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International Conference on Integrated Information

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Preface: Proceedings of the International Conference on Integrated Information (IC-ININFO 2011)

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Aims and Scope of the Conference

The International Conference on Integrated Information 2011 took place in Kos Island, Greece, between September, 29 and October, 3, 2011. IC-ININFO is an international interdisciplinary conference covering research and development in the field of information management and integration.

The conference aims at creating a forum for further discussion for an Integrated Information Field incorporating a series of issues and/or related organizations that manage information in their everyday operations. Therefore, the call for papers is addressed to scholars and/ or professionals of the fields of Library and Archives Science (including digital libraries and electronic archives), Museum and Gallery Studies, Information Science, Documentation, Information Management, Records Management, Knowledge Management, Data management and Copyright experts the latter with an emphasis on Electronic Publications. Furthermore, papers focusing on issues of Cultural Heritage Management and Conservation Management are also be welcomed along with papers regarding the Management of Nonprofit Organizations such as libraries, archives and museums.

One of the primary objectives of the IC-ININFO will be the investigation of information-based managerial change in organizations. Driven by the fast-paced advances in the Information field, this change is characterized in terms of its impact on organizations that manage information in their everyday operations.

Grouping emerging technologies in the Information field together in a close examination of practices, problems and trends, IC-ININFO and its emphases on integration and management will present the state of the art in the field. Addressed jointly to the academic and practitioner, it will provide a forum for a number of perspectives based on either theoretical analyses or empirical case studies that will foster dialogue and exchange of ideas.

Topics of general Interest

Library Science, Archives Science, Museum and Gallery Studies, Information Science, Documentation, Digital Libraries, Electronic Archives, Information Management, Records / Document Management, Knowledge Management, Data Management, Copyright, Electronic Publications, Cultural Heritage Management, Conservation Management, Management of Nonprofit Organizations, History of Information, History of Collections, Health Information

Symposia

The Conference offered a number of sessions under its patronage, providing a concise overview of the most current issues and hands-on experience in information-related fields.

- Symposium on Integrated information: Theory, Policies, Tools
- 4th Symposium on Business and Management and Dynamic Simulation Models supporting management strategies

- Session on Open Access Rrepositories: Self-archiving, Metadata, Content policies, Usage
- Session on Evidence-Based Information in Clinical Practice
- Session on Business Management and Communication Strategies supporting Decision Making Process in Tourism Sector
- Session on Electronic Publishing: A Developing Landscape
- Session on Information and Knowledge Management
- Session on Information Content Preservation as Outcome of Conservation of Cultural Heritage: Ethics, Methodology and Tools
- Session on Advances Information for Strategic Management
- Session on Information History: Perspectives, Methods and Current Topics
- Session on Divergence and Convergence: Information Work in Digital Cultural Memory Institutions
- Session on Contemporary issues in Management: Organisational Behaviour, Information Technology, Education & Hospital leadership.

The wide range of aspects that the sessions covered, highlighted future trends in the Information Science.

Paper Peer Review

More than 300 papers had been submitted for consideration in IC-ININFO 2011. From them, 91 were selected for presentation, after peer review in a double blind review process. The accepted papers were presented at IC-ININFO 2011.

Thanks

We would like to thank all members that participated in any way in the IC-ININFO 2011 Conference and especially:

- The famous publishing house Emerald for its communication sponsorship.
- The co-organizing Universities and Institutes for their support and development of a high-quality Conference scientific level and profile.
- The members of the Scientific Committee that honored the Conference with their presence and provided a significant contribution to the review of papers as well as for their indications for the improvement of the Conference.
- All members of the Organizing Committee for their help, support and spirit participation before, during and after the Conference.
- The Session Organizers for their willing to organize sessions of high importance and for their editorial work, contributing in the development of valued services to the Conference.
- PhDc Marina Terzi for her excellent editorial work, contributing in the production of the Conference proceedings.

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Dionysis Kokkinos, National Technical University of Athens

KEYNOTE SPEAKER

Professor Amanda Spink

Professor Amanda Spink has published over 340 scholarly journal articles, refereed conference papers and book chapters, and 6 books. Many of her journal articles are published in the Journal of the American Society for Information Science and Technology, Information Processing and Management, and the Journal of Documentation. She is Editor of the Emerald journal Aslib Proceedings. Amanda's research has been published at many conferences including ASIST, IEEE ITCC, CAIS, Internet Computing, ACM SIGIR, and ISIC Conferences. Her recent books include Information Behavior: An Evolutionary Instinct and Web Search: Multidisciplinary Perspectives, both published by Springer. Amanda's research focuses on theoretical and empirical studies of information behavior, including the evolutionary and developmental foundations. The National Science Foundation, the American Library Association, Andrew R. Mellon Foundation, Amazon.com, Vivisimo. Com, Infospace.com, NEC, IBM, Excite.com, AlltheWeb.com, AltaVista.com, FAST, and Lockheed Martin have sponsored her research. In 2008 Professor Spink had the second highest H-index citation score in her field from 1998 to 2008 [Norris, M. (2008)]. Ranking Fellow Scholars and their H-Index: Preliminary Survey Results. Loughborough University, Dept of Information Science Report].

Information Management as Establishment Dutch Navigational Knowledge on Japan, 1608-1641

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Abstract: *I examine some topics concerning knowledge management through the activities of the factory of the Dutch East India Company in Japan. I use Dutch archival materials to show the movement from the tacit dimension of knowledge to concrete, written forms. I focus not only on the collection of data, but also on the methods of dissemination and usage of the collected information, and the connection between these dimension and the organizational structure of the Company.*

Keywords: *Dutch East India Company, Early modern history, Information history, Information management, maps.*

I. INTRODUCTION

The Dutch East India Company (VOC) was a new actor in Asia at the beginning of the 17th century, and this fact left its mark on its stock of available knowledge. However, the 1620s and the 1630s brought significant transformation of Dutch navigational knowledge. The European side of management of Dutch navigational knowledge touching Asia in the 17–18th century (that is the activities of the Hydrographic Office of the VOC) is well known from the thorough study of Günter Schilder (1976). Kees Zandvliet (2002) provides a similarly exciting review of the activities of Asian hubs of the VOC. His text, besides allowing insight into the work of the cartographic workshop in the primary Dutch base, Batavia, details the role of a mid-level centre, Taiwan, too, in completing such tasks. At the same time much less data is available on the bottom levels. My paper intends to improve the situation in this respect and as such it is basically a case study. My main emphasis is on the role of a unit at the lower part of the organizational hierarchy in handling navigational information: I examine what part the VOC-factory in Japan played in a special segment of the information management of the Company.

II. METHODS

A. Primary Aims

Work in factories and on ships included different information-related activities, therefore the simultaneous examination of these two spheres can shed light on both general topics – such as the various sides of information handling – and on such concrete and individual historical details that have not received enough attention. On the one side, I implement a problem-centred approach. This provides wonderful opportunity to detail some "timeless" problems (and especially their manifestations) that appeared in most historical eras. I will examine such topics like the expansion of the pool of information available to actors (mainly its coordination) or the multiplication, dissemination and sharing of information collected and "shaped into proper form". The events, for example, show perfectly how different stations of the knowledge handling process were based on each other: starting with a problem and the birth of an idea, through the collection of data, up to dissemination of acquired information in the system. Such examination may show how these issues took shape in the early modern era, how they were answered, and may even serve as raw material for a broader research on the history of information-related phenomena.

At the same time, I try to give better insight into some minute details of the information system of the VOC. The profound examination of the Japan factory helps with this, since it reveals additional tiny particulars of Dutch presence in Asia. A description of the Japanese situation highlights how specific the Dutch information-system could be in different regions and allows some comparisons. For instance, Zandvliet (1998) applied a well-structured model on Dutch cartographic activities on Taiwan. However, the chronological stages described in his paper were based largely on Dutch military power exercised there. The situation was fundamentally different in Japan. The Dutch had no similar power in Japan at all, and this characteristic made a fundamental impact on specifics related to navigational and cartographic knowledge, too. To sum it up: my other aim is to present one – slightly special – of the many faces of the information-system of the Dutch Company. This can be all the more important, because such an analysis allows highlighting and emphasising many not trade-related activities in this Dutch factory, too.

Last, one terminological issue should be mentioned. I try to focus not only on cartographic knowledge (though probably this is the most concrete and obvious portion of the stock of knowledge in question), but on a slightly different category: navigational knowledge. I lay bigger emphasis especially on the unwritten – accordingly, in the sources often invisible – dimension. Within this, I will try mainly to grab the role of "experience", which – despite of the constant expansion of cartographic knowledge – had paramount importance even on ships of the mid-17th century.

B. Available Sources

Making up an idea of the role played by the Japan factory in its first one and a half decades concerning

cartographic and navigational matters, due to lack of primary sources, is a difficult task. The majority of the Dutch correspondence is still available in the archives, but before 1625 it has very big gaps, and there are hardly any available sources for the years before 1623. The majority of the letters that can be consulted today was written after that year. Between 1629 and 1633 there was another nadir, but this was the result of a temporary deterioration of Dutch–Japanese relations (the so called *Nuyts-affair*, a serious clash with Japanese authorities). However, after this period a huge corpus of sources –supported even by Dagregisters held in Japan (1974), Taiwan and Batavia – is available. Accordingly, I can present a more detailed picture on the 1630s.

III. JAPAN IN THE VOC SYSTEM

The establishment of the VOC-factory, seated in *Hirado*, South Kyushu, in 1609 should be viewed in a given geopolitical constellation. It was not only a commercial centre: the Dutch used it mainly as a base in their war against Portugal and Spain. Logistic tasks of the factory were as important as commercial or economic ones. Japan played a role as a centre providing support for ships operating in the South China Sea region, and the Dutch exported much provision and war materials from the country. Exporting foodstuff from Japan and founding guns and metal accessories of ships played significant role in the wars of the Dutch. At the same time, the country was used as a base for military (often privateering) operations. It played an equally important role in careening ships, and only the Nuyts-affair altered this.

Things started to change in the 1620s. The factory in Hirado slowly transformed into a fundamental element of the Dutch – especially intra-Asian – commercial system. First, Japan was less and less able to fulfil its mentioned role as a naval base. The shogun in 1620 prohibited the export of weapons and Japanese persons, which was a severe blow to this role. Careening ships was no more possible in Japan around the end of the 1620s, and was held no more economical in the 1630s. On the other hand the factory became more and more important economically. By 1633, Taiwan evolved into a very important commercial centre, so the volume and profitability of Dutch traffic from Taiwan to Japan increased firmly. The other primary partner region was Batavia, which played crucial role as the headquarters of the VOC-system in Asia. Wares from Europe and other parts of Asia reached Japan usually through this town.

IV. DUTCH CHARTING ACTIVITIES IN JAPAN

A. A Problem to be Solved

Emphasising that "experience", unwritten knowledge was very crucial in the second half of the 1620s seems to be a good starting point. Sources before 1625 contain only few mentions on maps of Japan, though this of course does not mean that maps or navigational aids were completely missing. This relative absence of references rather suggests that – in this period at least – only few difficulties or questions to be solved arose concerning such written aids. There are many more references to experience-related issues. The phrase "experienced pilot" appears many times, usually in a context describing how desperately such experts were needed. If we try to specify the underlying meaning of the term, it seems probable that the authors of these letters comprehended "experience" as tangible knowledge relating to a more or less definable region and to specific details of the area in question. That is, experience meant acquaintance with concrete situations and issues "around here", in a given territory.

The question of experience, however, most often appears in a different way: through references to inexperience (that is lack of experience) and difficulties resulting from that want. The need for experienced specialists in Japan became more and more imperative, especially after the middle of the 1620s. While in the first decade of the factory there were even such years when no ship arrived at Japan at all, in the middle of the 1630s usually 7-8 Dutch ships visited Japan in a year, and in the end of the decade this number stayed steadily above ten. This was of course happy news from the viewpoint of trade, but these ships had to be manned with experts having the necessary knowledge (that is of Japanese waters) to conduct these voyages. This did not go smoothly at all. Another – Japan-specific – factor made the situation especially serious. An edict of the shogun prohibited local barks to meet Dutch ships arriving at Japanese coasts. The order may have caused serious confusion above all because Dutch ships seem to have used local experts extensively as guides. Open water navigation was more or less a routine and was supported by charts and rutters as well, attention especially was required when ships reached their target region. The exact locations of the places sought or safe havens had to be found on the – not necessary familiar – coastline; possibly dangerous parts or currents had to be avoided, and so on. If the pilot of a ship had not ever visited Japan and was not acquainted with the region, the result could easily be a series of "inconveniences".

We find many references on difficulties originating from lack of proper navigational knowledge. Sometimes even reaching Hirado could be a serious challenge. In 1634, for instance, the navigators of the *Venloo* and the *Schaagen*, who had not been to Japan earlier, thought they were in Hirado – though they reached only the coasts of Satsuma, which is quite far from the town. After reaching Hirado calling at port still could be a challenge. Not only an underwater reef made this task difficult, but a strong current in the bay, too. They got a ship into a serious jeopardy in 1627, which grounded on some clips of rock. The writer of the letter describing the incident held it important to highlight that neither the commander of the ship nor the navigator had visited Japan earlier, thus they did not know the place.

B. Possible Answers

So, dangerous emergencies originating from lack of experience were not at all rare even in the 1630s,

despite of the fact that the Dutch factory had a past of a quarter of a century by then. Dutch decision-makers noticed these problems. They could consider many ways to improve the situation. "Teaching" specialists and endowing them with the necessary knowledge presented itself as an obvious solution. Considering the nature of the task, this could happen mainly through practice. For example, in 1625 the cape merchant sent an "experienced" pilot to Taiwan on board of a Japanese ship. The cape merchant charged the pilot with taking good notice on every detail, and after reaching Taiwan he had to give an account to the Governor there. This kind of learning, however, was not a consistent strategy. "Lending" pilots does not seem a completely unique practice in these early years, but such situations more often were taken as inconveniences, so had to be avoided.

The situation could be improved (instead of getting more information) with bettering the distribution of available knowledge, too. In practice it meant that specialists with necessary expertise were stationed in primary centres, visited ships in distress if necessity required, and guided them to safety. On Taiwan sending out ships to meet those that just were arriving from Batavia or Japan was a regular practice. The Hirado factory, too, got such experts in the 1630s. The two most famous were Frans Visscher and Matthijs Quast. Nevertheless, none of them were especially sent to Japan to solve such situations, but had different assignments.

These methods, however, were not perfect, and could not be used for a longer term. Teaching specialists through sending them on voyages required very much time and resources; moving experts was slow, and there were never enough of them around. Finally, the most perfect solution was "untying" knowledge from individuals, and making it accessible on material carriers.

Demands on new maps appear in the second half of the 1620s first. The head of the Hirado factory highlighted the problem detailed above first in 1627. The letter contains several interesting details. The mentioned edict of the shogun, which prohibited local barks to meet arriving Dutch ships, explains the exact timing of raising the problem. The Dutch practice of relying on local people – an effective method at first sight – gives a reason why the Dutch had not made any effort at all to reconnoitre the coasts of Kyushu and why such an expedition had not even been suggested at all. Besides, it accounts for the detail why the Japan factory advised the project. The merchant – as a reaction to the new situation – suggested sending a navigator to Japan to survey the broader neighbourhood of Hirado (concretely the regions of the Goto Islands, Arima and Satsuma). He argued that the project did not involve heavy expenses, since only one person had to be sent over. This supports again the idea that the ignorance of making detailed charts was not due to financial reasons. However, the proposal – mainly as a consequence of the Japanese-Dutch conflict developing at the end of the decade – was dropped, and even a letter sent in 1634 from Batavia refers to the region in question as unknown.

Similar plans appeared again in 1633, but this time different demand was in the background, so a different place had to be examined. In earlier years moving the factory from Hirado had come up several times. This time a special *Ki no Kuni*, in the vicinity of Osaka was brought up. Drawing a map on the place was not touched upon, the documents prescribed only "discovery". Parallel with this, the former project of the collection of navigation-related data and the reconnaissance of the seas around Japan was not mentioned at all. Examination of the site finally took place in the beginning of 1634, but the Dutch – probably due to lack of shipping experts – could not establish if the harbour was suitable for bigger vessels or only for barks. Thus, satisfactory closure of the case was delayed. Meanwhile charting the region of Goto and Arima became timely again. The merchants had to choose between the simultaneous projects. The council in August judged the discovery of Ki no Kuni secondary, and finally in the autumn of 1634 totally abandoned the idea.

The background of the new plans to map seas around South Kyushu was still the same: dangers originating from lack of knowledge of navigators of ships arriving in Japan. The question was brought forth again only in 1634. A pilot set off in June to collect data on the waters near the Goto Islands and to make a map of the region. However, the expedition had to turn back after few weeks since the regents there, after getting acquainted with the purpose of the Dutch ship, commanded her to leave forthwith. The Dutch reluctantly returned to Hirado. Not long after this failure, following the urge from Batavia, another try was decided on. The Dutch acquired an even stronger letter of recommendation from the lord of Hirado. Nevertheless, all this was in vain. The point of view of the regents of Goto did not change at all. Some places, regardless of the rejection, were charted, so the enterprise was not a total failure. However, surveys around Goto came to an end.

The voyages of discovery continued, but new places were put in focus. In 1635 two Dutchmen mapped the territories and islands north of Hirado. In 1636 steps were taken to find another port instead of Hirado. A bay not far was surveyed: experts finally visited it, drew a large-scale map of it, "took its depth at every point", but the results showed that transferring the factory to this new port would not have been an especially advantageous move. This was the last Dutch expedition in the period examined. The pilots who played crucial role in gathering the data soon left Japan. Collecting data however was only the first step of solving the problem.

D. Multiplication and Dissemination

The first mention on the "new map of the coasts of Japan" appeared in a very short time after the mentioned expeditions. A letter sent to Europe in early 1635 had the map of Goto attached. In the same year, this new map of Goto found its way back to Japan. It was even used during the voyage. After this, maps on South Kyushu regularly appear in documents. So, in the second half of the 1630s not only mapping expeditions were abundant in Japan, but – based on the information gathered – many maps were drawn also, especially on the regions that were crucial for safe coming and going of ships. However, one additional task still had to be done. The charts had to be present on all ships visiting Japan.

First of course, a number of maps had to be created through copying the original one. It is interesting that making copies did not take place necessarily in the cartographic workshop (in Batavia) and was not done by all means by professional "chart-makers". The Japan factory played significant role in copying maps, though this time not merchants, but officers of ships had tasks to do. In directions given to ships moving from Taiwan to Japan duplicating maps (of both Japan and Taiwan) – according one order in 3-4 pieces – appear, that this activity was widespread in the second half of the 30s in the factory. They provide interesting contribution concerning division of labour also. Maps were made in Batavia, but the much more mechanical duplicating works were assigned to lower levels of the hierarchy. The Taiwan centre often sent all copies of a specific map to Japan, and kept none by itself. Copies had to be made after the original one. After that all copies were to be distributed among ships, and the source map had to be sent back to Taiwan.

Dissemination of maps appears first in 1634, too, supposedly because the first new maps to be distributed were made then. Here some notes on the usage of maps are in order. Some ships reached Japan directly from Bantam, but many more arrived from or via Taiwan. Consequently, maps depicting coastlines and seas around China and Taiwan popped up in the factory as often as those of the South Japanese islands. The direction of movement of ships was a very important factor in the process of distribution. Maps of the destination areas were especially important, and navigators were provided with these immediately before setting off to the trip. Pilots, however, were allowed to keep these maps by themselves until they needed them – that is the termination of the voyage in question. The distributive actions at the Japan factory aligned to this structure.

The practice of moving maps around was fixed in the middle of the 1630s. The first mention of maps of Goto, Hirado and the Japanese waters given to navigators is from 1635. Navigators received these maps in Taiwan, and – since seemingly they were not needed any more after successful arrival – had to hand down them in Japan. After that, merchants sent those maps back to Taiwan, in order to provide next year's ships with them. At the same time, several maps of the China coast travelled on the ships heading for Japan, too, but they were handled separately. The cape merchant had to have made copies of them and then he had to distribute the new maps among ships heading for Taiwan. Moreover, according to indications, navigators had only the maps of their destinations with them. All other charts – which apparently were not used on the voyages – travelled in the batch of the general documents (letters, accounts etc.), usually in the custody of a merchant. The fact that the orders given to the cape merchant at Hirado always detailed and emphasised collection of maps of Japan, while concerning Chinese maps no such directions can be found, hints again that latter ones were not with the navigators.

V. CONCLUSION

The events I described are the in connection with a transformation of the VOC in the 1630s. This was not confined to cartographic issues; a background structural change is highly probable. Access to goods was one thing, but a solid information background was necessary to be competitive, too – and this was built and enhanced in the 1630s. Thanks to these changes, movements of ships became more predictable and the details of the system could be more accurately forecast. The mentioned change of handling and acquiring of navigational knowledge fits in this picture perfectly. Van Dyke's (1997) example for this is bookkeeping, but several other, at first glance not necessarily related aspect of this change can be traced. The transformation of the mapmaking practices of the Company I detailed in this paper is one of them. It was not only – and maybe not even primarily – a question of quantity. The first maps created in Asia can be dated to the early 1620s and showed mainly zones of military importance. The situation, as the case of Japan shows, changed dramatically in the next decade. Several other – less striking – indicators and aspects of this change can also be highlighted. One is the movement from tacit knowledge towards the use of more objective, more material, more exterior "containers". And if we focus on an even more general level, especial emphasis was put on *systematic* collection of data, which seems to indicate an altered mentality. That is, the topic of this paper should be handled not as a separate phenomenon, should not be treated in itself but as a part of a bigger transformation, as the rearrangement of the information patterns – and within this: the infrastructure – of the VOC.

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