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**A REVIEW OF THE ACCOUNTING ROLE IN ANCIENT
AND COLONIAL PERIOD:
A CASE STUDY OF INDONESIAN TELECOMMUNICATION
INDUSTRY**

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Abstract

A development of accounting analysis has been a reflection of a linkage among government, industry and company. In this paper, the linkage has been legitimated as political factors dominated a development of telecommunication industry and its companies. One of main findings is that accounting in Indonesia actually has been recognised since an ancient kingdom era. Some accounting practices, such as a tariff of upeti and mahar, have existed in ancient kingdom traditions. This means that accounting, whether in private and public sectors, has been implemented in the past. An economic recession has affected the telecommunication industry dramatically. Profit felt and a business slumped in the 1930s. A sustainability of colonial was a driver of a Japanese government's policy on an Indonesian accounting education. The aim of the policy is to establish an administrative capability for a future colonisation government. In fact, the Indonesians took an advantage of this opportunity to support their independence movement. So, we can conclude that the accounting problems were unique in each period.

Keywords: *Accounting Role, Telecommunication, History, Colonialism*

I. INTRODUCTION

Accounting cannot be separated from its environment. It is therefore necessary to deliver a specific discussion about Indonesian telecommunications as the industrial context of the present study. The aim of this research paper is to clarify the role of accounting in the telecommunication industry and to explore a privatisation in the telecommunication context.

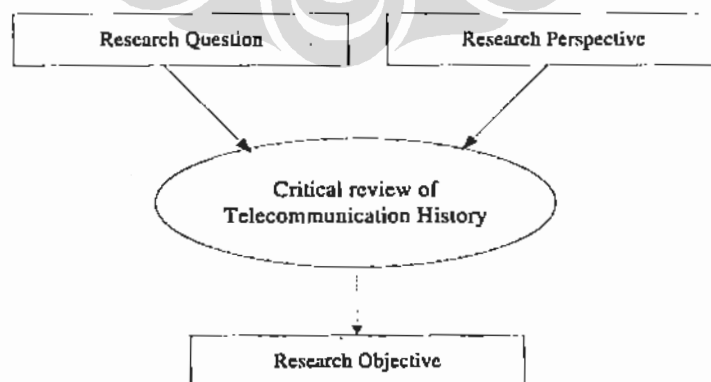
In reviewing an accounting role in the industry, a rationale for the critical review of telecommunication history is needed. This discussion will be followed by an exploration of some possible ways to discuss telecommunication history (Section 2). In this study, the political period approach is selected. Accordingly, the history of the telecommunication industry is presented, especially for the Pre Republic Era (Section 3). Those descriptions will identify some important elements of privatisation in telecommunication. The identified elements (Section 4) will be explored as reasoning to legitimate an aim of this article.

II. RATIONALE FOR A CRITICAL REVIEW OF TELECOMMUNICATION HISTORY

The findings of this study will inevitably be shaped by the study context, the Indonesian telecommunication industry. The aim of this section is to explain the need for a review of the industry. It is reasonable to ask why a critical review is needed, since there are other types of review, such as descriptive, summary or interpretive, which could have been adopted.

The type of review must be one which supports the objectives of the study. This means that mere description of the telecommunication industry is not enough. An exploration of the industry should take a position toward the topic of study and its perspective. For this reason a critical review, rather than descriptive, summary or interpretive review, is more appropriate.

Figure 1: **Rationale of the Critical Review**



As the figure above indicates, to be critical, the review should consider the research question, research perspective and research objective. By exploring these three items, this study will be tied in a sequence idea.

The relationship of the research question to the review takes in many forms. First, the review will help to answer the study's question. Second, the review identifies other necessary elements. In this case, a history will show an interaction between accounting and other industrial elements. Third, the review promotes some ways to analyse the telecommunication industry from documents or notes. Past experience in analysing the telecommunication industry can be drawn on, in order to promote a better analysis.

A second concern is the research perspective, i.e. the attempt to deliver a political economy perspective on a telecommunication history. This means that in presenting the development of telecommunication, it is necessary to explore financial reporting and regulation documents as facts of history. Besides that, many documents which can be interpreted as products of the political economic process, can be included as supplementary sources.

A third concern is the research objective. This final concern is the cumulative result of answering research question and implementing the research perspective. If the other concerns are fulfilled, most probably the research objective can be achieved. However, a misconception of the first two concerns is still possible; the third concern needs to be stated. The character of the review would be changed if it departed from the research objective. First, the review would have no direction; there would be no sequence of ideas from one section to another. Second, the review would be descriptive, rather than critical. Finally, there would be no clear criteria for selection of relevant information.

Taking into account the three concerns above, the critical review should be different from a descriptive review. It is not just a matter of selecting relevant data. In a critical review, the relevant data should be examined for validity, reliability and utility. Validity is about sources of information. If the sources of information are first hand, they will be more valid. Reliability is about how the information is obtained. Printed data will be more reliable than oral information. Utility is actually about the functions of data. In this review, the data should be related to regulation and financial reporting. The closer data to both forms of political economy product, the more useful they are.

The next step after collecting data is summary which, in this study, can be divided into tabulation of financial reporting data and a causal relationship for regulation. From tabulation, a complete picture of financial and organisational developments can be obtained for the period in question, while from regulations, government policy for the industry can be explored. Additional data from supporting documents will supplement the picture.

The discussion in this section has prepared a ground for the discussion to follow. All that remains is to select an appropriate method of presentation for the selected data. Since this is a big issue in social science and a crucial point in historical presentation, the following section will be devoted to consideration of possible ways of discussing Telecommunication History.

III. POSSIBLE WAYS OF DISCUSSING TELECOMMUNICATION HISTORY

A method of presentation can be defined as a way to convince the reader. History can be presented in many alternative ways, e.g. in terms of time periods, events or actors. In the periodic approach, a history is classified into stages. For example, the story of a man from birth through childhood and adolescence to adulthood could be divided into the baby period, boy period, teenager period and man period. The advantage of this method is that it is easy for readers to follow the story; the classification line is clear; and, the characters for each period are easily determined. However, there are some disadvantages, e.g. important events are sometimes not detected; important actors are not made clear; and each period is treated as a separate box. Despite these disadvantages, most historical articles prefer to use a periodical approach as the easiest method.

Another way of classifying history is in terms of key events, for example: the colonial era, the independence era and the modern era, representing events concerned with repression, struggle and welfare. This classification gives primacy to the character of each event. Time intervals are not consistent, since individual events are more significant than periods of time. The advantages of this method are that it emphasizes the meaning of history; the character of each event determines the quality of presentation; and classification is more flexible. On the other hand, the disadvantages are the classification line is unclear, as are the important actors; and the selection of key events is open to debate.

The last method of presentation focuses on personalities who have shaped history, e.g. analysing the roles of President Kennedy, President Carter and President Reagan in American history. People who influence history can be regarded as actors of history, so that focus on them brings also a focus on events, as well as providing a convenient framework for presentation. On the other hand, the disadvantages are unclear line of classification; unclear period of time; and unclear comparison among different actors. This method is not popular, since the degree of difficulty of data collection and analysis is quite high.

Our understanding of these three methods offers several possible of presenting The Critical Review of Telecommunication History. Besides the advantages and disadvantages of each method, our concern is with the nature of the relevant data. Since the research perspective is political economy, the collected data tend to be political and economic in nature. Most historical analysis tends to present political information from a periodic standpoint, as a way to classify the stages of history. This approach is appropriate in the present case because, since telecommunication is a public industry, decisions and developments in the industry cannot be separated from the political situation. Taking this into account, some studies can be examined in the periods of Indonesian politics as a framework for classifying telecommunication history, such as: Pre-Republic, Old Order and New Order. The Pre-Republic section covers a long period before 1945, including Pre-historic times, the Ancient Kingdom and Colonialism. The Old Order section includes

the war of independence, liberal democracy and guided democracy periods. Finally, the New Order section covers the period from 1967 to the present. In this paper, we will focus on the Ancient Kingdom and Colonialism era.

This classification is in line with organisational developments, since the policy makers responsible for industrial and organisational change are the government, controlled by the majority political party. This approach enables us to focus on the role of accounting, which is developed from the organisational mechanism.

Within this approach any factors that influence the development of the role of accounting can be considered relevant to this chapter. Based on a review of the literature, some important factors can be summarised below:

Table 1: Factors Affecting the Role of Accounting in the Indonesian Telecommunication Industry

1. Form:	What was the product of the accounting process?
2. Procedure:	What was the accounting procedure or method?
3. Function:	What was the function of accounting in management?
4. Problem:	What was the most crucial problem of accounting?
5. Authority:	Who had the authority to decide accounting policy or regulation?
6. Institution:	What institution did accounting work in?
7. Phenomena:	What was the outstanding event of accounting?
8. Impact:	What was the result of phenomena?
9. Valuation:	What was the valuation method?
10. Field:	What was the accounting field that predominated or and developed most in that period?
11. Feature:	What features characterised accounting in that period?
12. Internal change:	What significant accounting change occurred within that period?
13. External factors:	What were the external factors that influenced the accounting
14. Focus:	What was the focus in accounting work?

Information on these factors is found in documents, interviews and literature. Since the similar factors are relevant in each stage of history, the history of telecommunication can be critically reviewed through them.

IV. PRE - REPUBLIC

This section will explore the accounting context in the ancient kingdom and colonial era. These periods have in common the struggle against colonialism, which impacted on the telecommunication developments. During the ancient kingdom, a telecommunication developed in kingdoms most of which were at war against Western colonialism.

The struggle to repair sovereignty was continued by people in the colonial era. In this period, a telecommunication developed to serve an authority, which had minimal concern for the people's welfare.

A. ANCIENT KINGDOM

A.1 Preliminary

Most academicians agree that the history of telecommunication can be traced back to the ancient kingdom, when officials were engaged as couriers, responsible for delivering letters and messages. These activities served important functions in the kingdom and community, and gradually expanded.

No data sources indicate exactly when the first couriers existed in the Kingdom. The earliest documentary evidence is a mark in the Prambanan Temple, which mark implies that people exercised *sangkakala* to disseminate messages in emergency situations. This means that 1) people utilised equipment to communicate, and 2) people communicated over distance.

According to some accounts, people introduced several techniques of telecommunication. In Bali, up to the present time, every village has its *kulkul* (Balinese *tong-tong*) with its own distinctive sound, which can be used as a medium to send messages over distance. In the Bronze Age, the *bende*, the *mungmung* and the *gong*, instruments played in the *gamelan*, were used to summon everybody in the area to gatherings at the king's palace.

In this period, telecommunication was not regarded as a commodity, but as a public good. Everybody had access to these telecommunication facilities, at no cost, and the benefits of telecommunication were circulated without any restrictions or requirements.

The following highlight two archetypes of telecommunication usage. The Sriwijaya kingdom was a great old kingdom on the island of Sumatra. The king / queen employed couriers to deliver his / her messages. These were three types of courier: regular, family, and official. The regular couriers were officers who delivered the ruler's messages to the public. Most probably, these messages were about common matters and for social purposes. The family couriers were the officers who handed messages to members of the ruler's family, household and court. Such information was usually related to family and official matters. Family couriers were usually attached to a particular member of the royal household. The last type of courier was the official one. These officers transferred the king's decisions and policies to other officers, individual common people and other kingdoms.

The second archetype is from the Majapahit kingdom in Java. These couriers played a significant role in political matters. In this period, the oath of the Gadjah Mada (an army commander), put politics and the military as leading areas. The oath stated:

*Lamun huwus kalah Nusantara isun amukti palapa (translated:
I will not rest until integration and unity of the Indonesian
Archipelago have been achieved)
(Directorate General of Post and Telecommunications, History
of Post and Telecommunications in Indonesia, 1982, p.39)*

Political and military requirements brought couriers into positions of international diplomacy. They delivered messages and gifts to other kingdoms, using ships for transportation. The introduction of the ship courier can be seen as the start of international telecommunication. The frequency of communication among kingdoms affected the nature of their relationships. The book, *Negara Kertagama*¹, uses the designation *mitroka satata* (friend forever) to refer to some countries that had a very close relationship to Majapahit, meaning regular trading activities and diplomatic exchanges between kingdoms. Thus, it can be seen that officials kept records of international diplomacy.

A.2 Accounting Practice in the Ancient Kingdom

Up to now, academicians have traced the history of accounting in Indonesia back to the era of colonisation only. The reason is

*from an examination of early years of the VOC (Veregnide
Oostindische) in Indonesia, in the beginning of the seventeenth
century, some clues can be gained as to the rise of accounting
in terms of double - entry bookkeeping.
(Sukoharsono, Gaffikin, 1993, The Genesis of Accounting in
Indonesia: The Dutch Colonialism in the Early 17th century,
The Indonesian Journal of Accounting and Business Society,
p.5)*

However, some archaeologists have exposed evidence of earlier accounting practices related to a telecommunication. They mentioned *upeti* practices. *Upeti* was an annual tribute paid by kingdom officers or rulers of other, smaller kingdoms to the king / queen. According to ancient documents, the heads of each village (*desa*) or town (*kabupaten*) reported their production and prosperity every year. At the same time, they brought *upeti* for the king / queen. *Upeti* was used as a way to control the loyalty of the region's officials and that of subordinate kingdoms. If the *upeti* was less than in the previous year, the officials had to explain why and promise to work harder for the coming year. These

¹ *Negara Kertagama* was an old book which is written in the Majapahit period. The book described a story and development of the kingdom

phenomena indicate that: 1) the officials kept production and welfare records, and 2) the record covered three or more years.

Accounting records included the production record, the record of the kingdom's wealth and the inventory of army weapons. They were governed by the kingdom's interest. There is no evidence of standard accounting methods for assessing *upeti*. Everything connected to the *upeti* was determined by the king's policies; the king assessed the value of *upeti* according to his own judgement. Some archaeologists believe that the strength of the relationship between the kingdom and the region or other kingdoms concerned, determined the level at which the tribute was set, and the way it was counted, e.g. whether it should be by weight or equivalent in precious metal.

A.3 Measurement Problem

Related to telecommunication matters, accounting problems occurred in relation to the consistency and accuracy of the *upeti*'s valuation. As mentioned above, the king first set the value of the *upeti*. Some officers counted the value of the *upeti* and reported, but the king had the final word on all matters pertaining to the officers, the kingdom and the *upeti*. From these practices, we can infer, first, that accounting was useful for decision making, and second, that the personality and knowledge of the king influenced the accounting method tremendously. Although accounting faced the problem of lack of consistency and uniformity in accounting method, there were benefits, such as the avoidance of dispute, and variety of accounting methods. Those benefits, especially lack of opportunity for argument, led to lack of attention to the existence of accounting during this period.

The growth of trading and interaction with foreign merchants stimulated special arrangements for accounting. Hayam Wuruk, the fourth king of Majapahit, set up a new institution for welfare accounting, the post of *bendahara* / *bendahari*. His / her duty was to maintain a flow of supplies to meet the needs of the government and army. The *bendahara* was obliged to maintain a record of the kingdom's gold pieces, and to take a personal inventory of the army's weapon and equipment. The new spirit of accounting was just beginning. Summary notes were in common use. Consistency in valuation method was increasing. Besides that, *upeti* accounting became less important as political considerations began to play a greater part in the king's policies.

The establishment of independent institution provided opportunities to develop expertise in *upeti* appraisal and accounting records, as well as commercialisation of the telecommunication process. The closer the relationship between kingdoms, the greater the value of the *upeti*; and, on the other hand, the greater the number of telecommunication activities. However, political intervention was still dominant.

A.4 Failure of Diplomacy: 'Upeti' Case

The aim of this subsection is to describe an outstanding accounting issue in the area of communication during the ancient kingdom period. The issue concerns communication between Majapahit and Padjajaran Kingdom, the two greatest kingdoms in Java. The Gadjah Mada, or military commander, had proposed a marriage between Hayam Wuruk, a king of Majapahit, and Diah Pitaloka, a princess of Padjajaran. He considered the political and communication implications. By such a marriage, the Majapahit would be assured of the friendship and understanding of Padjajaran. The cost of communication would be reduced to a necessary minimum.

However, political intervention disrupted the proposal. Many of the Gadjah Mada's colleagues were envious of his military success, and disrupted the marriage procession. Diah Pitaloka died in the riot. Relations between the two states were broken. The kingdoms became enemies. The Majapahit military increased their defence. The cost of the military increased. These situations increased the cost of communication.

These events show that bad communications are costly. Internal political conflict in Majapahit led to failure to conclude the marriage which was to have cemented and symbolised relations between and ultimately led to war.

B. COLONISATION OF DUTCH INDIES

B.1 Preliminary

In 1597, the first Dutch army came to the east coast of Java. The leader, General Cornelis de Hutman, to search the area around Banten and found massive valuable natural resources. The army returned to the Netherlands and reported its finding. Soon, the Dutch army arrived for the second time, this time planning to stay in Java. Their return had a considerable impact.

In the following years, ten companies were formed to facilitate the need for trading speculation in the East. Competition among the Dutch traders who wished to visit the East was not long in coming.

(Sukoharsono, Eko G. and Gaffikin, Michael J.R., 1993, The Genesis of Accounting in Indonesia: The Dutch Colonialism in the Early 17th century, The Indonesian Journal of Accounting and Business Society, p.9)

The history of colonisation began from that time. To co-ordinate the trading and colonisation strategy, the Dutch (East) Indies government established the Verenigde Oost Indische Company (VOC) in 1602. This trading company had large shares in government operations. Indeed, in reality, there was no a difference between the government and the VOC. The government gave the VOC authority to enter into agreements with native communities or kingdoms, moreover, the VOC had a monopoly on trade and so acquired trade goods very cheaply. The Dutch Indies government, under the name of VOC, took unfair advantage of native human resources and natural resources. However, the monopoly situation was not sufficient to establish a management performance. In fact, it created laziness and greed. Corruption and in-discipline were rife. Money and goods were stolen, and the black market flourished.

In 1799, the government decided to abolish the VOC and take over its operations. This arrangement had a positive effect on the native people (*bumiputera*). The Dutch Indies was modernised. A lot of native people became involved in government and military work

These circumstances stimulated some new industries, such as mining, railway, food, transportation, telecommunication and manufacturing. As an infrastructure industry, telecommunication was one of the first to develop.

B.2 Telegraph

The earliest record of the telegraph in the Dutch East Indies was in 1855. The government decided to implement the new electromagnetic telegraph technology, and Naval Lieutenant Groll undertook a project for Batavia and Bogor's telecommunication system. The work was ready for government purposes on 23rd October 1856. The success of the initial installation work was followed up by another project to install a telegraph system in Surabaya through Semarang and Ambarawa branches. The installation was completed in 1857.

In the early telegraph industry, the type of service depended on the equipment. A morse duplex equipment was for important communication services only. Less important business services used a cardew vibrating sounder. The problem of maintenance of wires arose, caused by stolen wires and destroyed poles. This problem multiplied the cost of the system. The first formal telecommunication regulation in the Dutch East Indies was introduced in 1858 and revised in 1876. Its main aim was to create a monopoly right. Restrictions were placed on non-government companies opening and joining telegraph business. This regulation was derived from Dutch law, and reflected Dutch interests.

For tariff, purpose the industry policy classified consumers into four types: government, public, press and railway. The government had the same system of charges as the public. For places no further than 75 km away, the cost per word was 5 cents with a

minimum tariff of 25 cents per telegram. For places more than 75 km away, the tariff was 10 cents per word with a minimum tariff of 50 cents per telegram. For the press, telegrams within Indonesia were charged at one - fifth the cost of normal telegrams. Press telegrams had priority, in terms of delivery time.

The last classification of consumer was the railway. In 1883, a circular tariff system was applied for railway telegraph service. A similar system was applied for overseas telegrams. The telegram tariff for overseas telegrams sent from Java and Madura was lower (25 cents) than that for overseas telegrams sent from outside Java. The system was in operation up to 1915. After 1915, the overseas and railway telegram tariffs were reduced and, finally, uniform tariffs were introduced throughout the Dutch Indies.

Concerning equipment, in 1859, the Dutch East Indies had the modest telecommunication technology of the nineteenth century. A submarine cable between Jakarta - Muntok and Singapura was installed. In 1870, by agreement between British - Australia and Dutch Indies, the cable was extended to link Jakarta to Singapore and Australia, hence linking the Dutch Indies telegraph systems to the international telegraph network.

The 1870 agreement had tremendous impact on the Dutch Indies' telecommunication industry. The government became a member of the International Telegraph Agreement. Moreover, the Dutch Indies had to follow international standards in telecommunication, especially with regard to equipment, frequency and other related things. During the 1900s, Siemens was the supplier for 75% of the telecommunication equipment in the world. The simplest way to achieve standardisation was to use a Siemens product. So, in 1914, the speed telegraph equipment made by Siemens was put into operation.

With regard to transmission equipment, technological advancement caused competition between cable communications and radio communications. Confidence in radio communication increased due to the fact that secrecy was well preserved in this form of communication. Cable networks gradually decreased due to the high cost of operation and maintenance.

In economic terms, in ordinary situations, the telegraph service was very profitable. In extra - ordinary situations, such as the economic recession of the 1930s, the industry slumped. The telegraph traffic dropped. The reasons behind this poor business were 1) the improvement of airmail, and, 2) lower price of overseas telephone calls.

The economic depression posed a serious challenge for management.¹⁷ To face the challenge, management decreased expenditure and reduced the facilities for users on less profitable lines. Besides that, they introduced new tariffs and services to attract business. Telegrams could be sent by telephone for an additional .25c, or received by telephone for no additional charge. Simple telegraph stations were established, facilities to send a pictures, ship telegrams and greeting telegrams were introduced.

When the second world war broke out in 1939, the Dutch East Indies government proclaimed itself neutral. It was broken up from the Dutch government and colonisation

was ended. During September 1939, the PTT department took over the facilities of Cable and Wireless Ltd. Due to the war, telegrams to overseas destinations were restricted and censored. On the other hand, as a result of the explosive situations in the Western Europe, activity at the telegraph office increased to the extent that the telegraphic service was obliged to continue even on Sundays.

B.3 Telephone

The history of the telephone in Dutch East Indies started in 1881. The government, in Decree No 5, dated 31 July 1881, gave a concession to install telephone for twenty-five years to a private company, 'Intercommunal Telefoon Matschappij'. The company was responsible for establishing telephone communication between cities. After the concession period expired, the government took over the telephone network and delivered that authority to the telephone division in the Post, Telegraph and Telephone Department.

Concerning the network, the PTT department built a Central Battery Telephone Exchange and, implemented Ericsson's Automatic Distribution System in 1921. The network did not succeed in increasing the telephone service. A shortage of skilled manpower and spare-parts were the main barriers to service development, though after World War I, there was steady development in the technology itself. A lot of manufacturers in Europe and America failed to meet the great demand, and the Dutch East Indies maintained a competitive capability in the telecommunication industry.

Concerning tariff, various tariffs were applied by private telephone companies before 1913. The telephone tariff structure for monthly subscriptions was as set out below:

Table 2: Table Tariff for Batavia, Weltevreden, Semarang and Soerabaja

<i>a. Batavia</i>		<i>f.30</i>
<i>b. Weltevreden</i>		
	<i>shops</i>	<i>0.25</i>
	<i>hotels</i>	<i>0.4</i>
	<i>general public</i>	<i>0.15</i>
<i>c. Semarang and Soerabaja</i>		
	<i>trading offices and shipping agents</i>	<i>0.3</i>
	<i>shops</i>	<i>0.25</i>
	<i>hotels</i>	<i>0.4</i>
	<i>general public</i>	<i>0.15</i>
	<i>meeting places</i>	<i>0.5</i>
	<i>packing companies owned by subscribers</i>	<i>0.15</i>

(from: Directorate General of Post and Telecommunications, 1982, *History of Posts and Telecommunications in Indonesia*, p.107)

From June 1913, uniform tariffs were applied based on the number of calls. The initial impact was a reduction in revenue in the first months of approximately f.5000 per month. However, the shortfall was soon off-set by the increasing number of the subscribers.

Concerning service, calls were classified into three types: urgent, important and ordinary. These designations determined priorities in meeting requests for inter-city telephone services. In 1927, the management introduced a new service that had a higher priority than urgent calls. The type of service did not effect the tariff for the service. The normal tariff was applied for all types of services.

In March 1927, new transmission technology from Philips arrived, in order to increase the service capacity. Radio telephone services made it possible to link Dutch East Indies and the Netherlands. Thus, the new transmission made the capacity of the telephone equal to that of the telegraph, leading to a decision to combine the telegraph and telephone services in November 1929.

Concerning manufacturing, management built the Radio Laboratory in Bandung, with the aim in the long-term of increasing Indonesia's self-sufficiency in technology. The laboratory succeeded in producing a crystal telephone transmitter in December 1927. The quality was excellent and the laboratory attained worldwide recognition. However, due to the economic recession and the second world war, the laboratory's work slowed down and, it finally closed in 1939.

B.4 PTT Organization

There are very few data available in existing historical documents concerning the details of the organisation of the Headquarters of Posts and, later, Posts and Telegraph. The organisation of the telecommunication industry began with the Postal Service section in 1846. This section, which dealt with mail and coach mail, was under the management of the 'Direkteur der Produkten en der Civiele magazijn' (Director of Agriculture and Civil Warehouse). The introduction of telegraph services in 1856, expanded this section, but the organisation of the two services was kept separate.

In 1875 the Post and Telegraph Services were under the 'Department der Burgerlijke Openbare Werken (Department of Public Works). In 1907, post and telegraph came to be viewed less as a public service and more as a public business. The Posts and Telegraph Service became a Division of the 'Department van Gouvernementsbedrijven' (Department for Government Corporations). The Posts, Telegraph and Telephone Services was headed by a high ranking official with the designation 'Chef van de PTT dienst (Head of PTT Service).

By 1924, the development of the business required an organisational change. The PTT Headquarters was divided into three divisions: the Administrative Division, the Postal Division, and the Telegraph and Telephone Division. Heads of division were responsible to

the Managing Director. Besides that, the organisation had 7 Posts and Telegraph Inspection areas and 7 Telegraph and Telephone Districts, in order to cover all areas in the Dutch East Indies.

To cope with technological advancement, in 1926, the PTT Laboratory was established in Bandung. This laboratory, which was actually only a workshop, could only produce lead seal for sealing mail bags and manufacture date stamps. Following the PTT laboratory, in 1929, the Radio Laboratory and the Radio Equipment Centre were founded. These laboratories became the nucleus of research and development in telegraph, telephone and radio.

C. ACCOUNTING PRACTICE IN DUTCH EAST INDIES COLONISATION

The first accounting practice in this period was the institution of a unified monetary system. In 1609, the management of VOC noted that their primary concern was to implement a monopoly over the Indonesian economic, social and political system. They believed that a standard medium of exchange would make the native people obey the Dutch economic policy. They were conscious that no other nation had applied its monetary system to the Dutch East Indies. Each tribe and kingdom in the area used a different kind of money. Because of the different types of money used by merchants, the Dutch raised a campaign to use Dutch coins called *rials* (made of silver and gold). In a short period, the Dutch gold coin became the most valuable medium of exchange, and silver became the most important one. The Dutch silver coin dominated the trading among native people and Dutchmen.

The management of the VOC was successful in developing their business. They expanded to some new industries, such as telecommunication. At the same time, management also injected their technology into new areas, including recording practices. The development of recording or documentary provided some statistical and qualitative data about the growth of telecommunication industry, as shown by the following summary from the *Indische Verslag*, 1938:

Table 3: Summary of Balance (+) or Deficit (-) in 1,000 guilders PTT Company 1925 – 1932

Year	Postal	Telegraph	Telephone	Total
1925	2,878.30	-2,849.90	600	628.4
1930	2,897.50	-3,842.00	729.5	-215
1931	2,500	-4,392.50	334.8	-1,557.80
1932	3,153.90	-4,271.60	-493.7	-1,611.40

(from: GB Admiralty, 1944, Netherlands E. Indies, v.2, Oxford University Press, London)

From the table, technical accounting practice must have been in operation since 1920. From other documents, it appears that technical accounting practice was confirmed to inventory recording. The handbook of the Netherlands East Indies, for 1930, contains records of types of lines from 1900. The statistical table in that book described the condition of wire inventory.

Considering those facts, the initial development of the accounting system was in the inventory side. The phenomenon led to the enlargement of the cost accounting system. Because of a growing management focus on performance, the income statement was the main focus of accounting.

On the side of revenue, the management applied a circular tariff for a telegraph service. The circular tariff system put every place, which was equally distant from the place of sender, in the same price band. During the colonial era, there were two price bands: for distances within 75 km and distances over 75 km. The difference was about 5 cents per word.

The government of the Dutch East Indies regulated the marketing strategy, especially the tariff system. Government policies focused on developing the mass media industry and other infrastructure industries. On the other hand, the marketing strategy was to increase the number of customers. So, the government, with reference from management, gave special treatment to the press, making press telegrams only one-fifth the cost of normal ones. The reason was that press telegrams, like government ones, outnumbered normal ones.

Management elaborated the treatment for other customers, e.g. railway and train companies, still applying a circular tariff. The charge to these companies, as to the press, was only one - fifth of the normal one.

As regards telephone services, the government did not interfere in tariffs. The private companies' management issued their various tariffs. Up to the end of the colonisation, the tariffs were for four cities only: Batavia, Weltevreden, Semarang and Soerabaja. Marketing strategy dominated the tariff policies, which was based on customer classification. Tariffs for shops and hotels were different from those the general public and meeting places. The cheapest rate for telephone services was for the general public, and the most expensive was for hotels.

In 1913, management changed their marketing strategies, due to the increase in demand. To disseminate telephone culture, management altered the tariff strategy to a uniform tariff system. The new policy shocked the customers, and the number of general public customers decreased for the first few months, which affected the companies revenue. However, these drops were covered by the increase in subscribers in the next few months. The 1913 policy was a long-term perspective on the strategy of an accounting rate.

From the above discussion, the modification of the accounting rate did not directly affect on the telegraph service, but it affected the telephone. The development of the telegraph was still rapid, reducing the deficit on the telegraph's balance of payment. On the other hand, the change in the telephone rate increased the profitability of the telephone service. Management discovered that the telegraph was already regarded as a public need, so, they developed a combination of telephone and telegraph services.

C.1 Problem of Accounting in Dutch East Indies Colonization

The economic recession affected the telecommunication industry dramatically. Profit fell and the business slumped in the 1930s. The business infrastructure, such as accounting and finance, was not equal to the demands of the situation. On the accounting side, the income statement lost its capability to reflect the recession conditions.

In the inventory practice, management did not re-value the goods and equipment. Assets were reported at their historical value. This led to accounting reports being overstated.

The lack of development of financial accounting led to misleading representation of the industry and companies' situation, reducing the confidence of society. Management's were slow to respond, as they were busy with war and economic pressures on their personal households. This lack of awareness continued until the Japanese occupation. The only positive side to the situation was the cost awareness of management and government.

C.2 Accounting Phenomena

The cost accounting practice led to the development of the recording system in the colonial era. Management focused their activities more on the revenue side. The work on marketing grew rapidly. Much innovation took place in services and strategies.

During the recession era, the economy was in an uncertain position. Telecommunication revenue dropped. On the other hand, the price of spare parts increased expenditure. The management, for the first time, paid attention to the cost side, and developed some 'expenditure' programmes.

Management introduced cost reduction programmes by 1) reducing the facilities for users on less profitable lines; 2) decreasing the facilities for employees and not hiring new employees. The less profitable lines were press and railway lines. These were made available at restricted times, especially in the evening. Urgent telegraph facilities were given the same treatment as the priority ones. On the other hand, the important and ordinary facilities were increased in some main telegraph offices.

Revenue was still the main concern. The management set a new strategy for increasing revenue. The strategy relied on the development of the service, based on the basic facilities. The new programmes included sending telegrams via telephone; introducing picture

telegraphs; greeting telegraphs; and shipping letter telegram services. Thus, it appears that cost consciousness underlay the innovations of the recession period.

D. JAPANESE OCCUPATION

D.1 Preliminary

The Second World War broke out in 1939. The alliance of Japan, Italy and Germany rapidly beat down the rest of Europe and Asia, including the Dutch East Indies. The war brought a change in conditions, as many governments changed and all companies were mobilised toward facilitating the war.

In the Dutch East Indies, the Netherlands colonisation government surrendered unconditionally to the Japanese army on 8th March, 1942. The new government directly organised the new colony into three military government areas: Sumatra - Bukit Tinggi, Java - Jakarta and other islands – Makassar, with the Singapore headquarter as co-ordinator of the three areas.

However, political situation changed rapidly. In 1945, the German-Japanese alliance lost. The condition of the Dutch Indies had altered in three years and the native people were happy with the status quo, after the Japanese surrender focused on preserving independence.

D.2 Organization

The industry structure was Japanese occupation had to comply with the government framework, especially in the military interest. The industry was segmented into three areas: Sumatra, Java and Celebes, supervised by the Japanese private telecommunication company, Kokusai Denki Tsusinkyoku. The positive aspect of the new structure was that native people got opportunities to be office leaders, unlike the situation under Dutch colonisation, when all leading positions in all government institutions were monopolised by the Dutch.

Extensive restructuring was undertaken. On 1st October 1942, PTT was split to form two separate entities, the Postal Service and, the Telegraph and Telephone Service. Both became parts of Gunseikanbu in Singapore. One year later, on 1st September 1943, the Postal and the Telegraph and Telephone Service were reunited.

A change in government structure took place affecting the PTT structure directly. The government of Sumatra was separated from 'Gunseikanbu' Singapore and became 'Gunseikanbu' in Bukittinggi. The PTT service, which was henceforth called Tsusinbu, became a part of Gunseikanbu in Bukittinggi. The name was later changed to Tsusinsokyoku. The names of the PTT Branch offices in Medan, Padang and Palembang were also changed

to Tsusinkyoku. The Postal service was called Yuseibu and the Telegraph and Telephone Service was called Denseibu.

As the war approached an end, the crisis of the Japanese position led to further restructuring. On 1st June, 1945, the PTT Service was reorganised into two separate entities. First, the Postal Service which was called 'Yuseihan' and came under the supervision of the 'Gunseikanbu Samubu Department' (Department of General Affairs of the Japanese Military Government). Second, the Telegraph and Telephone service which was called 'Tsusintai Sireibu' and was placed under the direct supervision of the Japanese Supreme Military Government. The PTT Branch Offices in Medan, Padang and Palembang were each divided into two separate branch offices, the Postal Branch Offices being called 'Yuseika' or 'Yumuka' and the Telegraph and Telephone Branch office being called 'Tsusintai'. In other areas, branch Tsusintai, called Tsusinsyotai, were established.

Before the Japanese surrender, on 14th August 1945, the Postal and the Telegraph and Telephone Services were reunited into one PTT Service called 'Tsusinbu'. The branch offices of the two former services (Yusika and Tsusinsyotai) were also joined and called 'Tsusinkyoku'.

D.3 Management

During the second world war, international telecommunication was limited to Japan and Germany. The industry's operations were run to support the military interest. Because of its strategic position, Indonesia was the centre of war telecommunications. The Japanese government installed the newest technology, which was speedy, accurate and safe. Most of the equipment was from Siemens, Germany. The government applied that technology, in order to create direct links between Jakarta - Makassar - Bukit Tinggi - Singapore and Tokyo.

Concerning tariff, the government abolished all charges to government bodies. To cover the cost of this policy, they increased all postal and telephone tariffs for the public.

As regards industrial policies, the occupation government implemented decentralisation of financial reporting, to provide important information on the each region's profits and losses. The strategy facilitated control and planning. However, because of the abolition of charges to government, the profit was not enough to cover all government expenditures.

The unique phenomenon in management was the increased the role of native people, who started getting opportunities to create network and equipment. They learned fast and prepared for their independence. By 1945, they had succeeded in providing an illegal transmitter for the underground movement.

D.4 Summary of Japanese Policy

During the Japanese occupation, some developments of the telecommunication took place, as follows:

- a. Decentralisation of the PTT Service
- b. Merging of the Postal Savings Bank into PTT Service
- c. Merging of the regional government, the Deli Railway Company and the Biliton Tin Company telephone Networks into the PTT Service
- d. Organisation of a PTT Radio Broadcast
- e. Increasing telephone and telegraph tariffs
- f. Construction of radio stations in all residential capitals
- g. Direct radio links between Bukittinggi and Bandung, Bukittinggi and Tokyo, and, Bukittinggi and Singapore.
- h. Inter-city connections using open wire carrier systems
- i. Cable links between Pakanbaru and Mallacka

D.5 Accounting Practice in the Japanese Occupation

During the Japanese occupation, the accounting practice was focused on supporting military strategies. The development of the business ceased. The government made all manufacturing and industry work in the military interest. So, in this period, the work of accounting focused mainly on the recording of equipment inventory. A telecommunications centre was built in Bandung. The strategic position of the Javanese island, between two oceans and seas, had attracted the military commanders' interest, and a lot of new equipment was introduced. These activities required a sophisticated inventory system. The management of the PTT fulfilled that need by establishing an inventory - book keeping system. The application of this accounting system was supervised by the Japanese Private Telecommunication Company, Kokusai Densetsu Tsushinkyoku.

To fulfil a long-term need, the government set up an accounting education programme for technicians and administrators. Many native personnel benefited from this training, which lasted between six months and one year. On the Japanese curriculum, accounting was taught as financial management A, financial management B, and financial management C. The material focused mainly on technical-procedure recording.

D.6 Phenomena of Accounting

The Japanese government changed the structure of the telecommunication industry, putting the new organisation into the context of military strategy. For planning purposes, the colony was divided into three areas: Sumatra, Java and Other islands. All supporting activities followed the new structure.

Though the government restructured the industry, they allowed the existing bookkeeping practice to continue, because they did not have their own system. They asked some Dutchmen to do their administrative work. The Dutch were also employed as teachers in some administration training courses.

The government's transformation had a radical impact on accounting. The Japanese's interests drove accounting into different directions. Their interests are: 1) to gain the support of the Indonesian people; 2) to gain support in the World War; 3) to establish colonial rule.

To serve the first interest, the government decentralised financial responsibilities to branch or regional representatives. Each region had to report its income statement. This policy created more positions for the natives. Some of them even became leaders in their organisations, which helped the progress towards the Indonesian independence.

To serve the second interest, the Japanese government needed a sophisticated administration to reorganise their army, especially on the inventory side. They built some central telecommunications facilities and brought in some new equipment. The Dutch had already left some productive manufacturing and equipment. The military government reorganised all those facilities, and deployed them as a powerful support for the army.

The final interest was served by the Japanese government's encouragement of accounting education. The aim of this programme was to establish the administrative capability for future colonisation. In fact, the natives took advantage of this opportunity to support their independence movement.

V. DISCUSSION

The foregoing discussion of each period of accounting's role in the industry has covered the most important facts of Indonesian telecommunication history. As a record of each period, accounting documents show the telecommunication stages from the ancient kingdom period to the colonialism. So, in line with a purpose of this study, this section will highlight the role of accounting in telecommunication industry and of privatisation in telecommunication history. Figure 2 below, summarises the development of the accounting role in the industry. It can be seen that accounting has existed in each period of history. Even though the role of accounting has been different in each period, it has been a reflector of industrial development. Thus, telecommunication history can be studied from an accounting point of view.

As Figure 2 shows, the product of accounting has varied over the years. In the ancient kingdom, the accounting processes produced *upeti*. The forms of product could be human, goods and services. When the Dutch colonisation commenced, the product was coin. It was a symbol of the monetary system and monopoly trading. In twenty years, the management of the Dutch company - VOC established the modern forms of the product, such as: income statement, inventory record and tariff.

Figure 2: The Development of The Accounting Role in the Telecommunication Industry in Indonesia (Ancient Kingdom – Japanese Period)

	Ancient Kingdom	Dutch East Indies	Japanese
Form	Upeti	-coins	-income statement
		-income statement	-inventory record
		-inventory record	-tariff
		-tariff	
Procedure	No method	-value of coins	-book-keeping
		-book-keeping	-decentralisation
		-circular tariff	
Function	-evaluation	-evaluation	-evaluation supporting military strategy
	-symbol of loyalty	-decision making	
Problem	-measurement standard	-recession accounting	-orientation changing
Authority	King	Administrator	Military commander
Institution	Bendahara/i	Government (VOC)	Army
Phenomena	Failure of <i>upeti</i>	Recession	Restructuring on military basis
Impact of Phenomena	Negative value	industry down	Spreading accounting
Valuation	Uncertainty	rigid historical	Utilities
Field	-	cost accounting	Organisational control
Feature	Social	Technical	Military
Internal Change	-	become administration tools	Become a part of military strategy
External Factors	Political	-marketing	Military
		-colonialization	
Focus	Control	Revenue	Military

The first two forms were the types of reporting. The last one was the result of the accounting calculation. From those types of products, it can be assumed that financial accounting practice was applied first, followed by cost accounting practice.

The development of procedure depends on the form of product. All periods except the ancient kingdom period, use a bookkeeping method. The Dutch accounting system, which implemented by VOC (a private company) dominated the business practice for more than three hundred years. This means a privatisation has been implemented by utilis-

ing a private company to maintain a telecommunication operational. Besides that, the different contexts of each period induced an application of some specific and contextual procedures, such as bureaucratic and international agreements.

Before independence, valuation played a significant role in accounting. Accounting had to be able to provide information about the condition of *upeti*, equipment and cables. When the monopoly practice was stable, management used accounting in the decision making process. Later, it became a supporting tool for a military strategy.

The problems of accounting were unique in each period. They can be classified into technical, external factors and perspective. Technical problems existed in the ancient kingdom and Dutch colonisation periods. In a Dutch period, a cost accounting and a reporting technique became a privatization tool for public services by charging telecommunication tariff and surplus. Finally, the perspective classification covers the Japanese period. Most of the problems, except in the ancient kingdom period, were caused by the lack of understanding of accounting as a concept and a practice. Since only a few Indonesians have studied accounting seriously, especially in the telecommunication industry, this problem has continued up to the 1990s. Thus, the basic problem of accounting in the telecommunication industry is human resources.

In relation to authority, accounting recognised social power, usually exercised by organisations or groups. In the period of Dutch colonisation, social power belonged to the administrators, so the authority for accounting development was in the hands of the administrators. The situation was similar in the Japanese period, except that it was the commanders who had the power.

The internal change item in the figure 2 describes the perspective of the people in each period. Each period had its own challenges and unique organisational-environmental context. Thus, each period produce a unique change. What in the Dutch colonisation, period was an administrative tool, for example, shifted to a military strategy in the Japanese Occupation. Though each period had its distinctive features, bookkeeping was consistent as the way people used accounting. It produced the 'technical' dogma of the accounting nature.

External factors had a share in supporting accounting in action. For example, in the ancient kingdom period, political factors dominated accounting practice. The external factors injected a relative characteristic into accounting.

The focus of analysis in each period was also distinctive. In the ancient kingdom, the focus was on control. The king used *upeti* to control the loyalty of the regions. In the Dutch East Indies, the government applied accounting to calculate the revenue and to implement a tariff base for the services.

5.1 Conclusion

The discussion above has delivered some findings. First, political, authority, and focus are the main factors that determine the role of accounting in telecommunication industry. Just as accounting had mediated some of the early crucial policy decisions, now accounting is itself subject to the implications of some of its own effects. In the Dutch era of colonisation, accounting authority was in the administrator's power. The government focused the business on the revenue only as a private operator's interest. This shifted accounting from a social to a technical feature. Accounting became an administrative tool. When the Japanese came, the government changed to a military style, placing the authority on the military commanders. In fact, the focus of all activities was on military strategy. Accounting became part of the military strategy.

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