

# On Some Basic Features of Earlier Costing: Schneider and Co. Around the 1840s (2)\*

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## 4. Inventory Valuation in Process Costing

As noted in Section 2, the Schneider archive contains only a few records as regards process costing. They are schedules showing cost data of Schneider's coal mine, coke ovens, and blast furnaces for the 1840-41 year, one schedule for each of those three departments. Each lists the annual expenditures with a calculated unit cost for each cost component. From among these schedules, only that of the blast furnaces is taken here that shows the results of their annual production of 5,962,298 kilograms. Exhibit 3 is its reproduction with some modification. In the original, in fact, the items are not classified and they are listed in different order. The modification therefore consists in classifying the items into five groups, which necessarily changes the original listing order, and adding the sub-headings (in italics) as group names.

The objective of this rearrangement is twofold. One is to ascertain whether in the costs recorded in the schedule are contained capital expenditures treated as revenue expenditure in accordance with the replacement accounting system of the time (this concerns the issue presented as Point 4 in Section 1). The items under the sub-heading Maintenance can relate to this (the item Fitting indicates repairs of machinery). The Schneider brothers, *gérants*, had proclaimed that in accordance with the replacement accounting method, the

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\* This is the remaining third of the whole article, the first two thirds of which were inserted in Vol. XXXX No. 2 Consecutive No. 81.

Exhibit 3

		Per thousand kg (Mis au ‰ Kilos)
—— Expenditures (Dépenses) ——		
—— Direct Labor ——		
Labor (Main d'Œuvre)	34,281.30	5.75
—— Direct Materials ——		
Ore (Minerais)	234,545.64	39.33
Cokes (Coke)	305,263.54	51.21
Slag (Laitiers)	7,023.05	1.19
—— Indirect Materials ——		
Flux (Castine)	1,177.50	0.20
Sand (Sable)	941.15	0.16
Supplies (Fournitures)	3,595.15	0.60
—— Maintenance ——		
Castings (Moulages)	3,299.45	0.55
Fitting (Ajustage)	403.16	0.07
Maintenance Expenses (Frais d'Entretien)	2,571.08	0.43
—— Other Expenses ——		
General Expenses (Frais Généraux)	24,511.76	4.11
Supervision (Surveillance)	1,200.00	0.20
Blast Engine (Machine Soufflante)	40,195.47	6.74
Dross Unloading (Déchargement de Crasses)	510.75	0.08
Wheeling of Ore (Roulage de Minerais)	6,667.60	1.12
Transportation (Transport)	4,509.26	0.75
	<u>F 670,695.86</u>	<u>F 112.49</u>

Source: Schneider Collection. 187 AQ 2. Dossier de l'assemblée générale du 4 mars 1841.

Note: The original listing order is changed. The sub-headings in italics are added. The words in parentheses are the original French words.

company would charge expenditures "to improve equipment or to replace such and such existing manufacturing process" to the "manufacturing account (*compte de fabrication*)" of each department involved, and this, in their report to the stockholders' general meeting held to discuss the results of the second period

(1838–39).<sup>57)</sup> At that time, the word “*entretien* (maintenance)” was often used to indicate such expenditures (the word “repair”, instead of “maintenance,” seem to have been used in Anglo-Saxon countries to indicate this practice). However, the extremely small amounts the items under the above sub-heading list seem to indicate that such expenditures had not yet been charged to the account of the Blast Furnaces department in this fourth year.<sup>58)</sup>

The other objective is to verify whether this cost schedule gives evidence of total costing that was mentioned as Point 2 in Section 1, in other words, whether it lists items representing or including nonmanufacturing expenses. The item Supervision, under the sub-heading Other Expenses, seems to indicate a type of expense that ought to be classed into factory overhead. Incidentally, the item Blast Engine mostly represents coal it had consumed. The only item that could indicate the presence of nonmanufacturing expenses is General Expenses, but it only indicates this possibility. The conclusion drawn from the examination of the schedule is that it refuses to deny or confirm a practice of total costing. This is the same for the cost records of job order costing that list indirect expenses in a mass. Therefore another sources must be sought in order to confirm the presence of this practice. This issue will be treated in the following section using other sources.<sup>59)</sup>

The accounting year the schedule reproduced in Exhibit 3 concerns belonged, as has been seen in Section 3, to the period when the inventory item Fitting was recording work-in-process only as materials. This indicates that the recording of unfinished work-in-process inventory at only material cost does not means the

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57) About this and the complete quotation of this part of the report, see Fujimura, *A Lost Accounting System*, 58–59.

58) Nevertheless, the item Casting, seemingly relating mostly to tools, may indicate this practice.

59) The other schedules do not say more about the two issues that have been mentioned in the text.

recognition of indirect costs as a cost component was lacking. Of the items listed in the schedule, the items under the sub-headings Indirect Materials, Maintenance, and Other Expenses could be seen as representing indirect costs. A merit of the schedule is that it shows Schneider and Co. paid much attention to indirect expenses. On the other hand, its demerit is that it does not show how indirect costs were applied to products in Schneider's process costing. In contrast, as has been seen, the records regarding job order costing showed how indirect costs had been applied to products, while they did not detail the indirect costs. The schedule is basically a record of annual expenditures actually incurred, and the unit cost it lists is no more than the actual average unit cost per ton of the annual production. It can nevertheless be said that the schedule effectively suggests that sophisticated costing was also being performed as to process costing at Schneider and Co.

The inventory items listed below, which were picked out by the author as those related to the Iron Making department, through investigation of the section within the balance book where the details of each inventory item are given, would help to identify the account which the schedule is concerned with. The investigation was done unequally over the records of the first six years.

Inventory No. 66: Ore on the Platform (*Minerais sur la Plate-Forme*)

Inventory Nos. 73 & 74: Blast Engine (*Machine Soufflante*)

Store of Cokes (*Dépôt de Coke*)

Coke Ovens (*Fours à Coke*)

Blast Furnaces (*Hauts Fourneaux*)

Inventory No. 54: Pigs for Wrought Iron (*Fontes pour Fer*)

Inventory No. 55: Pigs for Casting (*Fontes pour Mouleries*)

Inventory No. 69: Grand Forge (*Grande Forge*)

Inventory No. 51: Warehouse of the Grand Forge (*Magasin de la Grande Forge*)

As the above shows, the inventory items related to iron making, which is subject to process costing, are of two sorts: those having factory names and those having product or warehouse names. This contrasts with the case of mechanical engineering, subject to job order costing, where only items having factory names were found. As will be mentioned below, the items having product or warehouse names record departmental finished goods and may record goods purchased as raw materials. This suggests that the items having factory names each record the ending inventories of a related ledger account that corresponds to today's work-in-process inventory account.

Inventory No. 66 records ironstone transported to Le Creusot Works from Schneider's own mines (Inventory No. 60 and others), but also ironstone purchased from outside. The items Coke Ovens and Blast Furnaces are under the same integrated inventory numbers, 73 & 74, but it seems that they reflect each its corresponding ledger account.<sup>60)</sup> It is the records of this item Blast Furnaces that seem to show the ending inventories of its corresponding ledger account whose entries concerning production costs in 1840-41 are summarized by the schedule reproduced in Exhibit 3. This ledger account must be an account corresponding to today's work-in-process account. Such an account must have been that referred to as a "manufacturing account" by the Schneider brothers in the report quoted earlier. Blast Furnaces' finished goods are recorded by Inventories No. 54 and No. 55. Inventories No. 54 and No. 55 also record pig iron purchased from outside. In any case, as regards pigs for wrought iron, the pigs produced by Schneider's blast furnaces must have been transferred from the ledger account corresponding to the item Blast Furnaces within Inventory Nos. 73 & 74 to the ledger account corresponding to Inventory

60) The entries on 30 April 1850 of the *Journal Z* show that the "Blast Furnaces (*Hauts Fourneaux*)," "Coke Ovens (*Fours à Coke*)" and "Store of Cokes (*Dépôt de Coke*)" accounts each comprised a separate account.

No. 54, then to the ledger account corresponding to Inventory No. 69 (Grand Forge). This latter ledger account must also be an account corresponding to today's work-in-process account. The finished goods of Grand Forge are recorded by Inventory No. 51 (Warehouse of the Grand Forge) that records Schneider's iron products exclusively.

Of the ledger accounts corresponding to the above inventory items, those corresponding to Inventory No. 51 have already been treated. As noted in Section 2, the file within the Schneider archive containing the schedules an illustration of which is given by Exhibit 3 also includes the statements summarizing the entries in the three warehouse accounts of the Grand Forge department for the 1839-40 and 1840-41 years. The three warehouse accounts are: Plates and Sheets Warehouse (*Magasin des Tôles*), Bar Iron Warehouse (*Magasin des Fers*), and Rails Warehouse (*Magasin des Rails*). The ending inventories recorded in the six statements are detailed by the records of Inventory No. 51 in 1839-40 and 1840-41. Of the six statements, that shows the summary of the Plates and Sheets Warehouse account for the 1839-40 period is reproduced as Exhibit 1 in Section 1. In this Section 1, of the points presented as the notable features of Schneider's costing practices, Point 1 and Point 3-a were discussed dealing with this statement. And in Section 2, an additional explanation was given about Point 1 referring to the profit and loss account reproduced in Exhibits 2-A and B. The department responsible for finished goods available for sale, that is the Grand Forge department, served the discussion of these two matters. As the profit and loss account reproduced in Exhibit 2-B suggests, the profits of the larger Iron Making department, comprised of the Iron Mines, Coke Ovens, Blast Furnaces, and Grand Forge departments, were determined exclusively in Grand Forge's warehouse trading accounts. The Blast Furnaces department was only a simple cost center. The department comprising a cost center, that is the Blast Furnaces department, is an appropriate example when examining costing prac-

tices about work-in-process, which relate to Points 3-b and c, and these are the subjects examined from now as this section's main subjects.

The Schneider brothers suggested that the finished goods of a cost center had to be valued at cost in their report to the stockholders' general meeting held to discuss the results of the 1840-41 year: "The cast iron being delivered to the forge at cost, the blast furnaces show no result in the financial statements."<sup>61)</sup> According to the same report, the Blast Furnaces department's annual production for the 1840-41 year was 5,962,298 kg. Of this annual production, pigs for casting accounted for only 204,674 kg and the rest was pigs for wrought iron. Inventory No. 54 (Pigs for Wrought Iron) for the 1840-41 year shows that the ending inventory of the pigs for wrought iron made by the Blast Furnaces department were valued at 110.00 fr per ton. This rate, namely that of the product that accounted for more than 95 % of the department's annual production, is almost equal to the unit cost, 112,49 fr per ton, listed in the schedule that shows the result of the department's whole production of the same year.<sup>62)</sup> This coincidence indicates that under Schneider's accounting system, the departmental finished goods of a cost center, namely work-in-process as departmental finished goods, were valued at cost (Point 3-b).

The above concerns the work-in-process transferred from the account corresponding to the item Blast Furnaces within Inventory Nos. 73 & 74 as its finished goods. The unfinished work-in-process of this account at the year end must be found in the records of this item Blast Furnaces within Inventory Nos. 73 & 74. Besides coal and supplies of Blast Engine, coal of Coke Ovens (coal was mostly

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61) *"Les fontes étant livrées à la forge au prix de revient, les hauts fourneaux ne fournissent aucun résultat à l'Inventaire."*

62) Pigs for casting little affected the weighted average. The author omitted to transcribe the rate of pigs for casting of the 1840-41 year, but in 1839-40 year the rate of pigs for casting was 150 fr per ton and the rate of pigs for wrought iron was 110 fr per ton.

from Coal Mine of Le Creusot — Inventory No. 68), and cokes of Store of Cokes, as the items belonging to the item Blast Furnaces Inventory Nos. 73 & 74 of the 1840–41 period records: iron ore and slag under the heading “Blast Furnaces” accompanied by the words in parentheses “under the sheds (*sous les halles*)”; slag and sand “In store (*En dépôt*)”; supplies; and iron ore, cokes, and slag “Inside the 3 blast furnaces (*Dans l’intérieur des 3 hauts fourneaux*).” These materials inside the furnaces are recorded in the following manner:

Inside the 3 blast furnaces				
<i>Roche</i> (Rock)	cubic meters	14.00	10.50	147.00
<i>Brute</i> (Rough)	do.	22.20	11.00	244.20
Varennnes	do.	5.60	22.70	127.12
de Pons	do.	14.00	36.00	504.00
Cokes	hectoliters	1,575.00	0.85	1,338.75
Slag of Le Creusot	cubic meters	5.60	5.00	28.00

The first four items are iron ore. Of them, according to Inventory No. 66, the first two are: *Minerais* (Ore) *roche de Chalencey* and *Minerais brut de Chalencey* (in this case the adjective “*brut*” is masculine). Chalencey and Varennes were among the mines owned by Schneider and Co., respectively Inventory No. 60 and No. 61. The above quotation illustrates the recording format of the inventory records related to process costing. The materials, products, or supplies listed in each inventory are recorded in accordance with the above format with volume or weight, a rate, and a total sum in franc. Such meticulous records evoke those of the Fitting department described in Section 3.

It is indisputable that the iron ore, cokes and slag recorded as being “inside the 3 blast furnaces” represent work-in-process. But all other direct materials recorded as belonging to Blast Furnaces also seem to indicate work-in-process, especially the iron ore and slag “under the sheds.” In fact, the records regarding “inside the 3 blast furnaces” started only in the 1840–41 period. Before this period only the records on “under the shed” are found except the first year. In



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any case, it should be noted that, except supplies, recorded are direct materials. Such a record was entered as the ending inventories in the account that recorded the expense items shown by the schedule reproduced in Exhibit 3. Although the expenses collected to determine the cost of departmental finished products contained materials, labor, and indirect expenses, the unfinished work-in-process was represented by materials only (Point 3-c).

It is certain that the rates attached to the materials belonging to the item Blast Furnaces represented only value as materials. The author confirmed this by confronting the rates of iron ore of the three places (inside the furnaces and under the sheds recorded by Inventory Nos. 73 & 74, and on the platform recorded by Inventory No. 66) for seven years from the first year to the 1843-44 year when valuation of unfinished work-in-process with three cost elements started in the Fitting department. As the samples, the two sorts of iron ore of Chalency were taken for, apart from them, often different origins of iron ore were found between the three places. Naturally, the rates of the two sorts of ore of Chalency were always the same between inside the blast furnaces and under the sheds. This tendency was also found between on the platform and inside the blast furnaces or under the sheds. The related rates were the same except four cases that showed slight gaps seemingly caused by occasional fluctuation of the rates. It is certain that the materials recorded as representing work-in-process were none other than records of materials. Unfinished work-in-process was really valued only at its materials costs.

The examination of the practice at Schneider and Co. about inventory valuation was thus finished. Its Iron Making department showed three steps of inventory valuation or recording: unfinished work-in-process recorded only as materials (Point 3-c), work-in-process as departmental finished goods valued at costs (Point 3-b), and finished goods available for sale valued at market prices (Point 3-a).

Before leaving this section it would be better to make some additional remarks on the ledger account the entries of which are partly shown by the part Blast Furnaces within Inventory Nos. 73 & 74 and partly illustrated by the schedule reproduced in Exhibit 3. This account is an account corresponding to today's work-in-process inventory account in the sense that it collected costs incurred in manufacturing products. It also showed remaining unfinished units as ending inventories at an year-end, but unlike today's work-in-process account, these were recorded only as materials in process. This difference may have produced other differences. As we saw in Section 1, Lyman Mills' general ledger mill accounts collected costs incurred in manufacturing finished goods and showed ending unfinished units as materials in process. Based on this fact, in Section 1, the author noted that these were accounts corresponding to today's work-in-process account. However, these accounts also recorded finished goods inventories. By this they became trading accounts. The earlier "work-in-process" account may have recorded items other than what today's work-in-process account is designed to record. Such a practice seem to have been found also in Schneider's "work-in-process" account. As mentioned earlier, the part Blast Furnaces within Inventory Nos. 73 & 74 recorded supplies. It seems that this indicates the corresponding "work-in-process" account in the ledger recorded supplies as part of ending inventories.

Lawrence Mills' cloth account showed the same features as Lyman Mills' mill accounts did except the record on unfinished work-in-process (cotton). As noted in Section 1, Hoskin and Macve do not mention where unfinished work-in-process was recorded. This issue escapes them completely. The author noted in Section 1 that likely the materials (cotton) in process were recorded in the cotton (materials) account. If so, Lawrence Mills' "work-in-process" account did not record unfinished work-in-process inventories. Also at Schneider and Co., sometimes part of the materials in process seems to have been

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recorded in store accounts. In its inventory records of the first year, "Ore in the Blast Furnaces" were recorded by Inventory No. 66 together with "Ore on the Platform." Such a case seems to have appeared in other years, but it is not always easy to discern materials in store and materials in process from Schneider's inventory records.<sup>63)</sup>

Charlton Mills' "work-in-process" accounts treated by Stone were nearer to today's work-in-process account and were divided into two stages: carding and spinning. Schneider's Inventory No. 69, designed to record the work-in-process inventories of the Grand Forge department, recorded puddled iron and a variety of other intermediate products with different and increasing rates, besides materials in process and supplies. It is possible that the Grand Forge department had multiple "work-in-process" accounts like at Charlton Mills. It is also possible that it had only one "work-in-process" account and this sole "work-in-process" account recorded intermediate products together with materials in process and supplies. Similar entries were being made by the "work-in-process" accounts of Soho Foundry of James Watt, Jr.<sup>64)</sup>

## 5. Verifying Total Costing

One issue remains to be discussed. That is about total costing noted in Section 1 as Point 2. As mentioned in Section 1, at Lyman Mills, Lawrence Mills, and Charlton Mills it was clearly showed that nonmanufacturing costs were charged to the accounts to which manufacturing costs were charged. As noted

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63) In the records of the 1857-58 period, then Inventory No. 22, integrating old Nos. 60, 66 and 72, again recorded both iron ore "on the platform" and "in the furnaces," and this, at the same rates over six different origins of iron ore, two sorts of ore of Chalencey, and likely three other iron ores. This year was selected at random to confirm the recording of work-in-process only as materials continued still after the 1843-44 year.

64) Cf. Williams, *Accounting for Steam and Cotton*, 175.

at the outset of Section 4, the cost records of Schneider and Co., neither those of process costing nor those of job order costing, did not contain information clearly exemplifying such a practice. Instead, the profit and loss accounts included in the balance book indicate that total costing was performed also at Schneider and Co. This might be shown by the profit and loss accounts presented in Section 2 as Exhibits 2-A and B. Signs A, B, and C were added by the author for use in this section. As mentioned in Section 2, Exhibit 2-A shows the profit and loss account of the capital account composed of accounts designed to record owners' equity and noncurrent assets. Exhibit 2-B shows the profit and loss account of the operating account containing accounts such as those discussed in Sections 3 and 4. Exhibits 2-A and B demonstrate that the departmental profits were determined in terms of net profit, for their total (Signs A and A) is expressed in terms of net profit and actually called "Net Profit at the Works (*Bénéfices nets à l'Usine*)."

The item "Sum allocated by the Operations for the General Expenses of Paris (*Somme allouée par l'Exploitation pour les frais généraux de Paris*)" is the allowance, supported by the Works and recorded in the operating account, for the interest and other expenses incurred in Paris House and recorded in the capital account ledger. Exhibits 2-A and B indicate that the allowance was taken into account when determining the departmental profits. The actual interest and other expenses were, according to the capital account ledger (see Section 2), recorded in the "Interest & Discount (*Intérêts & Escomptes*)" and "General Expenses (*Frais Généraux*)" accounts within the capital account, their debit balances at the year end being reproduced in Exhibit 2-A. Exhibits 2-A and B demonstrate that these expenses actually incurred were virtually taken into account in determining the departmental profits, therefore virtually all expenses were charged to the departmental accounts (the gain and loss recorded in Exhibit 2-A are excluded from the discussion). It is therefore certain that total costing was also performed at Schneider and Co.

Exhibit 2-A further indicates that the total amount of the allowance and the net profit determined in the operating account was the profit on the part of the Works. The profit indicated by the word "Whole (*Ensemble*)" (Sign B) is that. This category of profit was called "Gross Profit at the Works (*Bénéfices bruts à l'Usine*)" by profit and loss accounts of other years. Of course, this "gross profit" was entirely different from today's gross profit or margin. The balance sheet of the operating account included in the balance book indicates that the operating account ledger recorded accounts receivable and payable and liabilities owed to bankers and commission agents. Therefore the operating account ledger must have recorded marketing expenses, much of general and administrative expense, and interest revenues and expenses associated with operating activities. Such expenses must have been taken into account when determining the departmental profits. This means that, even in terms of "gross profit" calculation, the cost the departmental accounts would have recorded could have represented total cost.

In fact, Paris House's expenses represented only part of Schneider's nonmanufacturing and interest expenses. Reference to the capital account ledger indicates that most of the expense recorded in its "General Expenses" account was represented by salaries paid to four managers and that most of the interest expense recorded in its "Interest & Discount" account was represented by interest paid to the current accounts of the *gérants*, stockholders, and managers. The "General Expenses" account within the capital account ledger says that, for example, of 35,239.05 fr recorded in Exhibit 2-A as "General Expenses", six thousand francs were for the salary of the resident assistant-superintendent (*sous-directeur*) of Le Creusot Works (the superintendent was younger Schneider), two thousand francs for the salary of the manager in charge of Paris House, fifteen thousand francs for the commission to the engineer (*ingénieur*) responsible for Foundry's activities, and two thousand francs for the salary of an

engineer (*ingénieur*) stationed at the Works. Their total, twenty-five thousand francs, accounted for about seventy percent of the "General Expenses." This percentage is illustrative since the percentage fluctuated between about sixty and ninety percent in the first ten years. Incidentally, the commission and salary of the last two managers could be counted among factory overhead. In any case, the above suggests that Paris House played only a minor role in the administration of the company's activities and that its "General Expenses" represented only part of the whole general and administrative expense.

Three of the above managers had their current accounts opened in the capital account ledger. Salaries and commission were credited to their accounts. The Schneider brothers and stockholders also had their current accounts in the capital account ledger, and fees for *gérants* and dividends were credited to their accounts. Most of the interest expense was represented by the interest paid to the above current accounts. Exhibit 2-A shows 25,832.36 fr as "The Balance of Interest & Discount." On the other hand, the "Interest & Discount" account in the ledger of the same year recorded 90,109.59 fr in total as the interest paid, of which the interest paid to the current accounts represented about sixty percent. Generally the percentage was over seventy percent in the first ten years. This suggests that the main function of Paris House was to maintain stockholders relations. In fact, most of the entries in the profit and loss account within the capital account ledger concern the following two matters: the determination of the final net profit (Signs C and C in Exhibit 2-A) starting from the "gross profit" transferred and the distribution of the final net profit to the stockholders and *gérants*.

Paris House and the capital account played only a passive role in the calculation of profit. The "gross profit" almost represented the result of all the operating activities of the company. Even net profit was virtually determined by the operating account, and this, at the level of departmental profit calculation.

The presentation shown in Exhibits 2-A and B helps to perceive the above facts. This format first appeared in the 1844-45 period. This is the reason for which the profit and loss accounts of this year is selected to present as Exhibits 2-A and B. Profit and loss accounts were inserted in the balance book only from the first year to the 1851-52 year. The departmental profits were generally listed in terms of net profit, but in the first three years and the 1846-47 and 1848-49 years they were listed in terms of "gross profit," that is, the allowance was not taken into account in determining departmental profits. Therefore the profit listed in the schedule reproduced in Exhibit 1 (presented in Section 1) is that calculated in terms of "gross profit." The schedules of the next year show the profits in terms of net profit. The cost they list are therefore total cost. However, it should be noted that the schedule reproduced in Exhibit 1 suggests that the cost it records was also total cost including not only factory overhead but also marketing and administrative expenses, and besides, interest expense. The amount of the profit recorded in Exhibit 1, of course, agrees with that recorded in the corresponding operating account profit and loss account as the profit regarding Plates and Sheets. The cost recorded in the schedule in Exhibit 1 was actually used to determine the profit to be recorded in the profit and loss account. And this cost was that calculated in terms of total cost, in the sense that the indirect costs involved in it comprised not only factory overhead, but also other indirect expenses.

This inclusion of other indirect expenses seems to be confirmed by another source, an entry in *Journal Z* (on p. 53) dated 30 April 1850, which records the transfer of the balances of twenty five expense and other accounts to the credit of the "Grand Forge," "Blast Furnaces," "Workings of Coal (*Exploitation de houille*)," and "Fitting" accounts according to the following proportions: respectively six-tenths, one-tenth, one-tenth, and two-tenths. The total sum transferred amounted to 531,953.30 fr, in which was included the amount, 208,000.00 fr,

“for general expenses of the Paris House (*pour frais généraux de la Maison de Paris*).” The latter amount agrees with that listed in the profit and loss account as the allowance given by the Works to Paris House.<sup>65)</sup> Therefore this compound entry shows that the allowance was actually charged to the departmental accounts. Among the other twenty-four items were expense accounts such as “Taxes (*Impôts*)” (19,568.68 fr), “Insurance (*Assurances*)” (6,088.00 fr), “Salaries (*Appointements*)” (30,315.25 fr), “Interest” (79,562.74 fr), or a variety of “maintenance (*entretien*)” expenses for “General Buildings (*Batiments Généraux*)” (10,298.68 fr), railroads, and so on. Were also included asset accounts such as “Horse and Carriage of the Administration (*Equipage de l'Administration*)” (6,049.13 fr). It seems that most of the sums transferred from the twenty-four accounts represent nonmanufacturing expenses or interest expenses.<sup>66)</sup> Such expenses were actually charged to the above departmental “work-in-process” accounts.

It is certain that total costing was also performed at Schneider and Co. The costs calculated at Schneider and Co. comprised both today's inventoriable costs (manufacturing costs) and period costs (marketing and general and administrative

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65) In this year, the salaries and “allowances on profit (*allocations sur bénéfices*)” of managers accounted for about 80 percent of the general expenses (47,142.67 fr) and the interest for current accounts, about 90 percent of the interest expense (160,857.33 fr).

66) Among the twenty-four accounts is found an account labeled “general expenses” the debited amount of which is 29,822.20 fr. It is possible that the amount related to the expenditures made this year to acquire machinery and the like, “by the direct charge ... to the operation as general expenses” (*Statuts de la Société Schneider et Cie en 1853*). Fujimura, *A Lost Accounting System*, 62 noted that, besides replacement accounting, another practice, writing off newly added assets immediately, was found at Schneider and Co. and that it was done by charging the related amounts to the operating account profit and loss account. However, the above “general expenses” account may indicate that, at least during the period when profit and loss accounts were inserted in the balance books, they were charged to the departmental accounts as “general expenses.”



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costs, and besides, interest expenses). The cost of the unfinished work-in-process described in Section 3 and the pig iron discussed in Section 4 represented such total cost. They were inventoried at such total cost.

### Concluding Remarks

What this article intends to say was described in Section 1. It can be summarized into one sentence: Costing did exist in earlier times, but in a different way. Earlier costing had its own specific features different from today's. Although different, earlier costing was costing, evidence of which was given in Section 3 and Section 4.

That costing existed in earlier times is very understandable as discussed in Section 1 referring to Chandler's view that is mistaken. Where there is a market economy there is costing. The concept of the market economy is given by economists. They presuppose in setting out their theories that enterprises capture costs and use them to compute profits. In fact, Adam Smith and David Ricardo did so. They must have conceived their theories seeing the realities before them. Were they looking at what did not exist? The answer is evident. They saw what did exist.

The cases taken in this article were Schneider and Co. around the 1840s, Lyman Mills in the 1850s, Lawrence Mills around 1850, and Charlton Mills in the early 1810s. The focus was not on historical evolution, but on a historical fact, the fact that existed before the advent of modern costing and modern accounting systems. There were, in the past, accounting systems different from today's but internally consistent.<sup>67)</sup> The objective of this article was to elucidate some basic and common features of the costing in such past accounting systems.

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67) Fujimura, *A Lost Accounting System* gives a complete picture.