

# Digitization of the 17th and 18th Centuries' Dutch East India Company (VOC) Archives for The Archives' Preservation <sup>†</sup>

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**Abstract:** This study discusses the process of digitizing the Dutch East India Company (VOC) treasures archive from the 17th century to the mid-20th century during the Dutch East Indies colonial government (1818–1942). This VOC archive has been recognized by UNESCO as a world historical heritage, namely, the Memory of the World Register, in March 2004. The National Archives of the Republic of Indonesia (ANRI), as a national archival institution, is responsible for opening these archives online for the public, students, scientists, and all those in need around the world. Therefore, it is necessary to carry out a digitization process for easy access to the VOC archives. The purpose of this study was to see how the process of digitizing the VOC archives was carried out and what obstacles were encountered in the process. This research method uses a qualitative approach with a case study method through a narrative description of data analysis that focuses on digitizing activities carried out by the ANRI, especially in the Reproduction and Archive Digitization Sub-Directorate. Data were collected through observation of digitization activities, interviews with archivists involved, analysis of digitizing documents, and literature studies. The results that can be reviewed are the process of digitizing the VOC archives, starting from the archive identification stage, metadata preparation, archive digitization, digitizing quality control, digital archive storage, and making reports of the activity of digitization. The digitized archives are presented on the website of “Sejarah Nusantara-Arsip Nasionalthat”, which can be freely accessed by the public. The conclusion obtained is that the digitization of the VOC archives has been carried out well according to the standard procedures previously established and the practice theory of archive digitization in general.

**Keywords:** archives digitization; digital archives; VOC archives



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## 1. Introduction

The VOC was formed in 1602 from the merger of six small companies. Among all of the trade unions that existed in the 17th and 18th centuries, the East India Company (VOC), founded in 1602, must have been the most successful because it succeeded in getting rid of the Portuguese, who a century earlier had built a trading empire in Asia, and almost eliminated rivals in the Asia–Europe trade at the time. At the end of the 17th century, the East India Company (EIC), which had been founded in London in 1600, developed as a major rival to the VOC; however, in the end, in 1800, the VOC remained the largest trading company operating in Asia [1].

### 1.1. VOC Journey in Indonesia

In the 16th century, European expeditions to Africa and Asia were in search of the most saleable commodity at that time, namely, spices. The Dutch were no exception, and financed the first expedition led by Cornelis de Houtman. On 23 June 1595, Cornelis de Houtman first arrived in Banten. However, his main goal was to go to Maluku to obtain

spices, namely, cloves and nutmeg. In the span of 1695 to 1601, the number of ships sailing to Asia increased to 65 ships. Companies in the Netherlands were competing to send their ships to Indonesia; this period is also known as the “gold rush” [2]. In Maluku, several Dutch trading companies also had to compete with other European trading companies that had already existed, such as the Portuguese, Spanish, and the toughest British competitors. In order to prevent more competition, the Staten General (supreme government in the Netherlands) invited the companies to form a single company. They agreed to form a VOC, which had a monopoly on Dutch trade and shipping in Asia. After the VOC was formed in 1602, more ships began shipping to Asia. The VOC had the right of Octrooi to be the sole player in Asia. This right also allowed the VOC to declare war on behalf of the highest government in the Netherlands. The VOC also had the right to enter treaties with local rulers in Asia. These rights allowed the VOC to establish trading posts, build forts, form troops, and appoint its employees as administrators in Asia. The trading areas and administrative posts of the VOC were led by the Governor-General. The existence of this Octrooi right made the VOC’s authority, which was actually a company like a state [3].

In 1619, one of the Governor-Generals of the VOC, Jan Pieterszoon Coen, succeeded in seizing Jayakarta from the Banten Kingdom and establishing the port city of Batavia [4,5]. In 1621, the VOC made conquests in the Banda Islands in the Moluccas to gain a monopoly on the clove and nutmeg markets. After conquering Banda, the VOC’s power slowly began to widen and carried out other conquests in the archipelago. In 1669, the VOC became the richest company at that time with the ownership of more than 150 merchant ships, 40 warships, 50 thousand workers, 10 thousand mercenaries, and up to 40% dividend payments. The VOC was the first modern company in the world to raise funds from the capital market, as well as the first company listed on the stock exchange, and became the largest company with the largest capitalization at that time [6,7].

After operating for approximately two centuries, in 1799, the VOC was dissolved by the Dutch government. Corruption became the main cause of the collapse of the VOC, and VOC cash was drained to finance the war, and trade routes were damaged by the war. All debts and assets owned by the VOC such as forts, warehouses, administrative offices, and of course the trading power areas were taken over by the Dutch government [8]. These territories and assets that existed in Indonesia were then continued by the Dutch East Indies colonial administration from 1800 to 1942. In 1942, the Dutch rule in Indonesia began to be taken over by Japan.

### 1.2. VOC Archives in Indonesia

The VOC assets that were taken over by the Dutch government also included the archives that were held during the VOC’s existence. The history of the VOC archives described by Balk, Dijk, and Kortlang [9] began during the *Hoge Regering* (great government) era. The war situation that occurred in the 1620s caused almost none of the documents in the era before 1620 to be preserved. On 29 July 1641, the *Hoge Regering* appointed a commission under J. Maetsuycker who served as Secretary of the *Road van Justitie* (Council of Justice) to examine the old papers kept in the Governor-General’s office. The maintenance of the archive was the responsibility of the chief clerk of the *Generale Secretarie* (General Secretariat).

In 1770, an inventory and archive list of all archives created was made with the aim of facilitating the shrinkage of archives that would be destroyed due to damage caused by termites, insects, and other destructive animals. In 1781, parts of the archives which had been damaged by insects were once again cleaned. On 8 May 1801, the *Hoge Regering* set up a commission to review government archives and libraries. The commission recommended that unused documents be destroyed, including incoming letters from the branch office, attachments to resolutions from 1678 to 1797, and documents from the Director for the Construction of Forts, Buildings, and Waterworks. However, the new inventory received in 1806 did not provide a sense of satisfaction for the *Hoge Regering*.

Based on a decision dated 19 February 1819, the supervision of the old archives became the direct responsibility of the *Algemene Secretaris* (Principal Secretary). This decision was in effect until the appointment of J.A van der Chijs as *landsarchivaris* (State Archivist) in 1892. In 1819, a decision was also issued to move the old Dutch archives from the Governor's Building in Molenvliet located on Jalan Gajah Mada, to the attic of the supply warehouse (*Ooster- en Westerpakhuizen*) in the city area. In 1825, D.A Tempel (Archival Clerk) succeeded in compiling an inventory list of the moved archives.

At the end of March 1872, the Governor-General appointed a commission under the leadership of N.P. Van den Bergh with the task of conducting research on the historical value of the government archives stored in several warehouses. As a result, archives were divided that needed to be depreciated, made permanent, and moved to one of the buildings belonging to the Bataviassch Gennotschap in Koningsplein, located in Medan Merdeka. On 18 January 1892, by the governor's decision, Van der Chijs was appointed the first *Landsarchivaris* (State Archivist) of the Dutch East Indies.

In 1925, the archives were moved to the new *Landsarchief* building located on Jalan Gajah Mada, which used to be the residence of Governor-General Reinier de Klerk (1777–1780). The top floor that used to be a place for the slaves in the house was turned into a depot for storing archives. In July 1947, Ph.E. Coolhaas, a State Archives Officer, returned to take care of the archives. He carried out this task until the handover of sovereignty was carried out in 1949. Since then, the archives from the VOC period have been managed by the National Archives of the Republic of Indonesia (ANRI) located in Jalan Ampera Raya, South Jakarta. Currently, the ANRI maintains a total of 15 VOC archive inventories, namely [10]:

1. The High Government (Hoge Regering) 1612–1812.
2. The High Commission (Hoge Commissie) 1791–1799.
3. The General Audit Office (Algemene Rekenkamer) 1808–1811.
4. The Court of Justice (Raad van Justitie) 1620–1809.
5. The College of Aldermen (Schepenenbank) 1620–1809.
6. District Council (Heemraden) 1664–1809.
7. Governors of Orphanages (Weeskamer) 1624–1885.
8. Trustees of non-European Deceased Estates (Boedelkamer) 1640–1885.
9. Loan Bank (Bank van Lening) 1746–1808.
10. Auction Office (Vendukantoor) 1737–1776.
11. Opium Society (Amphioensocieteit) 1745–1808.
12. Notary Records (Notarissen) 1621–1817.
13. Church Records (Kerken).
14. Birth, Marriage, and Death Records (Burgerlijke Stand) 1616–1829.
15. Nicolaas Engelhard (1750–1832).

These archives are divided into the archives of the great government (Governor-General and members of the Dutch Municipal Council in Asia) and the archives of private and public institutions in Batavia. The number of these archives reaches 2.5 km.

### 1.3. Archive Digitization

In this paper, the focus is on digitizing archives, not on archives' digitalization. To understand these two terms, let us look at their definitions. According to Gartner's IT Glossary [11], "Digitization is the process of changing from analog to digital form", while "Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities". Savic [12] also explained that digitization is the process of converting analog data to digital data in various formats such as TIFF, JPG, PDF, and others. This conversion provides other benefits, such as usability, the speed of access, transferability, and the possibility of further processing. There are several challenges of digitization, such as the volume of potential materials to be converted to a digital format, the provision of proper storage facilities, and adequate access to this facility by external users. Security and privacy has become part of the regular technical and management

agenda that has to be taken into consideration. Meanwhile, according to Savic, digitalization is related to how the name of a business process is made in digital form, meaning that this business process is automated, and data and information processing occurs in the process. Digitalization has three distinct phases: the initial phase, when single operations or processes are automated (such as library purchasing); the mid-phase, when related processes are automated and joined together (such as library collection management or supply chain management); and the third, most complex phase, when multiple systems that support business processes and information flows are integrated into library management systems or enterprise management systems.

From the explanation above, if it is related to archives, it can be understood that digitalization will touch on archive management overall, meaning how archives are created, used, stored, and managed digitally. Or, it can be said that archive digitalization is when all archival processes are completed digitally, and even archives are created from the beginning in digital form (born digital). Meanwhile, digitization relates to how conventional archives or physical archives are paper archives with many volumes being converted into digital form. In ISO 13028:2010 Information and Documentation, and Implementation Guidelines for the Records Digitization [13], it is explained that archive digitization activities are the process of converting hard-copy archives or other non-digital forms, into digital forms, such as digital photography of non-digital archives or non-digital archival imaging (better known as scanning). The process of digitizing the archive is not as simple as the scanning process. There are several stages of digitization that must be completed. In the Federal Agencies Digitization Guidelines Initiative [14], the stages of archive digitization are divided into four, namely: project planning for digitization, processes occurring prior to digitization, digital conversion, and post digitization work. This paper will examine the process of digitizing the VOC archives of the 17th and 18th centuries carried out by the ANRI into these four digitization stages.

## 2. Method

This study uses a qualitative approach that emphasizes explanations in a narrative description with a case study method on the VOC archive digitization activities carried out by the ANRI, especially at the Sub-Directorate of Reproduction and Archive Digitization. According to Rahardjo [15], a case study is a series of scientific activities carried out intensively, in detail and in depth about a program, event, and activity, either at the individual level, a group of people, institutions, or organizations to gain in-depth knowledge about the event. Usually, the selected events, hereinafter referred to as cases, are real-life events that are currently ongoing. The research subjects are archivists who are involved in the Sub-Directorate and in archive digitization activities. The location of the research was carried out at the National Archives of the Republic of Indonesia. Supporting data are needed to complete the narrative description. As revealed by Yusuf [16], a data analysis on a qualitative approach is mostly conducted in a narrative manner. Therefore, data collection in this study was carried out by means of observation, interviews, and document analysis related to the digitization process.

Observations were made by observing the implementation of the VOC archive digitization activities. Interviews were conducted in depth, both one-on-one and in focus groups. The selection of informants was considered based on their involvement in the digitization process. From these considerations, a number of informants were determined who were included in the content team, storage team, and scanning team. Meanwhile, a document analysis was carried out on the VOC archives owned by the ANRI, and the guidelines from the ANRI and international institutions collaborating with the ANRI on the digitization project. After the data were collected, an analysis was carried out to describe how the digitization process was carried out in four digitization stages according to FADGI.

### 3. Result and Discussion

#### 3.1. VOC Archive Preservation with Archive Digitization

After Indonesia's independence in 1945, the ANRI inherited a large number of archives from the 17th to the middle of the 20th century, dating from the VOC period and the Dutch East Indies colonial period (1818–1942). All these archives were kept and managed by the ANRI with care and attention. From 2000 to 2007, the archives of the VOC period were accessed in the form of an archive inventory in collaboration with the National Archives of the Netherlands and the University of Leiden. The VOC archives have been recognized by UNESCO as the Memory of the World Register in March 2004. Thus, the archives have been protected and recognized internationally as a world historical heritage site.

The ANRI, in collaboration with The Corts Foundation (TCF), created a digital archive system project called the Digital Archives System at ANRI (DASA) starting from 18 May 2011 to 19 October 2017. This involved digital data by digitizing activities and preserving, decomposing, and creating metadata that represent the archive. To date, more than 1.1 million copies of scanned VOC archives are stored digitally for the long term and can be accessed through the website [www.sejarah-nusantara.anri.go.id](http://www.sejarah-nusantara.anri.go.id) (accessed on 10 October 2022).

This digitization activity was mandated to the Sub-Directorate of Reproduction and Digitization of Archives at the ANRI with the main aim of reducing physical contact with the original physical archives; because the VOC archives' treasures have been designated as the Memory of the World Register, they need to be physically preserved as the contents of the information. This is not interpreted as closing access to the original physical *archive*, *but* reducing physical contact, considering the physical condition of the archive which is vulnerable to damage if it is frequently touched and cannot be replaced if it is badly damaged. Therefore, this digitization activity is a preservation activity to preserve the VOC archives.

#### 3.2. Archives' Digitization Stages and Process

The digitization process in ISO 13028:2010 [13] regarding information and documentation—implementation guidelines for digitization of records, can be categorized into two types: the first is business-process digitization, meaning that digitization is a routine activity and part of daily business processes, and continues to be carried out. Both digitization projects mean digitization is carried out as a mass project for important valuable archives. In the Federal Agencies Digitization Guidelines Initiative (2009), the digitization project is a complete process that includes:

1. Selection;
2. Appraisal;
3. Priority;
4. Project management and tracking;
5. Preparation of archives for digitization;
6. Collection and creation of metadata;
7. Implementation of digitization;
8. Quality management;
9. Data collection and management;
10. Storage of digital resources on the repository system;
11. Digitization assessment and evaluation.

If viewed in the four major stages of the digitization flow, the archive digitization process can be grouped as follows:

1. Project Planning Digitization

Project management and tracking: team building, workflow, and cost and time estimation.

## 2. Processes Occurring Prior to Digitization

Selection of archives and non-archives, assessment of archives, priority archives, preparing archives, and collection and creation of metadata.

## 3. Digital Conversion

Implementation of digitization using special personnel, as well as special places or tools (scanner software and hardware). Metadata management and storage.

## 4. Post Digitization Work

Quality management. Assessment and evaluation of project activities.

### 3.2.1. Project Planning Digitization

The planning for digitizing the VOC archives at the ANRI is carried out by making workflow management based on the Regulation of the Head of the National Archives of the Republic of Indonesia Number 23 of 2011 concerning Static Archives Preservation Guidelines, and Operational Standards and Procedures Number 93 of 2016 concerning Transfer of VOC Archives to Digital (in collaboration with the ANRI and The Corts Foundation). Other related guidelines such as the Archives Act, Government Regulations, ISO Guideline for Digitization, and other national or international standards for records and archives' digitization such as metadata and format standards are also prepared.

Furthermore, the formation of a team consists of a content team (archivists at the Directorate of Processing), a storage team (archivists, archive analysis, or archive institutions at the Directorate of Storage), a restoration team (archivists, archive analysis, or archives institutions at the Restoration Sub-Directorate), and a scanning team (archivists, archival analysis, or archival institutions at the Directorate of Reproduction). The cost and time of this process are adjusted to the number of files to be digitized and the cooperation contract between the ANRI and The Corts Foundation.

### 3.2.2. Processes Occurring Prior to Digitization

In processes occurring prior to digitization, the digitization team selects and evaluates the archives to be digitized. This selection and assessment include the physical condition of the most fragile archives, the value of the most important (vital) archive information, and the frequency of archives that are most frequently accessed or borrowed by archive users. Next, one must prepare and identify the metadata required for digitization. Based on the technical guidelines of cooperation between the ANRI and The Corts Foundation (TCF) on Metadata in the Digital Archives System at ANRI (DASA) Version which was approved in February 2012, the metadata created and used during the digitization of the VOC archives were adopted from the ISAD standard (G), ISAAR (CPF), and ISDIAH by the International Council on Archive (ICA), and then adapted to the PREMIS standards of the Library of Congress and Encoded Archival Description (EAD) by the Society of American Archivists.

These metadata are integrated and form the DASA metadata, namely:

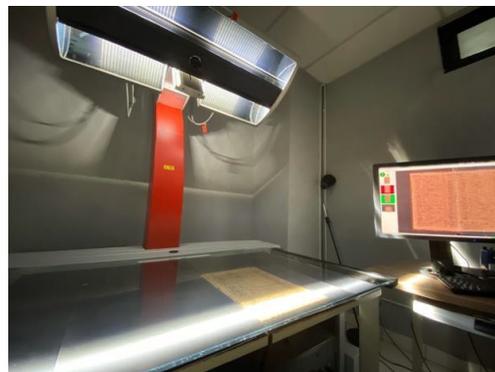
1. Identification: unique identifier;
2. Creation: name and history of creator, timetable of creation;
3. Context: identifier and description of higher level;
4. Content: archival description, language, summary, related units;
5. Legal Matters: authority, mandates, and responsibilities. Institute Archival Holding. Copyrights and other legal rights;
6. Preservation: whereabouts, limitations for use, and loans;
7. Financial matters;
8. Source of metadata: creator of metadata;
9. Submission: date of submission;
10. Dissemination: date of dissemination;
11. Quality assurance: date of quality check.

In this stage, the team also prepares the archives to be digitized by handing over the archives with the minutes containing the archive list. Then, they prepare digitization equipment such as scanners, computers, and digitization software. The type of scanner used is the Zeutschel Overhead Scanner OS 14000 A1 LS type which is suitable for scanning fragile archives and meets the quality standard of scanning results, which is 600 dpi 24-bit color. The software used is open source Windows for folders on the computer, and the Adobe Photoshop application to edit the scanning results.

### 3.2.3. Digital conversion

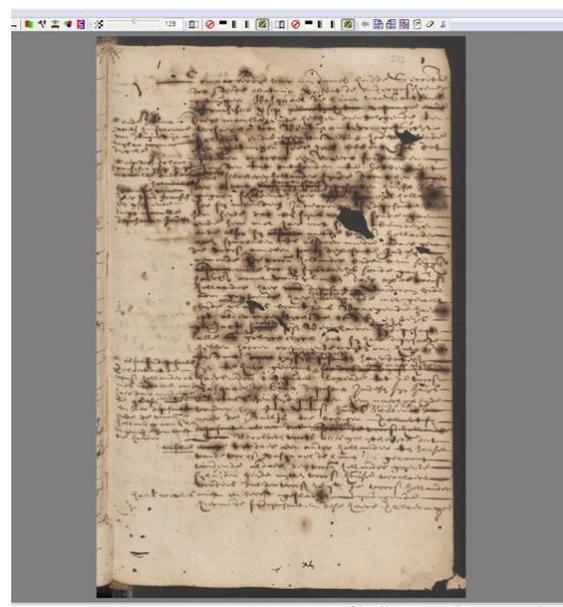
Digital conversion is carried out by the scanning team by placing the archive sheets on the scanner and performing the scanning process.

In Figure 1 you can see the Overhead Scanner used to scan. The room is intentionally dim so that the scanner light can focus on the scanned archives. The archive is placed on the scanner pad and the scan results will appear on the computer screen on the right side of the scanner.



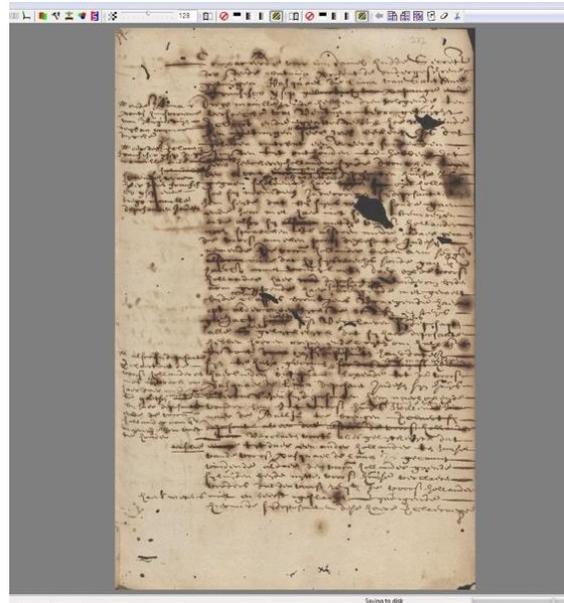
**Figure 1.** Scanning process.

The digitized archive of the scanning process will be saved in the master TIFF format, as shown in Figure 2. Master TIFF format by providing more of a margin to be different from the JPEG format, because the TIFF format is the preferred master scan for long-term preservation purposes.



**Figure 2.** TIFF format with a margin of 1 cm more at the edge of the archive image.

In Figure 3 you can see the TIFF format that has been converted to the JPEG format. In JPEG format excess margins on the sides of digital archive images have been removed. JPEG format is more compatible for uploading on the website.



**Figure 3.** JPEG format has no margins.

After the scanned archive is displayed, the team will check the archive. After the archive is checked and in accordance with the standard quality, the archivist will save the archive in the Scanstore application, which is a database system from the website [www.sejarah-nusantara.anri.go.id](http://www.sejarah-nusantara.anri.go.id). When saving, scanned archive items will be converted into a single zip file according to the archive inventory file. This zip file will then be uploaded and imported into the Scanstore system.

#### 3.2.4. Post Digitization Work

At this stage, the scanning team checks the scanned digital archive. This is a quality check that complies with metamorphosis standards (color, focus, truncated text, incorrect metadata, skew, etc.). If the results are not up to standard, it will be re-scanned or edited in Photoshop. Editing in Photoshop can be:

1. Color setting;
2. Light and dark settings;
3. White balance settings;
4. Adjustment of skewing or tilt or asymmetry;
5. Titling settings or up and down and high and low;
6. Cutting or cropping;
7. Repair or restoration;
8. Leveling or grading.

After checking with quality assurance, the archive will be stored in the Scanstore application and displayed on the website [www.sejarah-nusantara.anri.go.id](http://www.sejarah-nusantara.anri.go.id) (accessed on 10 October 2022).

Figure 4 shows an example of the archives of the Governor-General and the Council of the Indies (Governor General) of the VOC and their successors in 1612-1812. This archive has been uploaded to a website with several pages. The obstacle that occurred during digitization was when the Content Team recorded the archive item number on the Re-checking sheet based on the page number (Re-folio) in the VOC archive treasures to be uploaded. Re-folio is an activity of giving page numbers to archives. This page number is written on the top right of the archive folio sheet and is carried out by the Content

Team after the Scan Team scans it. Usually, the numbering of the original pages when the archive was created has already given rise to errors because the sequence is inappropriate or incomplete. This becomes an obstacle in online publication, especially when a database will be created that refers to certain pages. If the reference for searching this file is a folio number, then this number should be a reliable reference as scans must be complete and consistent. Archivists need to know in advance whether there is an error with the folio numbering or not. If there is an error in the numbering of the folio, then the archivist will assess and decide whether it is necessary to re-number the folio to obtain a clean numbering sequence that can be used for identification and unique references.



Figure 4. Archives that have been uploaded on the website.

After the digital archive is uploaded to the website, the scanning team will evaluate the overall digitization project that has been carried out. This evaluation is like a special meeting to discuss activities, from preparation, to storing archives into the system, to whether there are problems or delays that are not according to plan.

#### 4. Conclusions

The VOC archives are the Memory of the World Register established by UNESCO. These archives are a valuable asset for Indonesia. Therefore, this archive digitization activity is something that must be completed as part of the preservation. The collaboration between the ANRI and The Corts Foundation (TCF) in digitizing has been carried out in accordance with the standard flow of steps and digitization processes, namely project planning digitization, processes occurring prior to digitization, digital conversion, and post digitization work. Constraints in this digitization are usually technical problems such as the numbering of archive folio pages. Another obstacle is related to resources in digitizing, such as overhead scanner equipment which is owned by only one unit, and limited human resources to digitize the VOC archives, which are still very large, while work to conserve other archives still has to be done. The hope is that this digitization activity can be carried out in further collaboration with other international institutions. The existence of the 17th and 18th century VOC digital archives on the website [www.sejarah-nusantara.anri.go.id](http://www.sejarah-nusantara.anri.go.id) must be promoted and socialized to the general public so that they can be utilized optimally.

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