

Study on the storage system in the Japanese workplace

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Part 2 Examine the Storage System's Items in the Workplace

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Part 2

Examine the Storage System's Items in the Workplace

1. Introduction

Workplace has several items needed to be stored within the storage units, such as paper documents, digital tools, books, etc. No doubt, each item is stored in a storage unit which matches with its features/nature, e.g. size, design, etc. So that type, capacity, and size of the storage units are usually different from one product to another one.

In order to search for the storage system efficiency and define its problems inside a workplace, we need firstly to select which item will be focused on.

Actually, this part leads up to determine and select which storage system is required to identify its problems inside the workplace and discuss them in the following parts of this research.

1.1 Purpose

The purpose of this part is to identify the item that occupies great space of the storage units inside a workplace. In addition, we aim to evaluate the common types of tools which are used for reserving this item within a storage unit, in order to gain a high performance storage systems whether personal or communal one.

1.2 Methods

The survey was carried out as follows: first, we selected the companies which have different work types to visit them as a field survey for two reasons:

1. It is a good chance to see and know the features of the current Japanese workplace.
2. We want to know how the storage systems are influenced by the different work types.

Therefore, 15 workplaces of different divisions, such as accounting, design and sales divisions inside five Japanese companies in Tokyo and Fukuoka were visited so as to identify the common items that are usually kept within the storage units.

We observed the supplies that are kept within the storage units including the file cabinets and the workers' desks. In addition, interviews were carried out with 50 persons (males and females) who work in these workplaces to know the main item that takes up large space of the storage units.

Second, we examined the common tools that are used to reserve the main item within the storage unit space. Kokuyo Filing System Team co-operated with us to define the advantages and disadvantages of these tools in order to help a worker to select an appropriate tool for available storage space.

Kokuyo is the most famous manufacture for selling both the office furniture and its tools in the current Japanese office market.

2. Results and discussions

The results of our survey that was carried out within 15 workplaces of the accounting, design, and sales divisions revealed that there are different items reserved inside the storage units. For example, documents, references, books, unused paper, stationery, samples, digital tools, and personal items, e.g. a worker's coat.

The majority of workers mentioned that about 50% of the storage units' space inside the workplace is occupied by the paper documents.

On the other hand, the outcomes of another survey that was carried out within 68 Japanese companies by Okamura Research Team and Facility Management (FM) Solution in 1996 [1] showed that the documents fill about 49.9% of the storage units' space (Fig. 1).

Based on the results of the former surveys, the paper document is identified as the main item inside the workplace needed to be stored. Therefore, the following parts of this research will focus on identifying and discussing the paper storage system's problems in the workplace.

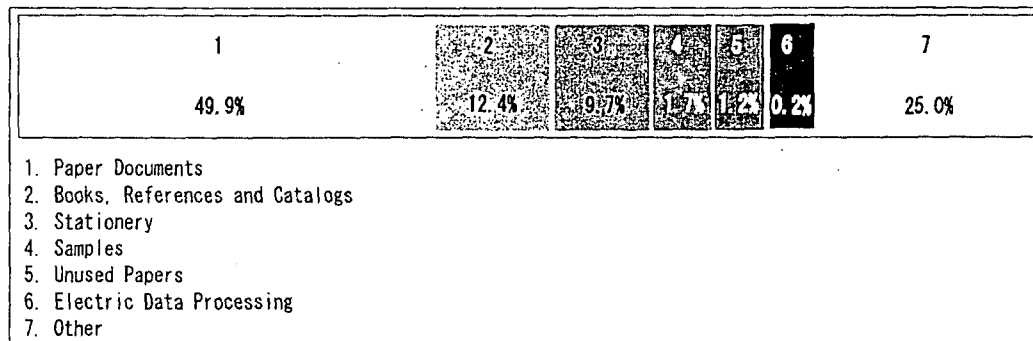


Fig. 1 The Storage Units' Items Inside the Workplace [Okamura Team and FM Solution - 1996]

2.1 Japanese paper size

There are different paper sizes observed within the visited workplaces, such as A4, A3, B5, and B4 (Fig. 2) [2].

This study focused on A4 paper size because it is an official size used within the Japanese workplace since 1992 (Fig. 3) [3- Appendix D].

According to the survey, we found that in the early 1990s, the common paper size used in the Japanese companies was A4 size instead of B5 size due to two reasons [4, 5]: first, in the beginning of 1990s, A4 paper size was used internationally and therefore the Japanese companies used it in order to deal with the foreign companies. Second, A4 paper size is needed because B5 size is slightly small for some works' contents, such as chart, tables, drawing, maps, etc.

Paper Size Standard W x L	Binder W x H x T	Folder W x H x T	File Box Size W x H x T	
B5 182 x 257mm	192 x 290 x 75~55mm	271 x 192 x 20~5mm	277 x 209 x 102mm	
B4 257 x 364mm	267 x 388 x 75~55mm	378 x 271 x 20~5mm	384 x 290 x 102mm	
A4 210 x 297mm	242 x 307 x 105~55mm	311 x 255 x 20~5mm	317 x 260 x 102mm	
A3 297 x 420mm	307 x 453 x 75~55mm	434 x 315 x 20~5mm	438 x 331 x 102mm	

Fig. 2 The Standard Size of Paper and the Common Size of the File Tools

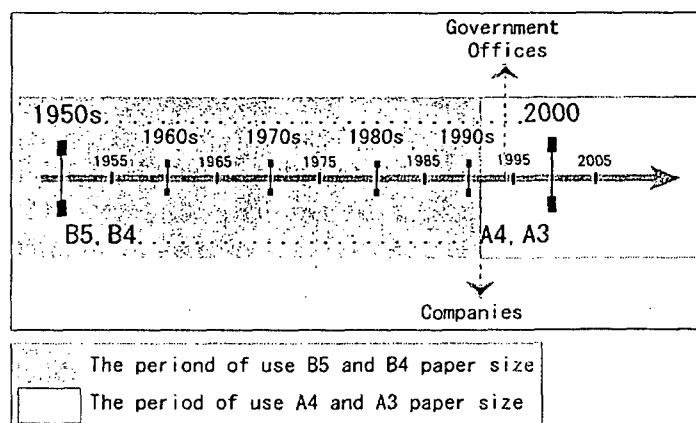


Fig. 3 The Common Paper Sizes Used in the Japanese Workplace from 1950s to the Present Time

2.2 File tools' evaluation

In the today's workplace, there are three common types of the file tools used for keeping A 4 paper size: binder, folder and file box. The size and capacity of each tool are shown in table 1 [2]. Since the thickness of 12 papers (A4 paper size) is about 1 mm (the measurement is carried out by using a caliper), the capacity of binders' thickness 105mm and 55mm is about 1260 papers and 660 papers respectively. The capacity of folders' thickness 20mm and 5mm is about 240 papers and 60 papers respectively. The capacity of file box's thickness 102mm is about 1200 papers.

Based on the survey, this study identified the advantages and disadvantages of each file tools which has to be considered before using each type, so that we might gain high storage systems efficiency.

Table1 Comparative Studies Between the Size and Capacity of the File Tools for Keeping A4 Paper Size

Types	Thickness	Width	Height	Capacity	
				Max	Min
Binder	105mm - 55mm	242mm	307mm	1260 Papers	660 Papers
Folder	20mm - 5mm	311mm	255mm	240 Papers	60 Papers
File Box	102mm	317mm	260mm	A box has 20 folders(each folder thickness 5mm)=1200 Papers A folder has 20 paper (20 Folders) = 1200 Papers A folder has 200 paper(5 Folders) = 1200 Papers	

“○ advantage ● disadvantage”

2.2.1 Features of a binder

The common used size of a binder is width 242mm x height 307mm x thickness 105mm~55mm (Fig. 4).

- A label space is convenient to write clear contents for easy visibility.
- Its thickness does not change even with the small quantity of papers. In other words, a binder takes up same space of storage unit whether empty or full [6].
- Not easy to file, as a worker needs to hole each paper.

2.2.2 Features of a folder

The common used size of folder is width 311mm x height 255mm x thickness 20mm ~5mm (Fig. 5).

- A worker can simply file and access the papers.

A worker has two choices for keeping the folder- first choice is by putting it directly in the drawer.

● There is difficulty to see the folder's tab from a tall cabinet (e.g. its height 2100mm). According to the survey, we found out that the convenient height of drawer cabinet to access and see the folder's title is about 1200mm [7, 8].

Second choice is by saving a folder in a file box before placing it in the drawer.

2.2.3 Features of a file box

The common used size of file box is width 317mm x height 260mm x thickness 102mm (Fig. 6).

- A label space is convenient to write a big title for clear visibility.
- The capacity of file cabinet could be increased by using a file box.

Basically, A4 paper is kept in a binder length-ways (Fig. 7). Therefore, the file cabinet's size width 800mm x depth 450mm~400mm x height 1200mm includes three shelves in order to match with the height of binder (307mm). As each shelf could keep seven binders (thickness 105mm), three shelves keep 21 binders. Since the maxim capacity of one binder is about 1260 papers, the capacity of 21 binders is about 26460 papers.

On the other hand, A4 paper is kept in the file box width-ways (Fig. 7). Since the height of file box is somewhat smaller (260mm) than the binder height, the file cabinet size width 800mm x depth 450mm~400mm x height 1200mm could include four shelves.

As one shelf allows for keeping seven file boxes (thickness 102mm), four shelves could keep 28 file boxes. As the maxim capacity of one file box is about 1200 papers, the capacity of all file boxes is about 33600 papers. This means that the file cabinet capacity of the latter situation becomes higher than the former one by about 27% (Fig. 8).

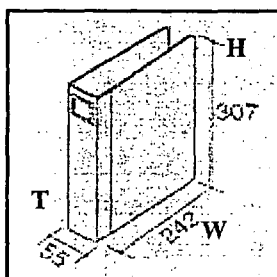


Fig. 4 A binder

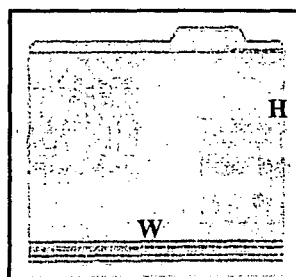


Fig. 5 A folder

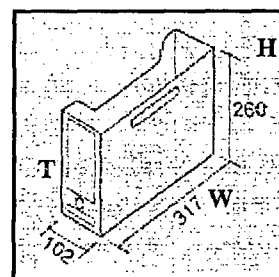


Fig. 6 A file Box

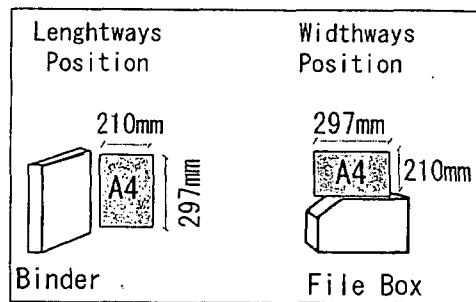


Fig. 7 A4 Paper Position in a Binder and File Box

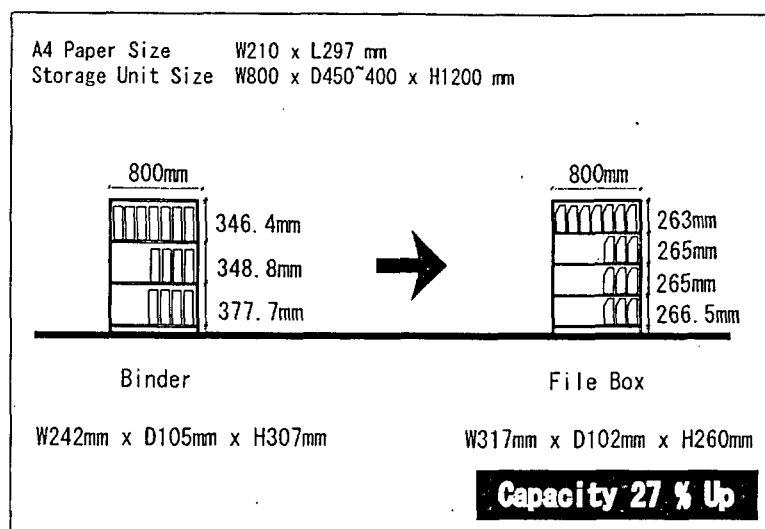


Fig. 8 How the File Tools' Effect on the Capacity of Storage Unit

● A file box needs a space to be kept because its thickness (102mm) is slightly big compared to the other tools. Basically, the thickness of file box does not change even with the small quantities of paper.

From the former comparison between the file tools, this study identifies that a binder, folder, and a file box are required to use in different situations. Basically, the selection of the file tool relies on the following factors: first one concerns the quantity of papers (it determines according to the capacity of each file tool, e.g. big, average, small amounts of paper) that a person has within a workspace related to the storage units' number and their available space (Fig. 9).

As for the second factor, it relates to the storage unit's features (regarding its type and height) (Fig. 10, 11).

This study supposed different situations concerning the previous factors and selected the convenient tools based on the advantages and disadvantages of each type of them:

1. As a file box occupies large space of the storage unit, we recommend a worker to use it in the case of having big amount of papers (e.g. about 660~1200 papers) so as to save the storage space. Furthermore, in order to see the file box's label clearly, both the slide, open, door file cabinets (the unit that has shelves) are convenient more than a drawer unit [9,10].
2. On the other side, in the case of having small quantity of papers (e.g. starting from one paper to 240 papers), as well as the available space of storage unit is limited, such as a desk's drawer, a folder is recommended [11].
3. As for a binder, since it has various sizes of thickness which accommodates A4 paper size, it could be convenient for the big, average, and small amount of papers. In addition, a binder could be placed within whether large or limited storage space as well as within any storage type (e.g. shelf and drawer units) and height (e.g. tall and low units) [9].

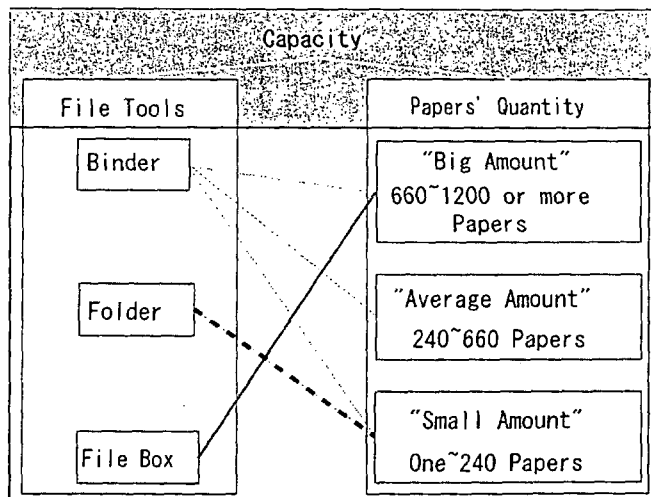


Fig. 9 The Relationship Between the File Tools and the Quantity of Papers

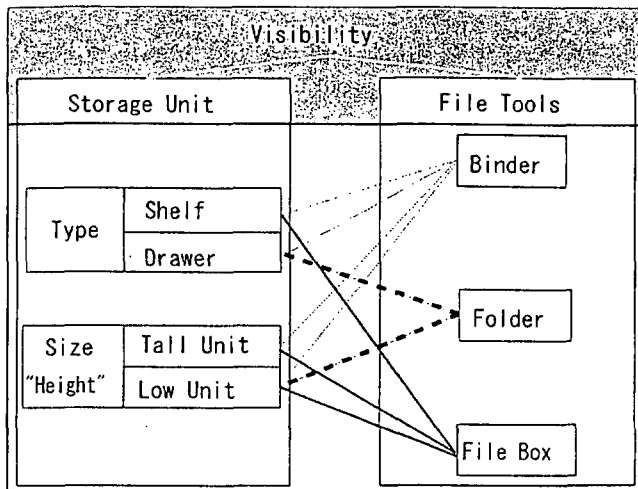


Fig. 10 The Relationship Between the File Tools and the Storage Unit Features

Storage Type File Tools	Shelf Units			Drawer Units	
	Door	Slide	Open	Drawer	Pedestal
Binder		●			●
Folder		×			●
File Box		●			▲

●	Convenient
▲	Acceptable
×	Inconvenient

Fig. 11 The Recommended Storage Unit for Keeping Each Type of the File Tools

3. Conclusion

Based on our survey and another one that was carried out by Okamura Research Team and Facility Management (FM) Solution, this part concludes that the storage units' space inside the workplace is mainly took up by the paper documents.

As for the file tools' types that are used for reserving the papers, a binder, folder, and a file box are commonly used in the Japanese workplace.

The results of the comparative studies between the mentioned file tools revealed that they affect somewhat on the storage unit capacity, as well as file accessibility. Therefore, in order to save the storage space and increase its capacity, a worker has to regard the amount of paper in relative to the available storage units within a workplace.

Furthermore, the file tools' types and the storage unit's features (e.g. its height and type) have to be considered, as they affect on file accessibility.

4. Summary

This part aims to determine the common items that are kept inside a workplace. In addition, the main item of them is selected to identify and evaluate the tools that are used to reserve it inside a storage unit. The intention is to display the main item clearly and save the storage unit space as well.

According to the survey that was carried out within 15 workplaces in Tokyo and Fukuoka and another survey that was carried out by Okamura Research Team and Facility Management (FM) Solution, in addition to the critical information that was offered by Kokuyo Filing System Team, we detected the following:

1. The common items that are kept within a workplace are documents, references, books, stationery, samples, digital tools and others.
2. The paper documents are identified as the main item of the storage unit inside a workplace because they take up great space of storage unit.
3. The binder, folder and file box are the common tools used inside the current workplace for saving the papers.
4. Each type of the mentioned file tools has advantages and disadvantages which affect greatly on the storage capacity, as well as file accessibility. Therefore, a worker has to select the convenient tools carefully in order to get high performance storage systems.

Basically, this study demonstrated that there are two essential factors have to be kept in mind before using any type of the former file tools: first one relates to the amount of paper that is needed to be reserved. As for the second factor, it is concerning the storage unit's features, such as its type and height.

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