colour quality and durability is guaranteed by AOD and its partners.

This combination of contents collection and index publication gives contents providers the capability to serve users' communities through fine tuned strategies for service level, visibility and revenue generation. Pricing can be adjusted for the educational and professional, consumers and as the access is managed within the managed community network, the content provider will have control of the dissemination of their valuable publishing effort. Since AOD does not store the contents it acts also as a traffic builder for the content providers' websites.

"Communities" will have access through a single point to multiple sources (whether public or private) and could authorize selected users to access a hand picked selected index as well as their own contents. Teachers could have access to a larger collection, could keep their own work inside the school Intranet for their students, and before publication, parental or teaching support could be granted access for assistance, all within a moderated and managed community.

There are many valuable documents prepared for "paper publishing" now available on the web. Many of them are electronically published in PDF formats and could be lengthy. Their full display could load the network just to find that only part of the document is relevant to the search. A special feature of the AOD process will allow both "pre-process" or "post-process" of the document to automatically extract the key sentence of the documents (with the possibility to preset terms and expression for either include or exclude sentences) . Pre-process will help contents provider to automatically produce an acceptable abstract and help the user (or teacher) to prepare support documents without spending a lot of time in pre-reading sources documents.

Digital Arts access and distribution must be easy to deploy worldwide, economical to operate (servers, band with, data collection and distribution, quality and centralised financial control,) and fully secure to protect rights owners against copying or counterfeiting. AOD Communicator allows AOD Members to share published texts and images and will help "source" hosts storing the contents (the source) to securely multiply sourcing distribution points. The proprietary encryption process will ensure that images could not be copied or reused outside AOD member's communities without a full control. Clustone technology is natively compatible with IPV6 protocol.

Students and advanced amateurs will have access to the best and most complete contents index on Arts, including navigating into images for local display and low- resolution printing as well as the tool to publish the results of her/his searches. Potential buyers will find "his/her" images and associated audio/video to purchase a digital print in many locations when and where they are "in demand". Delivery will be flexible and fast, with immediate pickup or could be printed at the nearest AOD franchise point and home delivered.

Contents owner will generate new revenues stream without the pain to rebuild their text and images databases, all this within a secured copyrights and fully controlled workflow. Payments will be collected by AOD and transferred to designated accounts in a fully secured and auditable process.

A new revenue flow, using limited floor space, will be created. Break even should be achieved easily, even with limited volumes, and will not required specialized staff. A very large choice of contents will help build "local" electronic portfolios, ensure consequential rapid changes in buyer behaviour, taste, and will propose "events" based promotion.

## References

- [1] Andrea de Polo, Christina Lahanier, Jacques Misselis, Alain Minodier, Patrice Giraud, Global Art on Demand Initiative, EVA 2004 Florence