Mobilising human resources to build a national communications network: the case of Japan before the Pacific War
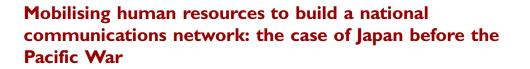
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Abstract

This article analyses labour-intensive workforce strategies in Japan's government-run informational infrastructure (post, telegraph, and telephone) and in the adjunct services associated with their administration in the decades up to the Pacific War. It asks to what extent the growing scale of employment in Japan's communications infrastructure in this period confirms the existence of labour-intensive growth outside the manufacturing sector, and how far the growth of the labour force in post and telecommunications was facilitated by specific labour-absorbing institutions— that is, formal or informal institutions designed to mobilise or incentivise large numbers of employees. The discussion of these two associated questions shows not only that this area of infrastructure provision was highly labour-intensive in terms of the numbers employed and the diverse tasks undertaken, but also that the government-run postal system in effect depended for its growth and development on labour strategies and labour-absorbing institutions analogous to those usually associated with manufacturing development. The article also seeks to establish how far we can see in this sector the gradual improvement in the quality of labour normally associated with the labour-intensive industrialisation process, providing evidence that the evolving institutions were closely associated with a gradual improvement in the quality of labour and its ability to interact with rapidly changing needs and technologies.

Keywords: Japan; postal system; tertiary sector; labour intensie industrialisation; telecommunications

The industrialisation of Japan that commenced in the decades after the mid-nineteenth century presented significant challenges in the form of a persistent shortage of financial capital, raw materials, and technological knowhow. The response to these challenges has been characterised by scholars as 'labour-intensive' industrialisation, which emphasises the importance of labour-absorbing technologies and institutions in the industrialisation process. A similar strategy of mobilising and developing human resources was subsequently pursued in some of the newly industrialising economies of Asia.[1] Much of the focus in this work has been on the utilisation of labour in conjunction with (imported) technologies for industrial production, but the growth of manufacturing was in turn

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[1] See, for example, G. Austin and K. Sugihara (eds.), *Labour Intensive Industrialisation in Global History* (Abingdon, 2013); M. Tanimoto, 'Labour-intensive industrialization and the emerging state in pre-war Japan', in *Paths to the Emerging State in Asia and Africa*, (ed.) K. Otsuka and K. Sugihara (Singapore, 2019), pp. 115–40.

crucially dependent on parts of the tertiary sector, notably the provision of a complex infrastructure providing physical transport of goods, information exchange, and financial and other services. Data on Japan, as on many other economies, show that, even as industrialisation rapidly progressed in the late nineteenth to early twentieth centuries, the tertiary sector consistently employed significantly more workers than did the manufacturing sector. Recent estimates suggest that, at the start of the Meiji period in the early 1870s, the tertiary sector accounted for nearly 30 per cent of Gross Domestic Product compared with around 12 per cent for manufacturing and, through the decades from the 1880s to the 1930s, commercial services of all kinds accounted for well over 30 per cent of net national production. By 1930, transport, communications, and public services (*kōeki jigyō*) alone accounted for 13 per cent of Japan's national product.[2] Similarly to manufacturing, the provision of this key infrastructure relied extensively on human resources, especially in the absence of developments in labour-saving mechanisation. It faced similar challenges in that the required skills and attributes of individual workers, and the ability to manage and exploit new technologies and systems, were in short supply, as were the financial resources needed to get the most out of available human capital. In this sector, too, employers needed to consider the workforce implications of the adoption of new technologies and institutions, and the extent to which their strategies might generate a gradual improvement in the quality of their human capital.

The focus of this article is on labour-intensive workforce strategies in the government-run informational infrastructure (post, telegraph, and telephone) and in the adjunct services associated with their administration, such as postal savings and postal money orders. My objective is not to contribute to analysis of the development of the postal and communications system per se. Rather, the post office and communications system is a window through which we can explore the broader context of labour-intensive industrialisation and think about the development of human resources in industrialisation. The fact that most parts of the tertiary sector have long been identified as labour-intensive would lead us to expect that this would also be true of Japan's communications infrastructure in the pre-war period. If we think in terms of conventional measures of labour intensity such as a high proportion of labour to capital and the significance of labour in total costs, the available data as well as existing scholarship suggest that this was indeed the case. In this respect, Japan's communications infrastructure was far from unique. Postal systems across the late nineteenth to early twentieth centuries world relied extensively on large numbers of workers. By 1914, the British Post Office had around a quarter of a million workers in postal services alone.[3] What is distinctive about Japan is some of its mobilising strategies and the institutions it developed, not least to compensate for a lack of funding and to provide for scarce skills in relation to imported technologies.

In looking at the ways in which the Japanese authorities sought to address the human capital requirements associated with the growth of the post and telecommunications network during the period from the Meiji Restoration of 1868 up to the Pacific War, I address three specific questions, building on the findings of earlier scholars, but also making use of primary sources. Firstly, I ask to what extent the growing scale of employment in the communications infrastructure confirmed the existence of labour-intensive growth

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[2] O. Saito and M. Takashima, 'Estimating the shares of secondary and tertiary sector outputs in the age of early modern growth: the case of Japan', *European Review of Economic History* 20.3 (2016), p. 380; R. Miwa 三和良一 and A. Hara 原朗 (eds.), *Kingendai Nihon Keizaishi Yōran* 近現代日本経済史要覧 [*Outline of Japan's Modern Economic History*] (Tokyo, 2007), pp. 7, 9.

[3] The Postal Museum, Post Office Statistics, *Post Office Employees since 1854*, https://www.postalmuseum.org/wp-content/uploads/2016/10/3_Total_number_of_employees_since_1854.pdf (accessed 30 January 2024).

outside the manufacturing sector. Secondly, I ask how far the growth of the labour force in post and telecommunications was facilitated by specific labour-absorbing institutions—that is, formal or informal institutions designed to mobilise or incentivise large numbers of employees. My discussion of these two associated questions shows not only that this area of infrastructure provision was highly labour-intensive in terms of the numbers employed and the diverse tasks undertaken, but also that the government-run postal system in effect depended for its growth and development on labour strategies and labour-absorbing institutions that were analogous to those usually associated with manufacturing development. The third question I ask is how far can we see in this sector the gradual improvement in the quality of labour normally associated with the labour-intensive industrialisation process? Here, I provide evidence that the evolving institutions of the sector were closely associated with a gradual improvement in the quality of labour and its ability to interact with rapidly changing needs and technologies.

The remainder of the article is structured in line with these three main questions. The next section focuses on the growth and evolution of postal-related employment, underlining the importance of human capital in the operation of the service. I then look at some of the labour-absorbing institutions that were developed and finally offer some examples of the development of new skills and attributes in response to new technologies and new imperatives. A conclusion follows.

Communications: an expanding labour-intensive sector

The modern postal system was established in Japan in 1871. Its development was spearheaded by Maejima Hisoka, who is regarded as the architect of Japan's new postal service. As one of the many Japanese bureaucrats who travelled to Europe and America, Maejima was able in the early 1870s to observe postal systems in Europe, especially in Britain. He admired much of what he saw and his new knowledge was important in developing the new system in Japan and persuading Japanese citizens to use it. Maejima resigned his bureaucratic responsibilities in 1881, though he resumed an official position in communications for a brief period in the late 1880s, when he initiated the early stages of telephone development.[4] Over time, the range of services offered by the communications authorities expanded from mail delivery and telegraph communication to include postal savings, postal money orders, parcel post, telephone services, life insurance, and other services. The branching-out into financial services was in large part the result of seeing existing models in countries such as Britain and Belgium. The centenary of the founding of the post in 1971 sparked a mass of publications on its history, and the development and impact of the system have been explored by a number of scholars. Eleanor Westney's analysis of postal institutions remains insightful, while Sugiyama Shinya has looked at the impact of the new system on regional economies. More recent publications by Patricia Maclachlan, Yabuuchi Yoshihiko, Inoue Takurō, and Hoshina Sadao have added to our understanding. For analysis of some of the adjunct services such as postal savings, we can look to the writings of scholars including Sugiura Seishi, Sheldon Garon, and Tanaka Hikaru.[5] A key message that comes out of this existing scholarship is that the

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[4] For Maejima, see J. Hunter, 'A study of the career of Maejima Hisoka, 1835–1919' (unpublished DPhil. dissertation, Oxford University, 1976); H. Maejima 前島密, *Maejima Hisoka Jijoden* 前島密自叙伝 [*Autobiography of Maejima Hisoka*] (Tokyo, 1997); M. Kobayashi　小林正義, *Shirarezaru Maejima Hisoka* 知られざる前島密 [*The Unknown Maejima Hisoka*] (Tokyo, 2009).

[5] Yūseishō 郵政省 (ed.), *Yūsei Hyakunen Shi Shiryō*　郵政百年史資料 [*Materials on 100 Years of History of the Postal System*], 30 vols (Tokyo, 1970–1971); Yūseishō 郵政省(ed.), *Yūsei Hyakunen Shi* 郵政百年史 [*100-Year History of the Postal System*] (Tokyo, 1971); D. E. Westney, *Imitation and Innovation: The Transfer of Western Organizational Patterns to Meiji Japan* (Cambridge, MA, 1987), chapter 3; S. Sugiyama 杉山伸也, 'Jōhō

proliferation of services and functions associated with the growth of the system repeatedly brought new challenges in relation to finding, retaining, training, and remunerating employees.

Obtaining accurate statistical data on Japan's communications workforce in this period is made more difficult by the frequent restructuring of responsibilities over transport and communications that characterised the early Meiji years, but previous research and contemporary data published by the authorities in departmental bulletins and government statistical reports help provide an overview of the expansion and diversification of the labour force that fell within the jurisdiction of the early bureaus of communications and, from 1885, the new Ministry of Communications (*Teishinshō*),[6] which remained the responsible government body for Japan's postal and telecommunications networks through to the Pacific War and presided over its increasing responsibilities. Some of the data are lacking in detail, and there are some significant discontinuities in the official figures that can be attributed to changes in human resource strategies and/or recording methods, but they are sufficient to provide a guide to general trends. The expansion of the system in itself meant an increasing need for workers. By 1889, for example, there were some 200 domestic telegraph offices and over 4,000 post offices. As of 1912, there were over 1,000 telephone exchanges as well. By 1939, the number of post offices had grown to over 12,000.[7] Individual offices also progressively handled more and more business,

Kakumei' 情報革命 [Information revolution], in *Sangyōka no Jidai (ge), Nihon Keizaishi* 5 日本経済史 5 産業化 の時代（下）[*Period of Industrialisation (2), vol. 5 of Japanese Economic History*], (ed.) S. Nishihara 西原俊作 and Y. Yamamoto 山本有造 (Tokyo, 1990); S. Sugiyama 杉山伸也, 'Jōhō Nettowāku to Chihō Keizai' 情報ネッ トワークと地方経済 [Information networks and regional economies], *Nenpō Kindai Nihon Kenkyū* 年報近代日 本研究 [*Annual Report of Research on Modern Japan*] 14 (1992); P. L. Maclachlan, *The People's Post Office: The History and Politics of the Japanese Postal System, 1871–2010* (Cambridge, MA, 2011); Y. Yabuuchi 藪内吉彦, *Nihon Yūbin Sōgyō no Rekishi* 日本郵便創業の歴史 [*History of the Founding of Japanese Post*] (Tokyo, 2013); T. Inoue 井 上卓郎 and S. Hoshina 星名定雄, *Yūbin no Rekishi: Hikyaku kara Yūsei Min'eika made no Ayumi o Kataru* 郵便 の歴史—飛脚から郵政民営化までの歩みを語る [*History of the Post: Progress from Couriers through to Privatisation*] (Tokyo, 2018); S. Sugiura 杉浦勢之, 'Taishūteki Reisai Chokin Kikan to shite no Yūbin Chokin no Seiritsu—Nisshin Sengo no Yūbin Chokin no Tenkai to sono Seikaku' 大衆的零細貯金機関としての郵便貯 金の成立—日清戦後の郵便貯金の展開とその性格 [Establishment of postal savings as a means of mobilising small savings on a mass scale: development and characteristics of postal savings after the Sino-Japanese War], *Shakai Keizai Shigaku* 社会経済史学 [*Socio-Economic History*] 52. 4 (1986); S. Sugiura 杉浦勢之, 'Nichiro Sengo no Yūbin Chokin no Tenkai to Chochiku Shōreisaku' 日露戦後の郵便貯金の展開と貯蓄奨励策 [Development of postal savings and policies to promote savings after the Russo-Japanese War], *Shakai Keizai Shigaku* 社会経済史学 [*Socio-Economic History*] 56.1 (1990); S. Garon, *Beyond our Means: Why America Spends while the World Saves* (Princeton, NJ, 2012); H. Tanaka 田中光, '20 Seiki Shotō ni okeru Yūbin Chokin to Taishū Chochiku Kōdō—Shizuoka-ken Mishima-chō no Jirei o Chūshin ni' ２０世紀初頭における郵便貯金と大衆 貯蓄行動—静岡県三島町の事例を中心に [Postal savings and mass savings activity in the early 20th century: the example of Mishima-chō in Shizuoka Prefecture], *Rekishi to Keizai* 歴史と経済 [*History and Economy*] 54.2 (2012).

[6] Responsibility for the postal service initially lay with the *Ekiteishi*, a department of the *Minbushō* (Civil Affairs Ministry), but, during the 1870s, the bureau changed its name more than once (*Ekiteiryō*, *Ekiteikyoku*) and also moved between ministries, coming under the new Home Ministry in 1874 and then in 1881 being transferred to the newly established Ministry of Agriculture and Commerce. Throughout the 1870s, the telegraph system came under the Ministry of Industry (*Kōbushō*, also known as the Ministry of Public Works) and, in December 1885, in conjunction with the establishment of the new cabinet system, both the post and the telegraph came under the jurisdiction of the new Ministry of Communications (*Teishinshō*) that was set up to unify all aspects of the transport and communications system. The Ministry of Communications also presided over policies for the development of the telephone.

[7] N. Fujii 藤井信幸, *Terekomu no Keizaishi—Kindai Nihon no Denshin/Denwa* テレコムの経済史—近代日本の電 信電話 [*Economic History of Telecommunications: Telegraph and Telephone in Modern Japan*] (Tokyo, 1998), pp. 24, 70; Yūseishō Yūbin Jimukyoku Yūbin Jigyōshi Hensanshitsu 郵政省郵便事務局郵便事業史編纂室, *Yūbin Sōgyō 120nen no Rekishi* 郵便創業１２０年の歴史 [*120 Years of Postal History from Its Founding*] (Tokyo, 1991), p. 216.

Table 1. Numbers of postal, telegraph, and telephone workers, 1884–1938

Date	Number (to nearest thousand)
1884	20,000
1897	69,000
1920	146,000
1930	209,000
1938	277,000

From Yūseishō 郵政省 (ed.), *Yūsei Hyakunen Shi Shiryō*   郵政百年史資料 [*Materials on 100 Years of History of the Postal System*], 30 vols (Tokyo, 1970–1971), pp. 82–85.

meaning sustained pressure to recruit and retain ever more employees. The labour force statistics for communications workers shown in Table 1 reflect the expansion that characterised the whole pre-war period.

The overall numbers were often categorised according to rank rather than function. The highest levels of appointment were at the standard *chokunin*, *sōnin*, and *hannin* categories of bureaucratic rank. Overall numbers at the top two levels were relatively small, but some of those appointed initially as *hannin*, the third rank in the hierarchy, could expect to progress into the highest levels of the bureaucracy, often moving between ministries and other government appointments as they did so. Kawamura Takeji, for example, worked for the Teishinshō as a postmaster in Shikoku and as head of the Osaka Post Office before later becoming governor of Kagawa Prefecture, president of the South Manchurian Railway, and eventually minister of justice in 1932.[8] Initially, these top groups were exclusively male but, by the early twentieth century, there were a small number of women working as *hannin*, to whom we will return in the next section. Below these levels were the many government workers who were not formally classed as government officials (*kanri*). These employees were divided between *koin* and *yōnin*, which in one contemporary government publication were respectively translated into English as 'employee higher class' and 'employee lower class'. The division between these two groups has been subject to debate in the literature but, in general, *koin* were likely to be more highly educated (having perhaps gone beyond compulsory education) and to be engaged in white-collar work. Some might even be promoted to *hannin* status. By contrast, *yōnin* tended to be those undertaking manual or physical work.[9] There was some fluidity between and within these two groups and their relationship to the work that was actually being undertaken. In the mid-1880s, the earlier category of *yūbin toriatsukaiyaku* (*toriatsukainin*)—literally someone tasked with handling mail—disappeared, to be replaced by *koin*. At the same time, postmen (delivery men), who had been categorised

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[8] Y. Yamasaki 山崎義弘, 'Ittō Yūbin Denshinkyokuchō kara Chiji, Daijin e—Kawamura Takeji Den' 一等郵便電信局長から知事、大臣へ―川村竹治伝 [From first-class postal and telegraph office to governor and minister: the story of Takeji Kawamura], *Yūbinshi Kenkyū* 郵便史研究 [*Postal History Research*] 35 (June 2013), pp. 28–31.

[9] For a discussion of the sparse literature relating to the *koin*/*yōnin* system, see S. Ishii 石井滋, 'Koin-yōnin Seido Kenkyū ni tsuite no Ikkōsatsu' 雇員備人制度研究についての一孝察 [Observation regarding research on the *koin*-*yōnin* system], *Shakaigaku Kenkyū Ronshū (Waseda Daigaku)* 社会学研究論集（早稲田大学） [*Sociology Research Papers (Waseda University)*] 23 (March 2014). Y. Satō 佐藤美弥, '*Warera no Nyūsu* ni Miru Koin-Yōnin no Bunka: 1931nen no Kanri Genbō Hantai Undō ni okeru' 『我らのニュース』にみる雇員・備人の文化― 一九三一年の官吏減俸反対運動にお ける [Culture of *koin*-*yōnin* as seen in '*Warera no Nyūsu*': the 1931 movement against salary reduction], *Rekishi Hyōron* 歴史評論 [*History Review*] 737 (2011), focuses much of his analysis on communications workers, but his emphasis is on participation in the labour movement rather than the actual categorisation.

separately, now became included in the general category of *yōnin*. In the Teishinshō, the broad division between *koin* and *yōnin* was maintained until the late 1930s, but the numbers reported for 1939–44 indicate that almost all former *yōnin* had been recategorised as *koin*.[10] Given these shifting categorisations, therefore, interpreting the available statistical data is not always straightforward. We also find that annual reports issued by the new *Teishinshō* from 1886 through to the mid-1890s somewhat misleadingly suggest a massive reduction in the overall workforce, but this appears to be largely due to the non-inclusion of most delivery workers in the statistics during these years. Whereas there were reported to be only around 5,000 postmen and *yōnin* in 1896, the following year, there were over 44,000 out of a total workforce of nearly 69,000. There is a further dramatic mismatch between the 1907 and 1908 data, which show the total number of *Teishinshō* employees as falling from over 170,000 in 1907 to slightly over 87,000 in 1908. This is explained by the abolition of the *Teishinshō*-administered Railways Bureau (*Tetsudōkyoku*) in December of 1907, to be replaced by a new Imperial Railways Bureau (*Teikoku Tetsudō Chō*) within the Home Ministry.[11] The numbers working in communications (post, telegraph, and telephone), however, were relatively unaffected and resumed their upward trajectory, as suggested in the general ballpark figures provided in Table 1. So, while these estimates must be approached with some caution, we can be left in no doubt that the Ministry of Communications was a very large employer.[12]

Knowing exactly what many of these employees did, however, is a major challenge. Although the extent of employee data broken down by task is limited, some broad trends can be identified. Firstly, the post, telegraph, and telephone together accounted for a significant proportion of all Ministry of Communications employees throughout the pre-war period and, particularly in the early decades, a significant majority of workers were involved in mail-related work. In 1872, the year after its founding, a high proportion of the more than 1,200 workers said to be employed were designated as *yūbin toriatsukaiyaku* (*toriatsukainin*)—those handling the post—with only 119 being recorded as *shūhainin*—those specifically engaged in collection and delivery. By 1884, the total number of employees had reached over 20,000; the number designated as *yūbin toriatsukainin* had reached over 5,000, while the number of *shūhainin* had expanded rapidly over the previous three years to well over 12,000.[13] These employees, who were generally categorised as *yōnin*, were recorded as numbering over 100,000 by 1907, although lower figures were offered for some later dates.

Secondly, the data show that a growing proportion of the total workforce comprised *koin*, reflecting the growth of clerical and office tasks associated with the expansion of new services such as postal savings, postal money orders, and telephone communications. By 1918, reports indicated that the number of *koin* surpassed the number of *yōnin* and the Ministry of Communications annual bulletin reported that, in 1938, there were over 122,000 *koin* as opposed to nearly 99,000 *yōnin*.[14] Thirdly, the expansion of clerical and office employment within the communications system was associated with a small but significant growth in female employment. In 1906, official data recorded only around

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[10] The reasons for this recategorisation are not explained in the communications statistics, but similar changes are found among other groups of government employees.

[11] *Ekitei Nenpō* 駅逓年報 [*Communications Yearbook*] 1908, p. 2.

[12] Even larger was the national railways, which claimed to have close to 200,000 employees by the mid-1920s. See Tōyō Keizai Shinpōsha 東洋経済新報社 (ed.), *Meiji Taishō Kokusei Sōran—Sōritsu 80 Shūnen Fukkoku* 明治大正国勢総覧—創立８０周年復刻 [*Overview of the State of the Country in the Meiji-Taishō Eras: 80th Anniversary Edition*] (1927, republished Tokyo, 1975), p. 621.

[13] Figures from Yūseishō, *Yūsei Hyakunen Shi Shiryō*, vol. 30, pp. 82–83.

[14] *Teishinshō Dai 52 Hō* 通信省第５２報 [*Ministry of Communications Bulletin 52*], cited in Yūseishō, *Yūsei Hyakunen Shi Shiryō*, p. 85.

3,300 female post, telegraph, and telephone employees but, by 1919, the number had increased to over 23,000. This increase in female communications workers was part of the broader growth in women's white-collar employment, especially in the interwar years.

The expansion of the post and telecommunications workforce, and the increasing number of workers employed in the associated financial and other services of the system, therefore confirms the existence of labour-intensive growth outside the manufacturing sector—the focus of my first question. Of course, there was also capital expenditure. Developing the physical infrastructure for the transport of mail and parcels required significant investment, as did the construction of the telegraph network, telephone exchanges, and telephone equipment. Office workers not only needed buildings to work in, but increasingly required typewriters, calculators, and other supplies. Yet, through into the interwar years, as in most service industries, the communications sector continued to rely to a major extent on human capital. The very nature of its business made it difficult to substitute for human capital and, as the demand for its services grew, so too did its need for more workers. An indicator of this is the amount of expenditure on labour. At the time of its founding, around 83 per cent of the total budget of the post office was estimated to be spent on personnel and that proportion remained fairly constant over subsequent decades.[15]

Institutional development in post, telegraph, and telephone

In line with our focus on labour intensity, this section addresses my second question by suggesting some examples in the communications sector of what might be thought of as labour-absorbing institutions. These embraced both formal institutions in the form of rules and regulations and informal ones, whereby the authorities drew on pre-existing systems and cultural assumptions to persuade employees to think about and undertake postal system work in a particular way. An in-depth analysis of the institutionalisation of communications employment lies beyond the scope of this article, but it is apparent that many of these strategies were devised in an attempt to recruit and retain workers in the face of financial and other constraints that limited the ability of authorities to rely purely on wage incentives. We find that problems in securing human capital took multiple forms and also generated sometimes unanticipated responses. Recruitment of postmen to undertake collection and delivery was obviously a major element of the whole system in the early years, but how were the authorities to ensure, for example, that such employees possessed appropriate attributes? We have limited information on the mechanisms whereby many postmen were employed and vetted for the task, but the *Tōkyō Nichi Nichi Shinbun* reported the year after the founding of the service that better numbering of residential houses was becoming more important given that many postmen were still illiterate.[16] Dishonest postmen were another problem mentioned in contemporary reports. One postal chief in Osaka was said to have resigned because a local postman had thrown thousands of letters into the river.[17] And there was little experience to draw on when it came to understanding better the speed or efficiency with which many of the new tasks facing employees could be carried out. Trial and

[15] Yabuuchi, *Nihon Yūbin Sōgyō no Rekishi*, p. 301; Yūseishō Yūbin Jimukyoku Yūbin Jigyōshi Hensanshitsu, *Yūbin Sōgyō 120nen no Rekishi*, p. 41.

[16] *Tōkyō Nichi Nichi Shinbun* 東京日日新聞, 28 June 1872. Universal elementary education did not become a reality in Japan until around the turn of the century.

[17] H. Maejima 前島密, 'Irōkai ni Nozomite no Kangae' 慰労会にのぞみての考え [Thoughts on attending a commemorative dinner], *Tsūshin Kyōkai Zasshi* 通信協会雑誌 [*Communications Association Journal*] 7 (1909), p. 45.

error were invariably the order of the day. Maejima's passion for the new initiative was such that he reportedly made his family and servants participate in letter-sorting trials, to see how fast these things could be done.[18] Whether they shared his enthusiasm is unclear.

The remainder of this section focuses on three areas of institutional development that proved crucial to the growth of the postal and telecommunications system and the services associated with it. One was the authorities' extensive reliance, particularly in the early years of the 1870s, on individuals and groups who were already involved in existing communications systems—systems with which the new postal service was initially forced to compete, but whose employees might also have skills that were transferable to the needs of the new network. A second, closely associated strategy was the decision to mobilise many employees indirectly: instead of being direct employees of the government or the postal authorities, they were utilised on a subcontracting or franchise basis, with their remuneration contingent on the economics of the services that they undertook. That such workers were often not included in the official headcount of employees means that official data if anything underestimate the number of workers in the sector. Thirdly, the authorities increasingly made use of the national importance of the service as a tool to attract and motivate employees. Working for a service marketed as critical for the formation of the nation and for national and international identity came to be seen as a badge of honour.

Let us start with the mobilisation of existing communications workers. In the early days, the new postal service (initially limited to the Tōkaidō route) faced serious competition from the courier (*hikyaku*) system that had prevailed under the aegis of the Tokugawa regime.[19] The work of the couriers, who undertook the actual carriage of goods and information, was closely integrated with the operation of the postal relay stations along the country's main highways; many of the forwarding agents (*toiya*) were also postal station managers or officials. In the early months, when there was no national monopoly, there was serious potential for conflict over the differential rates charged by the official service and the couriers between the major cities. Competition on the routes between Tokyo and Yokohama, and between Tokyo and Kyoto, was particularly fierce. Yet buying out the couriers was a remote prospect. The Communications Bureau was subject to the dictates of the Finance Ministry, and so it had to compete for funding with a host of other imperatives. New initiatives tended to need new finance, which was in itself something of a discouragement to move away from the existing communications system. The government just did not have the necessary funds to buy out the couriers, and the perceived threat to their livelihoods aroused concern and hostility among them. One government leader, Ōkuma Shigenobu, reported that feelings were running so high that there were rumours of assassination threats against the government officials involved.[20]

A possible alternative strategy to a buy-out was rapidly conceived. In extending the government service west from Osaka, the authorities chose to solicit the services of the Osaka forwarding agents as official subcontractors,[21] and this was the model that would be followed as the service expanded to cover the country's major routes. The adoption

[18] H. Maejima 前島密, *Yūbin Sōgyō Dan* 郵便創業談 [*Stories of the Founding of the Post*] (reprinted Tokyo, 1951), pp. 69–71. Except where indicated otherwise, references to *Yūbin Sōgyō Dan* are to this edition.

[19] For the Edo-period system, see C. N. Vaporis, *Breaking Barriers: Travel and the State in Early Modern Japan* (Cambridge, MA, 1994).

[20] S. Ōkuma 大隈重信, 'Gojūnenrai no Yūjin Maejima Hisoka Kun' 五十年来の友人前島密君 [My friend of 50 years, Maejima Hisoka], *Teishin Kyōkai Zasshi* 通信協会雑誌 [*Communications Association Journal*] 132 (1919), p. 2.

[21] Yabuuchi, *Nihon Yūbin Sōgyō no Rekishi*, p. 178. For the old courier system, see *ibid.*, chapters 3, 4. The government's strategy towards the couriers is also discussed in Maclachlan, *People's Post Office*, pp. 41–42.

of such a policy nationwide was not straightforward, and the sustained negotiations between the postal authorities and representatives of the couriers over the months after autumn 1871 often took place against a background of ill-feeling and antagonism. Sasaki Sōsuke, deputy head of one of the largest forwarding agents in Tokyo, acted as something of an intermediary between the two sides. The negotiations culminated in a proposal in the spring of 1872 that existing couriers should collectively form a transport company undertaking the carriage of goods, money, and passengers. The government would also have the option of delegating to the company the transport of specified mail items or mail routes. In May 1872, a group of the major Tōkaidō couriers submitted to the government a formal petition to be allowed to found such a transport company and for it to become the government's 'official carrier'.[22] The resulting *Riku'un Moto Kaisha* (later *Naikoku Tsū'un Kaisha*) helped to sustain the courier companies' livelihoods while minimising the cost of expanding the carriage of the post. Over the initial years after its founding, the company benefited from substantial government commissions and supportive measures. The Finance Ministry, for example, exempted the new company from any claims made on the basis of the historical debts of the courier companies and post stations that had merged into it.[23] Over time, all remaining private courier companies were compelled to join the new company. A similar collaboration was extended in the early days to the postal station system. Outside the large post offices (*yūbin yakusho*), the first 179 post-handling bureaus (*yūbin toriatsukaisho*) were mostly located in former relay stations, under the management of former courier or post station employees with long experience in the handling of transport and communications.[24]

The authorities' establishment of a government monopoly over the carriage of all post in 1873 precluded any further competition from the private sector, but the objective of providing a universal service to all parts of the nation posed new challenges that required different solutions, leading to a rather different form of subcontracting. The traditional forwarding agents and relay stations were almost entirely restricted to the main routes between large towns and cities. Particularly after the formal abolition of the relay stations (*shukueki*) in 1872, recruiting competent individuals to operate thousands of local post offices away from these major routes and to administer the mail-related services they supplied proved a major challenge. It was also potentially very costly. While the authorities felt that they had little choice but to directly employ full-time workers to run the larger post office operations in the cities and major towns, extending such a system to thousands of communities across the archipelago was logistically challenging and expensive in terms of personnel and other resources. The problem was addressed through the system of what were initially referred to as 'post-handling offices' (*yūbin toriatsukaiyaku*) and, after 1886, 'third-class post offices' (*santō yūbinkyoku*), renamed in 1941 *tokutei yūbinkyoku* (privately owned post offices).[25] Under this system, there were three tiers of post office. The workers in first-class and second-class offices, which were located in major towns and cities, were direct government appointees working in offices directly controlled by the postal authorities. Those in the smaller third-class offices, which were scattered across the country, were not. Workers at the third-class offices vastly outnumbered those in the higher-tier post

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[22] Nihon Tsū'un KK 日本通運KK, *Nihon Tsū'un KK Shashi* 日本通運 KK社史 [*Nihon Tsū'un KK Company History*] (Tokyo, 1962), p. 127.

[23] *Yūbin Hōchi Shinbun* 郵便報知新聞, 24, 10th month Meiji 5.

[24] Yabuuchi, *Nihon Yūbin Sōgyō no Rekishi*, p. 204.

[25] Some of the official statistics suggest that, long before 1941, there was a subcategory of third-class post offices that were designated *tokutei yūbinkyoku*, but not all the data differentiate this subcategory. Maclachlan uses the English term 'commissioned postmasters'.

offices. In the mid-1880s, there were already over 4,600 'franchised' post offices as opposed to only 56 directly controlled ones.[26] This system, which has been discussed in some detail by scholars such as Patricia Maclachlan, Tahara Keisuke, and Yabuuchi Yoshihiko, was in effect the recruitment as local postmasters of local headmen, village chiefs, businessmen, or landlords—individuals now often referred to as 'local notables' (*meibōka*). Potential appointees were men of at least 20 years of age, who possessed some property, and were resident in the area. They were allowed to undertake their postal duties in conjunction with other 'respectable' income-earning activities and were expected in return to offer their house and land for postal system use. They were also required to be literate and numerate, with some knowledge of Western script. They could appoint employees where necessary to carry out local postal work and offer them a wage for doing so.[27] Individuals deemed suitable for the post of local post-master were identified through the use of public announcements and personal contact. Local government officials were often asked to try and find appropriate appointees. When the Hakodate Post Office opened in 1872, Maejima Hisoka himself wrote to the mayor to solicit his assistance in finding suitable individuals.[28] This franchising strategy not only played a key role in the provision of human resources; it also at a stroke addressed two other key problems: lack of public trust in the service and shortage of capital. Utilising existing local hierarchies and values made for respectability and enhanced community confidence in the new system that was being offered. In some cases in which the appointed individuals were conservative enough to remain contemptuous of payment in cash, they were initially even paid in rice, as under the traditional pre-Restoration stipend system.[29] The result was a nationwide system that has been seen as somewhat analogous to the sub-post offices that emerged in Britain, which, by the First World War, numbered over 23,000 compared with little over 1,000 main post offices.[30]

The most important element of this particular labour-absorbing institution was perhaps that the new third-class postmasters were employed at a fraction of the cost of a direct government employee. In Maclachlan's words, the attraction of the new system for the Meiji state was that 'it promised to facilitate the expansion of communications without draining public coffers or forcing unpopular increases in postage rates'.[31] Having permission to engage in other income-earning activities was an open acknowledgement that third-class postmasters were not expected to make a living purely by acting in a postmaster capacity. The authorities themselves acknowledged in their 1874 report that 'the post offices in the provinces are owned by the postmasters, whose salaries

[26] Yūseishō Yūbin Jimukyoku Yūbin Jigyōshi Hensanshitsu, *Yūbin Sōgyō 120nen no Rekishi*, p. 39. The *Teishinshō Hō* (1903), pp. 374–83, lists all employees at first-class and second-class post offices by rank and task. No city had more than one first-class office but Tokyo, for example, had over 20 second-class offices as well. Other cities also had a number of second-class offices.

[27] Maclachlan, *People's Post Office*; Yabuuchi, *Nihon Yūbin Sōgyō no Rekishi*; Inoue and Hoshina, *Yūbin no Rekishi*; K. Tahara 田原啓介, 'Senzenki Santō Yūbinkyoku no Keiei Jittai' 戦前期三等郵便局の経営実態 [Managerial situation of third-class post offices in the pre-war period], *Yūsei Shiryōkan Kenkyū Kiyō* 郵政資料館研究紀要 [*Postal Archive Research Contributions*] 2010, https://www.postalmuseum.jp/publication/research/docs/research_01_05.pdf (accessed 7 May 2022).

[28] Maejima to Shiratori 21st/2nd month, Meiji 5, 29 March 1872, reprinted in Yūseishō, *Yūsei Hyakunen Shi Shiryō*, vol. 24, p. 23.

[29] Maejima, *Yūbin Sōgyō Dan*, p. 99.

[30] Inoue and Hoshina, *Yūbin no Rekishi*, pp. 128–29. Unlike in Japan, however, many of the sub-post offices in Britain, as well as a few of the larger offices, were, as early as the 1890s, officially run by women. For the employment of women in the UK's Royal Mail in the early twentieth century, see M. J. Crowley, '"Inequality" and "value" reconsidered? The employment of post office women, 1910–1922', *Business History* 58.7 (2016).

[31] Maclachlan, *People's Post Office*, p. 43.

Table 2. Numbers and remuneration of selected postal employees

Date	Number of employees		Average monthly remuneration (¥)	
	Kan'in	*Yūbin toriatsukaiyaku*	*Kan'in*	*Yūbin toriatsukaiyaku*
1875	252	3,236	13.853	0.336
1876	323	3,876	15.697	1.557
1877	196	4,099	24.056	1.936
1878	164	4,211	21.065	2.173
1879	147	4,434	21.336	2.393
1880	238	5,102	17.567	2.519
1881	270	5,683	18.942	2.680
1882	365	6.064	18.188	2.456
1883	531	5.566	25.512	4.201
1884	631	5.603	19.229	4.980
1885	708	5,541	20.204	3.079
1886	709	4,701	22.565	3.693

Data collected by Tahara Keisuke and reproduced in Y. Yabuuchi 藪内吉彦, *Nihon Yūbin Sōgyō no Rekishi* 日本郵便創業の歴史 [*History of the Founding of Japanese Post*] (Tokyo, 2013), p. 241.

are very small and entirely insufficient to compensate them for their services alone'.[32] Such income as they received was largely related to the extent of the business that they undertook. One later recollection stated that a third-class postmaster was initially paid 4 *mon* for every 100 *mon* of stamps that he managed to sell.[33] Four per cent of turnover was of itself never likely to bring riches, even where a local post office was generating significant income for the coffers of the ministry, but, in localities that were sparsely populated or where there were relatively few users of the service, the income accruing to the postmaster was likely to be particularly low. Table 2 provides a comparison of the monthly earnings in the early years of full-time postal officials (*kan'in*) and their counterparts in the local post offices, referred to here as *yūbin toriatsukai yaku*. It should also be noted that few third-class postmasters had any access to even a modest pension scheme.

A third crucial institutional element was the promotion of a national narrative to underline the expansion of a national postal service. The belief that the new postal service was a system of national importance was not universally shared, particularly in the early 1870s. Even officials of the new regime responsible for communications could be hostile. In the autumn of 1871, Maejima Hisoka, who had just returned from his period abroad, met with the newly appointed head of the Communications Bureau, Hamaguchi Goryō, and was horrified at Hamaguchi's statement that, while the telegraph, as a new innovation, would naturally come under government control, the post was 'a lowly trade' long carried out by couriers and, if the new system was successful, it too would be

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[32] Imperial Japanese Post Office, 3rd Report, 1874, p. 5, enclosed in NA (National Archive) FO 46/205, no. 62, Parkes to Derby, 3 April 1876.

[33] N. Yamamoto 山本直太朗, 'Yūbin no Konjaku' 郵便の今昔 [Post, past and present], *Taiyō* 太陽 [*Sun*] 33 (1927), p. 551. The *mon*, which predated the Restoration, was the smallest currency unit circulating in the early Meiji period.

transferred to the existing couriers.[34] It was in response to such conservative attitudes that the preamble to the Postal Regulations of spring 1872 included the statement that 'in the countries of Europe and America importance is attached to the postal authorities' and emphasised that these foreign governments underlined that importance by the allocation of significant public funding.[35] The allocation of significant funding was, as noted earlier, a major problem for Japan, but the subcontracting of much of the work to the private sector noted above not only helped to minimise the consequences of a shortage of national funds, but also had the added advantage of providing an opportunity to promote a broader national narrative.

Although a number of senior members of the early Meiji government, including Maejima himself, were committed to rejecting the traditional doctrine of *kanson minpi* (respecting officials, deriding the public), this did not prevent them from using it as an inducement to work for the new regime and the services it offered. The concept of an official position remained attractive to many even well before the institutionalisation of the bureaucracy from the 1880s.[36] Designating the early post offices as *yakusho*, making specific use of the word used to refer to government offices, helped to highlight this official status. Although they lacked formal bureaucratic rank, the third-class postmasters were effectively treated in the same way as *hannin*, denoting their honourable status and work in the community. The prestige attached to official positions was, in Maejima's words, used to attract 'gentlemen of appropriate capital'.[37] That the Meiji government could get away with paying the local postmasters so little in the early years was precisely because of the attraction of having an official position in what was trumpeted as a key national endeavour. For the present, the *Ekiteiryō* reported,

> they are satisfied with the small payments made them, because they are proud of being employed in the services of the government, and understanding the true object of the establishment of the postal system, they deem it honourable to voluntarily perform such duties as tend to benefit and promote the welfare of the public.[38]

But the benefit was far from being one-directional. While the postmasters might benefit from the kudos attached to a quasi-official position, the mobilisation of men of local influence and prestige had the capacity to enhance the public reputation of the new service and increase the levels of trust in its operation. Similar appeals were utilised to promote other parts of the service. Garon notes how the government later sought to mobilise the new middle class and other elements of society to make injunctions to saving[39]—in effect an additional form of 'subcontracting'. Informal as well as formal institutions were thus developed to enhance the labour intensity that characterised the communications infrastructure.

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[34] Maejima, *Yūbin Sōgyō Dan*, p. 29. For Hamaguchi, see K. Sugimura 杉村広太郎, *Hamaguchi Goryō Den* 濱口梧陵 伝 [*Biography of Hamaguchi Goryō*] (Tokyo, 1920).

[35] Maejima, *Yūbin Sōgyō Dan*, pp. 66–67 gives the text of this preamble.

[36] For the development of the Meiji bureaucracy, and the associated introduction of more formal qualifications for entry, see Y. Shimizu, *The Origins of the Modern Japanese Bureaucracy* (London, 2020), chapters 2–4.

[37] Maejima, *Yūbin Sōgyō Dan*, p. 98.

[38] Imperial Japanese Post Office, 3rd Report, 1874, p. 5, enclosed in NA FO 46/205, no. 62, Parkes to Derby, 3 April 1876.

[39] Garon, *Beyond our Means*, pp. 155ff.

Improving the quality of human capital for the imperatives of new technologies

In response to the third question, I show in this section how some of the labour-using strategies that were adopted resulted in a gradual improvement in the quality of labour. The proliferation during the decades after 1871 of the number of tasks associated with the operation of the communications system required workers with different attributes and skills. Post offices alone, it has been observed, operated not only as centres of mail handling, but, by the early twentieth century, as banks, insurance agents, and providers of social welfare.[40] Even jobs considered menial and categorised as *yōin* required a range of skills. A postman, for example, was expected to possess both physical health and personal integrity. In some cases, he might also be required to possess or drive a vehicle of some kind. Hand-drawn carts were common across the country well into the Taishō period, while horse-drawn carts were used for both longer and shorter distances. Some of the longer-distance horse-drawn postal carts operated on a subcontracting basis, from which some drivers made significant profits, but the communications authorities also had their own carts. In 1911, Tokyo's central post office was reported as possessing a total of 85 horse-drawn carts for the local carriage of regular mail and parcels.[41] Only in the 1920s did the use of mechanised vehicles for the carriage of mail in cities really take off, in turn requiring the recruitment of drivers and maintenance workers. When it came to longer-distance services, some major postal routes in both Kantō and Kansai were, from the late 1870s onwards, able to make use of the new railways and such use expanded rapidly in conjunction with expansion of the railway network. This too demanded a new range of skills. Maintaining the machinery that loaded and unloaded mail on and off trains required engineering skills, for example, while workers sorting mail on long-distance night trains expected to be provided with food or drink. The number of new jobs seemed inexhaustible.

Some of the proliferating tasks were related to existing technologies, meaning that skills and manpower might be transferable; others were completely new, so experience and knowhow were totally lacking. The need for more skilled or specialised human capital that progressively arose was met through several means. One was the expansion of school education. Take-up was initially low but, by *circa* 1910, over 90 per cent of school-age children, both male and female, were in receipt of six years of compulsory education. The growth of compulsory education provided the communications system with an expanding pool of literate and numerate workers, who could be directed into the many communications jobs for which such skills were essential. A postman needed to have some literacy to deliver letters correctly. Compulsory education also helped to equip men and women to serve at post office counters, handle postal savings, keep records, and draft reports. It served as the foundation for the huge growth of white-collar employment that took place after the turn of the century. Such education was not in itself, however, sufficient training for the enormous range of tasks that the operation of the service entailed, leading to the institution of a second response in the form of internal training programmes to provide employees with requisite skills. Some of these training courses were short— maybe just a few weeks. Others were somewhat longer and were geared to the expectation that the recipient employees would commit to long—if not lifetime—service with the postal and communications authorities. Thus, although many aspects of the postal system relied on existing skills and learning by doing, the concept of in-house training was recognised as important even in the early days. In May 1872, for example, a limited apprenticeship system was introduced whereby the *Ekiteiryō* sought to recruit ten young men aged

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[40] Maclachlan, *People's Post Office*, p. 65.
[41] Inoue and Hoshina, *Yūbin no Rekishi*, pp. 164–71.

around 20 to learn how to handle international mail. The background of those who applied is unclear, but candidates were expected to possess some knowledge of English and of Western-style accounting, implying that they would have to have received a good level of education. A range of tests included translating up to 30 English sentences and demonstrating understanding of a high-school-level geography book. They were to be paid ¥7 per month for two years, although the authorities had the right to transfer them to formal employment earlier than that. They were trained in translation and also spent time in the foreign post offices in Yokohama that were run by countries such as Britain, France, and the USA. Other postal employees were designated to work with Samuel Bryan, the American who was put in charge of the new Japanese post office in Yokohama, and Bryan was paid an additional ¥100 per month for training them in international mail management.[42]

If specialised training was required in the case of the operation of the post, this was even more true in the case of other hitherto unknown technologies. The telegraph gave rise to some of the first instances of internal training in communications. Reliance on foreign engineers was very costly in the face of increasing demand[43] and, in the second half of 1873, a training school was established in Tokyo in what is now Shiodome. New facilities included a telegraph line for students' practice. Recruits were aged 12 to 20, ideally with knowledge of a foreign language. Additional training facilities were subsequently established in Osaka to serve the west of Japan. By the 1890s, there were more than 1,500 graduates of what was initially the Tokyo Telegraph School (*Denshin Gakkō*). Among them was the author Kōda Rohan, who worked as a telegraph engineer in Hokkaido before turning to literature.[44]

The introduction of the telephone from the late 1880s posed similar challenges, requiring the training of engineers, telephonists, and a host of other workers. The number of telephone operators in the ministry was reported to have mushroomed from just 69 in 1890 to over 2,000 by 1895.[45] With the telephone system initially serving the largest cities, a high proportion of this workforce was concentrated in Tokyo, Yokohama, Nagoya, and the cities of Kansai. As the system expanded, so did the number of employees. By 1903, post, telegraph, and telephone offices employed nearly 3,000 telephone operators as well as a host of engineers, technicians, and other telephone workers. During the Taishō period, the number of telephonists increased rapidly to over 38,000 in 1919.[46] In these cases, too, skills were provided through several channels. Compulsory education gave workers essential literacy and mathematical skills, while communications was among the many beneficiaries of the new higher education offered by institutions such as the Imperial College of Engineering (*Kōbu Daigakkō*), which produced over 20 graduates specialising in telegraphic engineering in the early 1880s.[47] For many scarce skills,

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[42] K. Suzuki 鈴木克彦, 'Kyūkan Shōkai (7) Teishin Kyōiku Shi' 旧刊紹介（7）「逓信教育史」[Introduction to old publications (7) *Teishin Kyōiku Shi* (*History of Communications Education*)], *Yūbin Shi Kenkyū* 郵便史研究 33, March 2012, p. 43. Since Bryan was already paid ¥450 per month, rising to ¥500 after the international postal treaties were signed, his total salary was inordinately high.

[43] Data suggest that a majority of all foreign employees in the Meiji period were earning in excess of $50 per month and a significant number far more than that (H. J. Jones, *Live Machines: Hired Foreigners and Meiji Japan* (Vancouver, BC, 1980), p. 152, Table 6). Bryan's salary was not atypical of the top earners, who received more than their Japanese bosses and members of the cabinet.

[44] Suzuki, 'Kyūkan Shōkai (7) Tsūshin Kyōiku Shi', pp. 44–45. The school was in 1890 renamed the Tokyo Post and Telegraph School, to be replaced in 1905 by the newly established *Tsūshin Kanri Renshūsho*.

[45] *Nihon Teikoku Tōkei Nenkan* 日本帝国統計年鑑 [*Imperial Japan Statistical Yearbook*] 14 (1895), p. 795.

[46] *Nihon Teikoku Tōkei Nenkan* 日本帝国統計年鑑 19 (1900), p. 795; *Teishinshō Hō* 通信商報 [*Ministry of Communications Bulletin*], 1903, p. 161; *Nihon Teikoku Tōkei Nenkan* 日本帝国統計年鑑 40 (1921), pp. 246–47.

[47] Kyū Kōbu Daigakkō Shi Shiryō Hensankai 旧工部大学校史資料編纂会, *Kyū Kōbu Daigakkō Shi Shiryō* 旧工部大学校史資料 [*Materials on the History of the Former University of Engineering*] (Tokyo, 1931), pp. 349–51.

however, the service looked to internal training programmes and, in a few cases, foreign study. In 1903, for example, three engineers were sent for a year's foreign study in either Britain or the USA to learn about telephone and telegraph connections, telephone equipment, and the operation of exchanges,[48] but such foreign study was for the most part limited to the acquisition of skills that were deemed to be unavailable in Japan. The majority of workers continued to be trained at home, either on the job or through designated internal training courses.

A third means was diversification of the workforce to employ workers with a wider range of attributes. Perhaps most conspicuous here was the growth in the number of female employees. The gendered labour market was exploited to help meet a number of recruitment challenges, resulting in the recruitment of female workers not only to undertake tasks that were deemed suited to feminine attributes, but also in some cases to compensate for shortages of male workers. A prime example of a communications job deemed appropriate for a woman was telephony. As early as 1890, the popular press was noting how women were being trained to operate the new telephone exchanges[49] and the proportion of female workers in the overall workforce, while initially very small, grew considerably from the 1890s onwards. The ministry's report for 1890 noted the existence of 13 female employees within the bureau who were responsible for telegraphy and telephony, paid on average 15 *sen* per day.[50] By 1900, 75 per cent of the cohort of over 700 telephone operators were female and statistics for 1919 indicate the existence of only two male telephone operators working alongside nearly 39,000 women.[51] In a highly gender-segregated labour market, being a telephone operator, with its associated *koin* status, had become a woman's job; by contrast, even after the First World War, few women were employed in capacities such as engineers or postmen. While telephone operators were almost exclusively female, dispatch and delivery workers were all male.[52]

The employment of women more broadly was a major factor in enhancing the overall quality of human capital in parts of the communications infrastructure. After the turn of the century, we find a growing number of women in jobs that were associated with *koin* status, in line with the overall growth of female white-collar employment. The 1903 ministry report notes the existence of nearly 15,000 female *koin*, while the 1908 report identifies nearly 8,000 women employed directly by the ministry (including in first-class and second-class post offices). By 1921, the Ministry of Communications claimed to be employing over 26,000 female *koin*, many of whom served as clerical staff in first-class or second-class post offices, often engaged in the administration of services such as postal savings, money transfers, and, from 1916, postal insurance (*kan'i hoken*).[53] As noted earlier, a small number of women also actually began to be appointed to *hannin* status—the lowest tier of official bureaucratic appointment. The appointment of women to *hannin* employment has been analysed by Matsuzawa Yūsaku, who shows how the employment of women in the

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[48] *Teishinshō Hō* (1903), p. 5.

[49] See, for example, *Jiji Shinpō* 時事新報, 3 October 1890. See also J. Hunter, 'Technology transfer and the gendering of communications work: Meiji Japan in comparative historical perspective', *Social Science Japan Journal* 14.1 (2011).

[50] *Ekiteishō Daigonen Hō* 駅逓省第五年報, 1890, p. 53. Male workers were identified as receiving a daily wage of between 10 *sen* and 55 *sen* per day (*ibid.*, pp. 52–53).

[51] *Nihon Teikoku Tōkei Nenkan* 19 (1900), p. 795; *Nihon Teikoku Tōkei Nenkan* 40 (1921), pp. 246–47.

[52] *Teishinshō Nenpō Taishō 10nen* 逓信省年報大正十年 [*Ministry of Communications Annual Report for 1921*], pp. 15–16, 54–55; *Nihon Teikoku Tōkei Nenkan* 40 (1921), pp. 246–47.

[53] *Teishinshō Hō* (1903), p. 53; *Ekitei Nenpō* (1908), p. 21; *Annual Report of the Department of Communications* (Tokyo, 1921), pp. 15–16. The commitment to running financial services of this kind that would be accessible to all members of the population, including those on low incomes, dated from the 1870s.

Savings Bureau was driven by the need for cheaper labour associated with the administrative reforms that followed the Russo-Japanese War and an attempt to attract women who could earn more in the private sector by offering them higher official status. Women progressed and were promoted more slowly than their male counterparts, but a small but growing number worked for extended periods, including after marriage.[54] That women were potentially and actually an important resource for the expansion of the service was acknowledged quite explicitly by the authorities. The ministry's 1908 report, recounting efforts to incentivise employees by improvements in status and higher pay, noted the importance of categorising telephone operator trainees as *koin*, relaxing the approval procedures for the appointment of female office workers, clarifying the kinds of work that women were permitted to undertake, and allowing the employment of married women as telephone operators where this was deemed to be appropriate.[55] While women were never paid equally to their male counterparts, nor provided with access to the highest levels of the bureaucracy or formally recognised as crucial to the operation of the third-class post offices, they were nevertheless increasingly important in the work undertaken under the aegis of the Communications Ministry, making a significant contribution to enhancing the quality of the human capital in the sector.

In conclusion: incentives and disincentives

Particularly in its early years, when citizens had to be 'educated' in the concept of a state-run postal network with universal access,[56] and when the new system had to contend with the existence of other, long-established means of communication, the challenges of appointing individuals to transport letters, to engage in delivery and collection, and to run the offices that were essential to the provision of services were enormous. A range of attributes were required, ranging from literacy and numeracy through to physical strength and integrity. At the same time, new technologies such as the telegraph and the telephone demanded specialised knowledge and skills, as did the proliferation of new services, such as postal savings and postal money orders. Taken together, these strategies enabled the communications authorities in Japan to secure the workforce that they needed to develop the expanding national postal, telegraph, and telephone services from the 1870s, as well as the adjunct services that were also developed, such as postal savings or postal insurance. These strategies undoubtedly served to improve the quality of the workforce, but also had limitations when it came to keeping workers happy and retaining their services, as evidenced in the attempts to employ additional measures to reward and retain employees. The cachet of official employment would only go so far if an employee still found it difficult to make ends meet. The third-class postmasters, as we have seen, were paid a pittance. Unlike full-time government officials, they were permitted to undertake other work, although we know relatively little about the extent to which they did so. It is clear, however, that a system that relied on

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[54] Y. Matsuzawa 松沢裕作, 'Teishinshō ni okeru Josei no Koin to Hanninkan: Chokinbukyoku o Chūshin ni—1900nen-1918nen' 通信省における女性の雇員と判任官：貯金部局を中心に―１９００年－１９１８年 [Female employees and *hanninkan* in the Ministry of Communications: the case of the Savings Bureau 1900–1918], *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyū Hōkoku* 国立歴史民俗博物館研究報告 [*Research Reports of National Museum of Japanese History*], September (2022). Matsuzawa notes that it was not until 1906 that women could become *hannin* appointees, but the 1903 Ministry Report does in fact note the existence of 97 female *hannin* employees.

[55] *Ekitei Nenpō* (1908), pp. 22–23.

[56] The founders of the new service felt strongly that the state needed to inculcate in citizens an understanding of the value of a state-run postal network. Terms such as *shinji saseru* (make them believe) and *uetsukeru* (implant) were used, as distinct from the term *kyōiku* (education) used to refer to the provision of skill development and training for employees.

confirmation of local status and quasi-official position to outweigh complaints about the minimal remuneration offered potential pitfalls from the start. We know that some third-class postmasters sought to resign because their incomes were totally insufficient and, from early on, the responsible authorities saw the potential for defections as a serious problem. The financial situation of some relatively underused offices was particularly problematic and some ceased to exist in the early-mid-1880s, as evidenced by the numbers in Table 2.[57] The evidence regarding actual levels of income is conflicting, with some reports giving figures for monthly income and others referring only to 'allowances' (*teate*) from the government, but one 1907 report stated that, on average, third-class postmasters received an income of ¥10.90 per month, which amounted to a shortfall of ¥4.21 on the estimated living costs for a couple. By comparison, the starting salary for employees of the first-class and second-class post offices was ¥10 and increased with seniority. Many other areas of work, including gardening and carpentry, paid considerably more.[58] Other data suggest that, in some cases, a third-class postmaster was being paid significantly less than the amount received by the average postman working under his jurisdiction. By the end of the Meiji period, the kudos assigned to being a local postmaster was less and less able to outweigh the disadvantages of inadequate remuneration. Some third-class postmasters were subsidising the operation of the postal system out of their own funds, while others found themselves having to borrow funds or sell off their landholdings. The result was that some gave up the struggle, while others neglected their duties to engage in other activities, in some cases passing them on to their wives or other family members who had often de facto been discharging most of the responsibilities.[59] Not until well into the 1930s were serious attempts made to improve the conditions and incomes of these postmasters with a view to retaining their services.

It was not just the third-class postmasters who were increasingly disincentivised. Both direct and indirect employees below the top levels were concerned about status and pay levels. The ministry's report for 1908 shows that, while the *sōnin* heads of the first-class post offices were earning on average just under ¥150 per month, their *hannin* colleagues who had been appointed as communications assistants received on average something over ¥16 per month, while postmen and other communications administrators (*tsūshin jimuin*) averaged *circa* ¥0.4 per day, equivalent to around ¥12–13 per month. In response to the difficulties in retaining direct employees, the authorities did increasingly look to enhancing commitment to long-term service not just through a narrative of social prestige, but also through improved remuneration packages. The measures taken to secure more female workers mentioned earlier were part of this broader strategy. However, this was in many respects easier to implement with directly employed workers. To the heads of the third-class post offices, who, according to the same 1908 report, received an average allowance (*teate*) of ¥2.9 per month, such salaries must have seemed something of which they could only dream. The national narrative, it seems, could only extend so far.

Despite these difficulties, the authorities clearly recognised the importance of human capital to the operation and development of the communications system, and sought as far as possible to strengthen the quality of the workforce on which this labour-intensive sector depended. Financial constraints were probably the most important factor in shaping a system that, over time, proved less than perfect, but Maejima Hisoka himself regarded the good treatment of employees as a *sine qua non* for the operation of any business, whether state-run or private. In effect, being good to one's employees was good business. In pursuit of this strategy, soon after the founding of the postal service in

[57] Yabuuchi, *Nihon Yūbin Sōgyō no Rekishi*, p. 237.
[58] Yūseishō Yūbin Jimukyoku Yūbin Jigyōshi Hensanshitsu, *Yūbin Sōgyō 120nen no Rekishi*, p. 39.
[59] Maclachlan, *People's Post Office*, pp. 62–65.

1871, Maejima articulated the idea of forming a kind of friendly society to support postal employees, in particular to provide them with assistance when they became sick or retired. Such a welfare organisation, he believed, would help to motivate employees and ensure that the service benefited from the human resources on which it depended. Despite approval within the ministry, the plan failed to materialise, but it in many respects foreshadowed the postal insurance (*kan'i hoken*) introduced by the Ministry of Communications in 1916. It was remarkable for its time, however, and it is worth citing the stated justification for the original plan at some length, as it demonstrates the commitment to labour-absorbing institutions and improvement in the quality of labour identified with the labour-intensive industrialisation process:

> The post and telegraph business is an organ of mass communication which accompanies the development of civilisation, and its efficiency, or lack of it, has a direct effect on agriculture, commerce and industry. This in turn has a beneficial or harmful effect on the people as a whole, thus the speed and accuracy of the service is of the utmost importance. Such things as the non-delivery and delay of letters are an important cause of confusion in the running of the business, and have the serious consequence of damaging the trust which the public has in us. Because this mainly has its origins in failings in the people who collect and deliver, and who are directly engaged in the business, these men must be of good character, of proven integrity, with long years of experience, and well versed in the practicalities …. Given that we need such practical and mental abilities, we pay only a low salary to these men, and suitable people are indeed very hard to come by…..That our members are little moved by greed clearly originates in the fact that they are not forced to be for ever in this work, namely their insecurity of position. Therefore I want to establish the Imperial Post and Telegraph Workers' Protection Society, to provide assistance in the case of workers contracting illness or suffering injury; in the case of loyal and diligent service over many years it will pay a retirement pension. By doing such things it will on the one hand aim at security of position, and on the other cultivate integrity among officials, thus one can expect experience in the business. By this means we can attempt to have honest and experienced officials.[60]

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[60] Quoted in H. Maejima 前島密, *Yūbin Sōgyō Dan—Yūbin no Chichi Maejima Hisoka Ikōshū* 郵便創業談—郵便の父前島密遺稿集 [*Tales of the Founding of the Post: posthumous Works of Maejima Hisoka, Father of the Post*] (Tokyo, 1936), pp. 182–84.

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