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# Experience the History

An exhibition for Océ small format  
printing

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A CANON COMPANY



VENTILATEUR



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# Exclusive Summary

An exhibition in a company museum, Océ museum, is designed in this graduation project.

Océ is a global leader in digital imaging, industrial printing, and collaborative business services. The Océ museum was founded since 1983 to show the company history to its customers, fellow workers, and the interested public. In 2015, Océ opened the Customer Experience Center where visitors can experience the latest products and services of Océ.

The assignment for this project is to design the presentation for Océ small format printing to connect the Customer Experience Center and to achieve a marketing effect. The research was done on the aspects of company, the market of small format printing, and museum in order to gather content about what can be presented for marketing and get inspired on how to present the content for a better museum experience. Through iterating from content to experience, a concept was proposed to let visitors experience the company's growth in the changing world.

The concept connects Océ museum with the Customer Experience Center by showing the evolvement of Océ's positioning in the small format market, from office copying to production printing. The marketing effect is achieved by showing the evolvement of copying and printing facilitated by Océ's remarkable products and unique technologies from diazo copying in the museum to inkjet printing in the Customer Experience Center. Visitors will experience the evolvement personally and have a time travelling from 1960, 1981, 1997 to the current. This experience enables visitors to have a comprehensive view on the company's development and to witness its perseverance in technology developing and its tradition of innovation.

To validate the concept, the experience of copying by Océ 155 and with diazo copying technology in 1960 is detailed. Tests are done to evaluate this experience and recommendations for further develop are put forward based on the test results.



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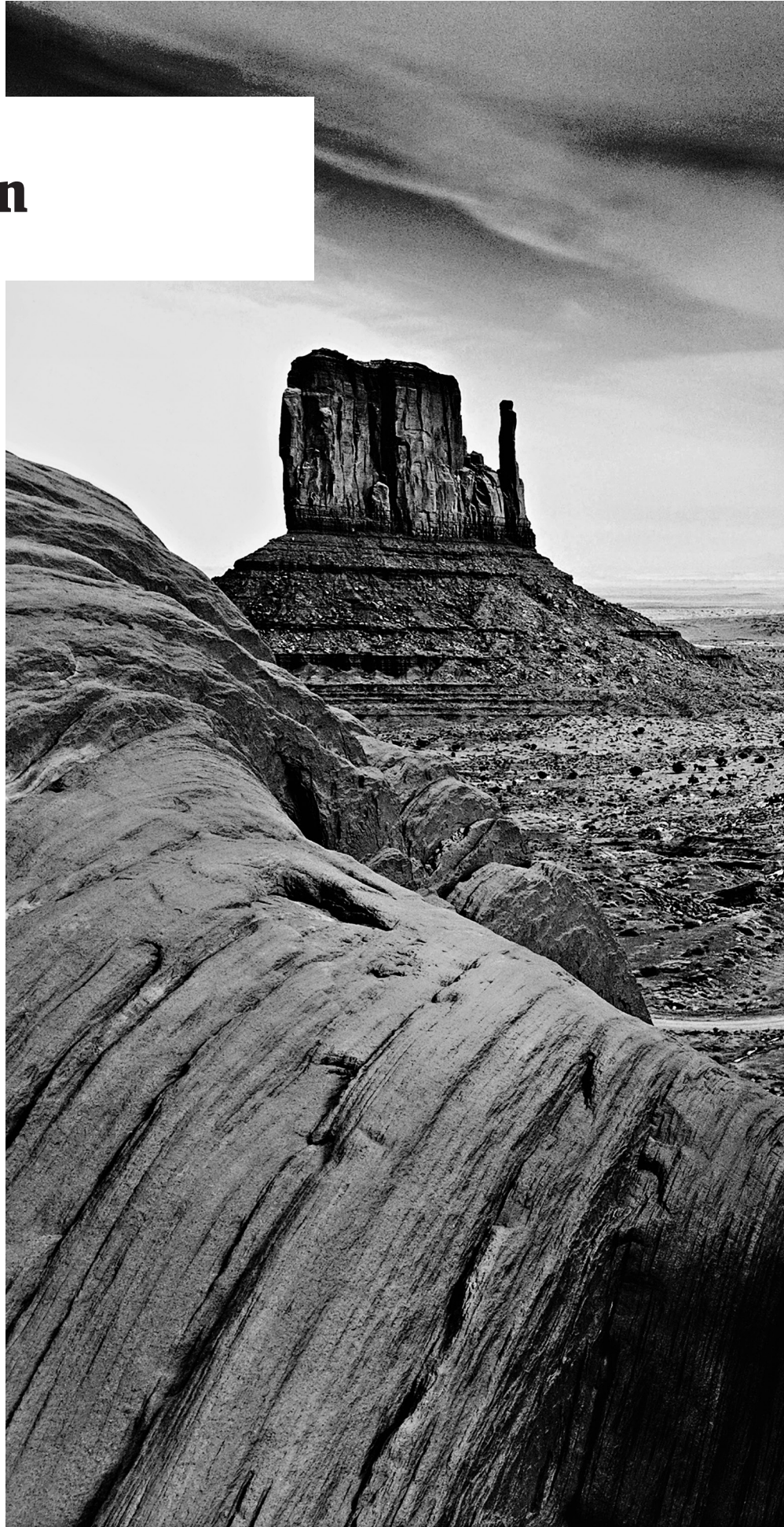
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## APPENDIX

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# 1 Introduction







## 1.1 MUSEUMFUTURES

Museum Futures is a Delft Design Lab at Faculty of Industrial Design Engineering of Delft University of Technology. The lab was initiated by Arnold Vermeeren with an aim to explore the future museum experience. Students in the lab work on individual projects which are museum design related, but share their knowledge and experience on museum experience design.

## 1.2 Background

Founded in 1877, Océ is a global leader in digital imaging, industrial printing and collaborative business services. As a Canon Group Company, Océ operates a global network of R&D centers to connect emerging digital print technologies to future markets. Océ is headquartered in Venlo, The Netherlands, in the heart of Europe's hi-tech corridor.

Océ serves two main types of market in printing, small format and wide format. In wide format market, Océ is in a leading position. In small format printing market, it is facing intense competition. Océ introduces different products and has different business models for the two markets.

The Océ museum was founded since 1983 to show the technology, to a less extent, business and organisation development to customers, fellow workers and the interested public. In 2015, Océ opened the Customer Experience Center where visitors can experience the latest products and services of Océ. The visitors will be given a tour from the Customer Experience Center to the museum to experience the company development from past to now.

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### OCÉ MUSEUM

In the current museum, the exhibition follows a chronological order and the exhibits for the two markets are intertwined. There are more content about the development of technology and hardware, while the marketing and business aspects are less presented. Furthermore, the connection between the museum and the Customer Experience Center is weak.



Figure 1.1 Exhibition in Océ museum

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## VENLO CUSTOMER EXPERIENCE CENTER

The Venlo Customer Experience Center presents Océ high volume small format cut sheet printers, such as VarioPrint 6000 and i300. It effectively shows the advantages and values of Océ products by letting customers experience them. Besides showing machines, the center shows the production environment to its visitors. It is presenting the complete picture of printing by letting the visitors experience the whole workflow of printing, the devices, the software, the imaging supplies and printing quality.

In a word, the Customer Experience Center is strongly conveying the productivity in printing.



Figure 1.2 Venlo Customer Experience Center



Figure 1.3 VarioPrint 6000.

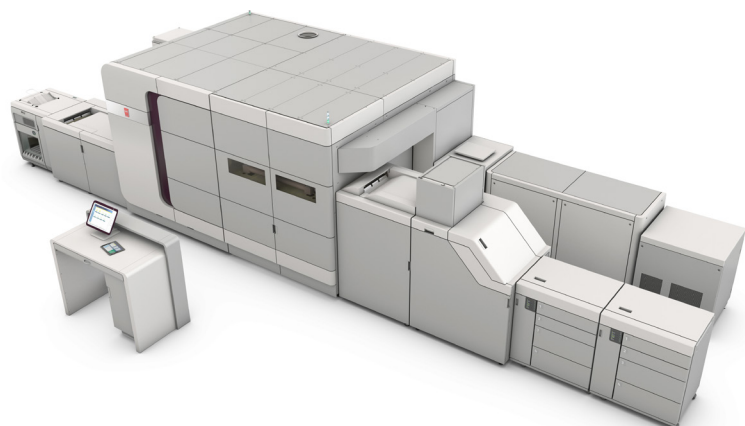


Figure 1.4 VarioPrint i300.

### 1.3 Assignment

In this project, the presentation for Océ small format printing in the museum will be designed to connect the Customer Experience Center and to achieve a marketing effect.

There are three main issues should be addressed.

- The development of small format printing should be obvious to its customers in this market.
- The presentation should balance the technology and business to give a comprehensive view.
- The connection between the museum and the Customer Experience Center should be strengthened for a smoother visiting experience.



Present the history



Provide multiple perspectives



Build a bridge

## 1.4 Initial Research

Through talking with the company mentor, the users of the museum was learned and general information about Océ small format printing was gathered.

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### MUSEUM USERS

There are two main types of users for Océ museum, the volunteers and the visitors.

The volunteers are mostly the retired employees and work one day a week in the museum. Their main jobs are to maintain the exhibits and to guide the visitors for the tours.

The visitors are the Océ employees and customers. Both groups are invited for a tour in the museum for a better understanding of the company's history. However, the two groups have different background and will have different interests in the visiting. As a result, it is better to target one group and narrow the focus.

Since the museum will be transformed into a marketing tool, in this project it is better to choose the customers as the target visitors.

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### GENERAL INFORMATION ABOUT OCÉ SMALL FORMAT PRINTING

The small format printing usually means the printing format smaller than the A2. Some examples of the applications are books, magazines, invoices, statements.



Figure 1.5 Examples of small format applications. Books, magazines, reports, brochures.



## 2 Method and Approach

This chapter summarizes the methods and process of design research which was conducted to answer the research questions 'what can be presented in the new exhibition?' and 'what can be improved in the current museum experience?'.



## 2.1 Company research

### GOAL

- Understand the history and culture of Océ from different perspective.
- Collect stories to present in the museum.

### PROCESS

The context mapping method was conducted and six Océ employees from different departments were involved.

Context mapping is a qualitative research approach in which the end users are regarded as the expert of their own experience (Sanders, L., & Stappers, P. J., 2012). Designers are the experts of the innovative methods and will use generative tools to gain insights from the end users. In this research, the employees are regarded as the experts in Océ development. From their own working experience, the characteristics of the company can be identified.

Rather than directly interviewing the employees about the company culture, context mapping helps to trigger more anecdotes and personal opinions about the company. Through these anecdotes and stories, the designer can be emphatic about the company culture and be deeper immersed in the company history.

The composition of the participants and the process of the sensitizing and interview are shown in figure 2.1 and 2.2. The research setup can be found in appendix A.

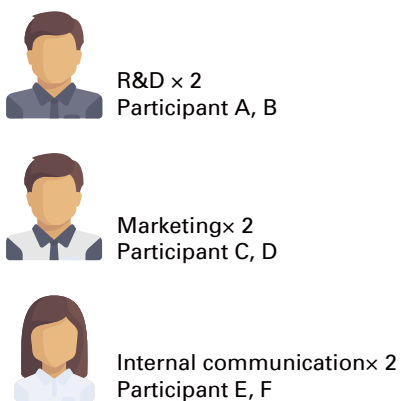


Figure 2.1 Participant composition



Figure 2.2 Sensitizing and interview process



## 2.2 Market research

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### GOAL

- Understand the market and customers of the small format printing.
- Understand Océ's development in small format printing.

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### INTERVIEW

In order to know Océ's business in small format printing, including its market position, products, customers and marketing approaches, four interviews were conducted. Each of the interviews took 30 to 40 minutes. Questions are asked around their responsibilities, Océ small format products and the customers, their experience of with the customers.



Product Manager  
× 2



Sales Trainer  
× 2

Figure 2.3 Interviewee composition

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### CUSTOMER VISIT

In order to get empathy and collect first-hand stories of customers, a visit was paid in a customer's factory. The customer is Andi with ten-year experience in collaboration with Canon. Andi grew from a small print shop only focusing on small format printing to a large company providing various wide and small printing solutions for its customers. Andi now is one of the largest print service providers in the Netherlands even Europe.

W

The tour is guided by the operation manager of Andi. The stories about the company development, its production devices, its collaboration experience with Canon, and its future direction are introduced.



Figure 2.4 Andi Smart Print Solutions (left above, source: <https://www.andi-printsolutions.com>) and its factory hall (above).



Figure 2.5 During the volunteer session

## 2.3 Museum research

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### GOAL

- Identify the strength and limitation of Océ museum.
- Get inspired on how to improve the museum experience.

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### OBSERVATION AND INTERVIEWS

In order to understand the official tour of Océ museum, a visit of a group of new employees and led by the volunteers was observed. After the tour, five employees were interviewed.

During the visiting, the route of the tour, the ways of presenting, the interactions were observed. In the interview, questions were asked about visitors' impressive parts, their feelings and opinions about this trip.

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### CONTEXT MAPPING

Five museum volunteers and two museum managers were researched in order to know the strength and limitations of the current museum as well as the hidden story behind the exhibits. The volunteers are not only the expert of Océ history but also the expert of Océ museum. The contextmapping method was conducted in order to gain insights from their working experience.

They firstly filled in a sensitizing booklet one week before and then gathered at the session. The process of sensitizing and session is shown in the figure 2.4. The materials used in this research can be found in appendix B



Figure 2.6 Process of sensitizing and session

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### FIELD RESEARCH

The field research was done on two company museums in order to get inspirations: the Houweling Telecom Museum and the Philips Museum. The layout, the logic of storytelling, the presenting ways and interactions of the two museums are the emphasis of observation.

## 3 Result

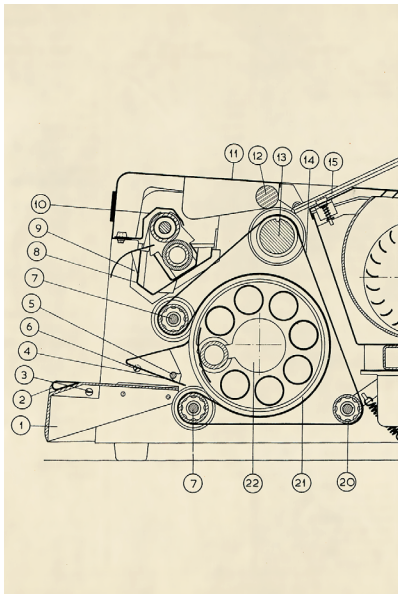
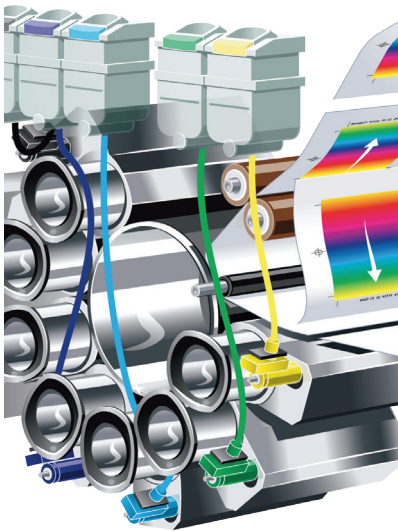
The research results will be introduced in this chapter. On the one hand, the strengths of Océ are clustered and summarized as company values and product values which can be presented to its customers for the purpose of marketing. The development of Océ in small format printing and the latest market trends are important for a good story in the exhibition. On the other hand, the target audience, customers of small format printing will be introduced. Their goal, pain and needs are identified to select relevant and interesting content for the exhibition. Moreover, the position of Océ museum is decided after comparing with Customer Experience Center and account manager in customer's decision-making process.





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## OCÉ COMPANY VALUES



### 3.1 Océ company culture

Océ as a company has its unique characteristic and company culture. According to the research, its culture is extracted and can be described by four main values: knowledge in printing, eigenzinnig spirit, empowerment of people, customer centered.

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#### KNOWLEDGE IN PRINTING

Its investment in innovation and The rich knowledge in printing is a well-recognized strength of the company. Océ owns worldwide research network and builds research center in many countries. It is honored because of its unique technologies which make it product outstanding. The knowledgeable people is also the wealth of the company.

“They have a lot of knowledge about how to produce products. All these departments, including R&D department, that is the strength of Océ.”

— Marketing C

“There are many technologies only Océ has, direct press, crystal point technology, copy press.”

— Marketing D

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#### EIGENZINNIG SPIRIT

From the history, Océ always invests in itself and drive for the best. It is innovative not only in its products but also in its internal management.

‘Océ is stubborn in a positive way. Always doing things differently. It’s part of our DNA.’

— Marketing D

‘If it’s not the best, it’s not good enough. We all try for the best.’

— R&D A

‘That’s quite unusual at that time to have a such a shared job especially in a company. That’s 24 years ago.’

— Communication E



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## EMPOWERMENT OF PEOPLE

Océ is a 'bottom-up' organization and the development of the company is decided and driven by the employees at the front line. The people of Océ respect and are empathetic to each other. They really enjoy this team and have fun in this company.

"It's an organization we offer all possibilities dedicated as low as possible. It's not seniors decide but the other way around."

— R&D B

"You have a lot of empathy for each other, helping each other and always willing to help, always willing to go the extra mile, for each other, not too much for the company but each other. We respect the colleges. We want to help them find a way"

— Communication E



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## CUSTOMER-CENTERED

Océ builds an intimate relationship with their customers in their long term collaborations. Océ respects its customers and takes them customers as the starting point and end goal of its product development. It helps its customers not only in their production but also in their business.

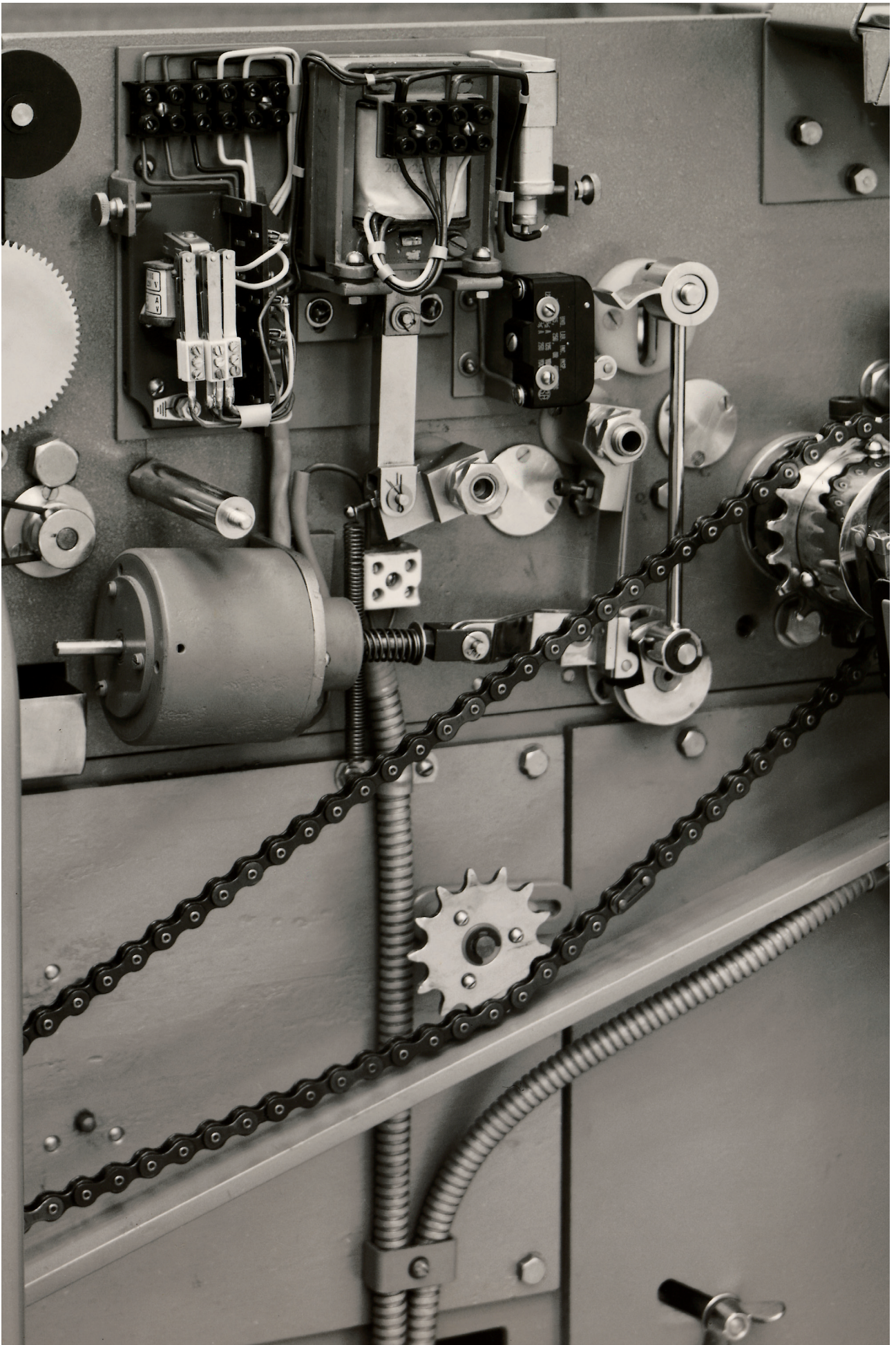
'Océ always try to understand the customers. We develop the product by the voice of customers and their problem feedback.'

— R&D A

'I think the trustworthy is in our gene, in our DNA. We respect our customers.'

— Communication F

Because of its culture, Océ continuously provide high quality products and services to its customers and builds an impression as a trustworth and reliable partner on its customers.





## OCÉ PRODUCT VALUES

Regarding to its speed, usability, reliability, output quality, up-time, Océ devices are designed to be **highly productive**.

Océ printers are lower in **total cost of ownership** comparing to its competitors. Considering the excellent production performance of the printers and service provided by Océ, customers will save money in the long run.

‘What you have to bring out of pocket is high, but in the end it is really strong part. You get even more. You get the service, you get the after sale backup.’

### USABILITY

Océ products own high usability in the complete experience of the product regarding to its ease of use and functionality.



#### Green button

The printer knows everything and the users just need to press the button.

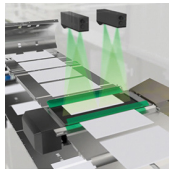


#### PRISMAprepare

A workflow software which avoid the hassles when preparing the printing job.

### RELIABILITY

Océ product is very reliable because of its durability in long running hours, low error rate, good printing and output quality.



#### VarioPrint i300

Automated quality control from sheet entry to finish.



#### Océ 1900

It is more reliable comparing to Océ 1700 because of the toner improvement and belt.

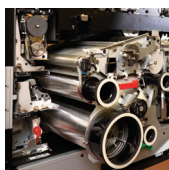
### SUSTAINABILITY

Océ products are environmentally friendly because of its unique technology. Océ did a better job in low noise, no smell, low energy cost.



#### Océ VarioPrint 6000

Ozone free, no noise, and energy saving.



#### Recycle

Océ will recycle the old devices, and reuse them in production or for other use.

### 3.2 The market of small format printing

According to the role that printing are playing in the their' business, the customers can be grouped by two markets: corporate and commercial.

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#### CORPORATE MARKET

For the customers in the corporate market, printing is their cost center. These customers own Central Reprographics Department (CRD), a facility that serves their internal needs in copying or printing. The CRDs are usually founded in Fortune 1000 headquarters or in main branch locations as well as universities, accounting firms, law firms, advertising agencies, hospitals and more. Some examples of their prints are customer letters, invoices and training materials.

There are several people involved when the company want to purchase printing devices. These include CRD managers and operators, marketing manager, IT manager, finance manager, legal department and purchasing manager.

#### GOAL

- Improve printing process and workflow, reduce the cost of printing within the company, and optimize the use of resources.
- Create awareness within the organization.

#### PAIN

- Lack automation and too much manual procedures in printing.
- Hard to satisfy the increased needs for high-quality color documents.
- Lower productivity than outside shops and the threat of being outsourced.

#### NEEDS IN PRODUCT LEVEL

- Software to manage electronic information delivery and archival.
- Equipment with high output quality but low print cost.
- Sustainability and environmental care for government funded organizations

The CRDs of the corporate customers are facing the struggling situation. On the one hand, their equipment is outdated and less productive, decreasing its reliability and increasing printing cost per page. One the other hand, its internal customers are demanding better quality printing services and higher volume of digital print. The competition of the CRDs is low comparing to the outside print shops while the organizations itself does not require staff to use the CRD service. This situation leads to the less awareness of CRD within their organization.

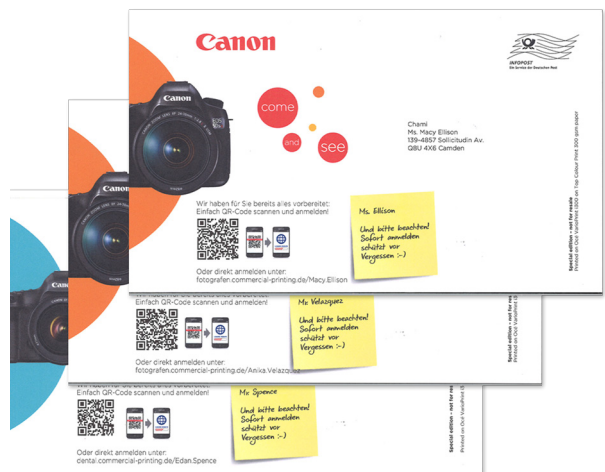
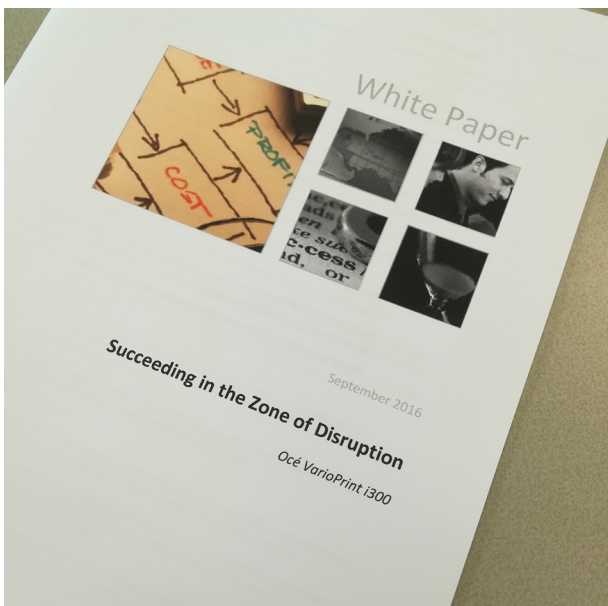
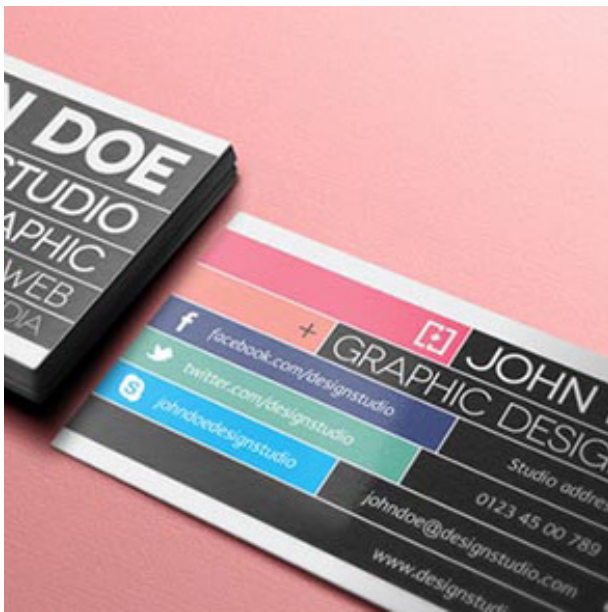


Figure 3.1 Application examples of the corporate markt. Business cards, manual, report and transaction mail. Source: <https://creativesauce.co.nz/portfolio/item/training-manual-design/>

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## COMMERCIAL MARKET

The commercial customers are the print service providers who insource some work from outside organizations and earn the profit by selling prints. For them, printing is their profit center.

They offer a broad range of print and services and range from small to large operations. For example, the small operation can be a print shop in the city who serves the local people with printing and copying services. The large operation can be a large print company in the industrial area which produces various prints, not only brochures but also packages, and provide ancillary services such as graphic design services.

### GOAL

- Reduce total running cost and improve printing quality to maintain competitiveness.
- Increase its print range to meet the diverse requirements of the print buyers.

### PAIN

- Heavy workload
- Complex production lines and various devices
- Wide range of media and application requirements

### NEEDS IN PRODUCT LEVEL

- High speed and reliable devices to serve the print buyers in time and reduce the cost of production
- High output quality to serve the print buyers with high inch quality and accurate prints
- The smart and predictable production control from job submission to finishing

The production of commercial customers is complex. They contribute to serving their customers with better quality and a wider range of print services. Different from the corporate, the commercial customers will involve various media in production. For one particular application, different media and different types of prints are needed. Various devices are involved in the production from printing to finishing for cost saving.

Most of the commercial customers choose their own combination of devices from different brands and different based on their own production needs. For these customers who have various producing equipment, managing the whole production flow are quite a challenge.

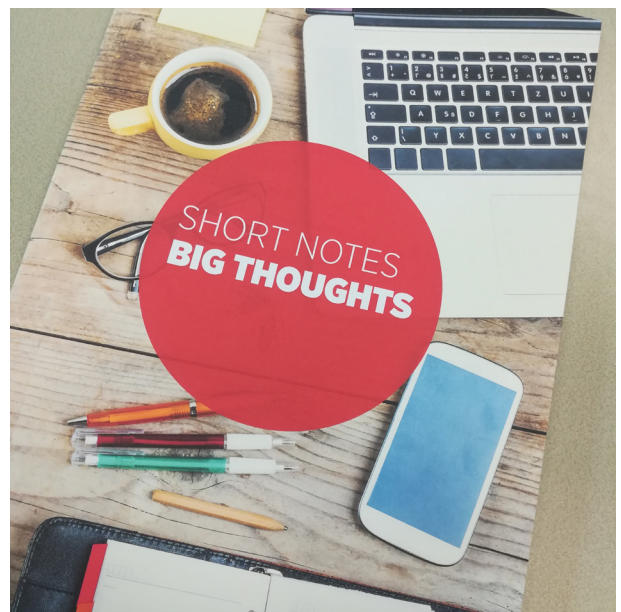
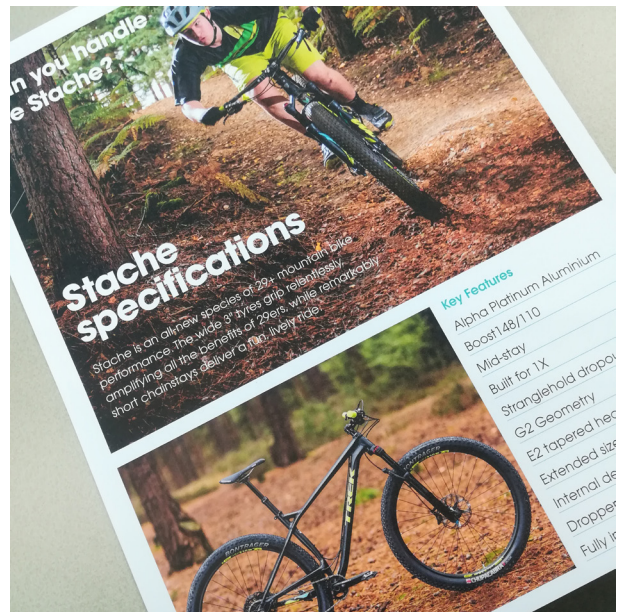


Figure 3.2 Application examples of the commercial market. Leaflet, magazine, books, notebook.

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## TRENDS IN SMALL FORMAT PRINTING

### INCREASE IN DIGITAL PRINTING

Digital printing are playing a more crucial role in the market with several advantages:



#### **Cost-efficiency.**

No extra set up fees will be required for film plates or photo chemicals.



#### **Flexibility.**

Digital data is easily stored and updated, which makes it easier to adjust the following batch.



#### **Fast.**

The response time becomes shorter due to the minimal press setup. It allows more effective print management with no need for bulk stock and no need to dump out of date stock.



#### **Consistency.**

The prints are precise and consistent due to the fact that the image is digitally stored and human error can be eliminated.

The advantages brought by digital printing are more aware by the printing market. In the commercial environment, digital print advantages are expanding to packaging, functional, and industrial markets. In the corporate environment, nearly 75 percent of four-color jobs and almost 73 percent of black and monochrome jobs were printed digitally in 2012.

Production digital print is well suited to the requirement of Industry 4.0 where computer and automation are more effectively combined to create value. With digital printing, the challenges that many customers are facing in printing can be easily solved.

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## GROWING INKJET MARKET

The inkjet production printing market has arrived. It is poised to become the primary driver of production printing in the next three years (Gustavson, D. M. ,2015). High-speed inkjet printing system beat offset in affordability and productivity. According to InfoTrends, by 2018, inkjet will account for 59.1 percent of the total production digital color volume.

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## GROWING NEED IN COLOR

About 42 percent of all pages produced in corporate market are four-color or multicolor. Global digital production color print volume increased from the year in the past three years and are predicted to increase more rapidly to2020.



Figure 3.3 Océ VarioPrint i300, color inkjet digital sheetfed printer (top) and its inner color inkjet structure (above).  
Source: [https://www.canon-europe.com/for\\_work/products/professional\\_print/digital\\_colour\\_production/varioprint\\_i300/](https://www.canon-europe.com/for_work/products/professional_print/digital_colour_production/varioprint_i300/)

## OCÉ IN SMALL FORMAT MARKET

## CHANGE IN PRINTING TECHNOLOGY

Océ started its exploration in small format market from 1940s, the age of diazo copying. Then the reprographic technology improved from electro to digital. It can be seen from its history that through technology innovation, Océ tends to explore higher volume production (figure). After joined Canon group, Océ strategically positioned itself on the mid to ultra-high volume printing. The technology that Océ is focusing on is inkjet which enables high volume printing to be more productive and cost-efficient.

## COMPETITIVE MARKET PLAYER

The market of small format printing is mature compared to the large format printing market. Printers are developed with different volume level and serve the different needs in the office or commercial printing.

Canon besides Océ is competitive in the lower medium volume market where the monthly print volume is below 150k and the printing speed is below 100 images per minute. Canon has engines targeting at this segment and the products are for example desktop printers, hallway printers.

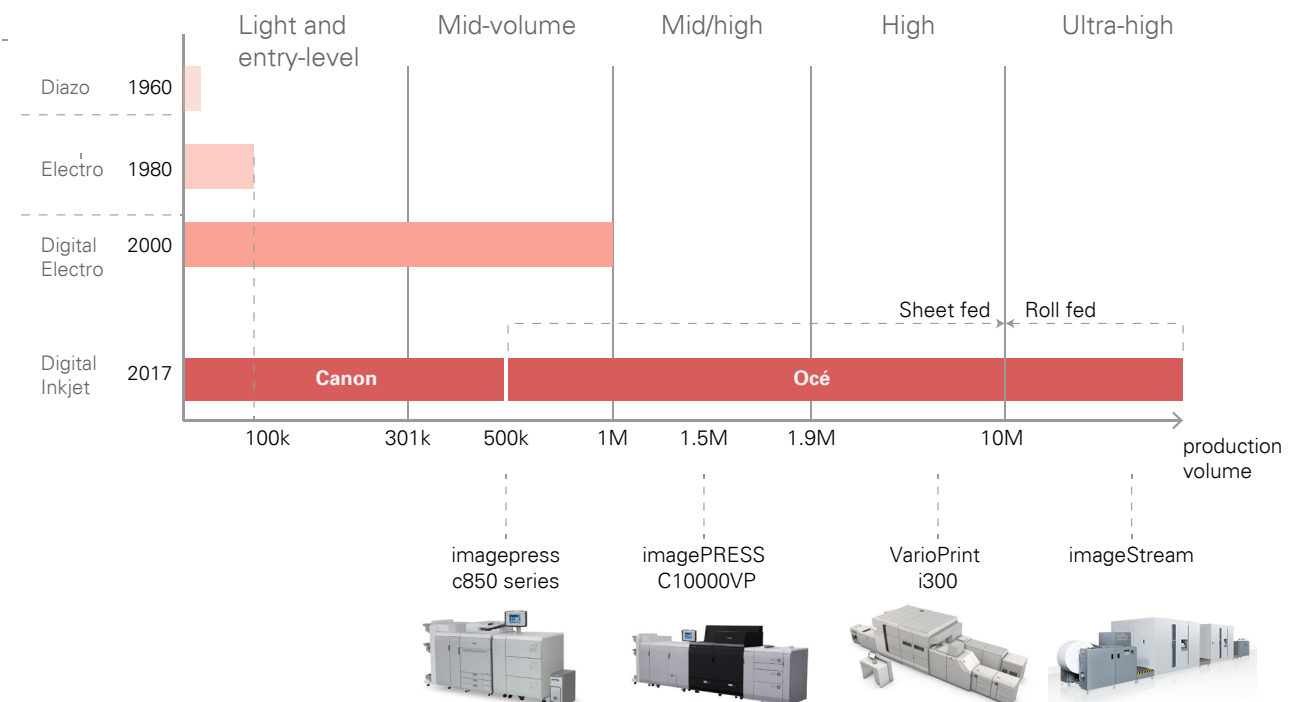


Figure 3.4 Change in market positioning. Photo from <https://www.canon-europe.com/>



Océ strategically focuses on mid and high production segment and is strong in heavy production printing where the maximum monthly printing volume is more than 10M. The Océ roll-fed devices are more competitive in the market than its cut-sheet devices based on the report of InfoTrends.

Digital production printing systems saw a growth in sales of the imageRUNNER ADVANCE 8500 series, despite the shrinking monochrome market, and the imagePRESS C10000VP series of color models performed strongly.

## OCÉ INTERVENTION IN CUSTOMERS PURCHASING

Océ intervenes customers' purchasing mainly through its account manager and the Customer Experience Center. The figure 3.6 describe the process supported by consumer decision making model.

The customers who are funded by the government will go through a tendering process. The tender list is made in a detailed manner and will be filled by the different players in the market.

*'If we just tick this box and our competitors don't, then we win the deal. We talked about quality, reliability, they are high level. But for a tender, it is not about these global, it's really about those tiny things.'*

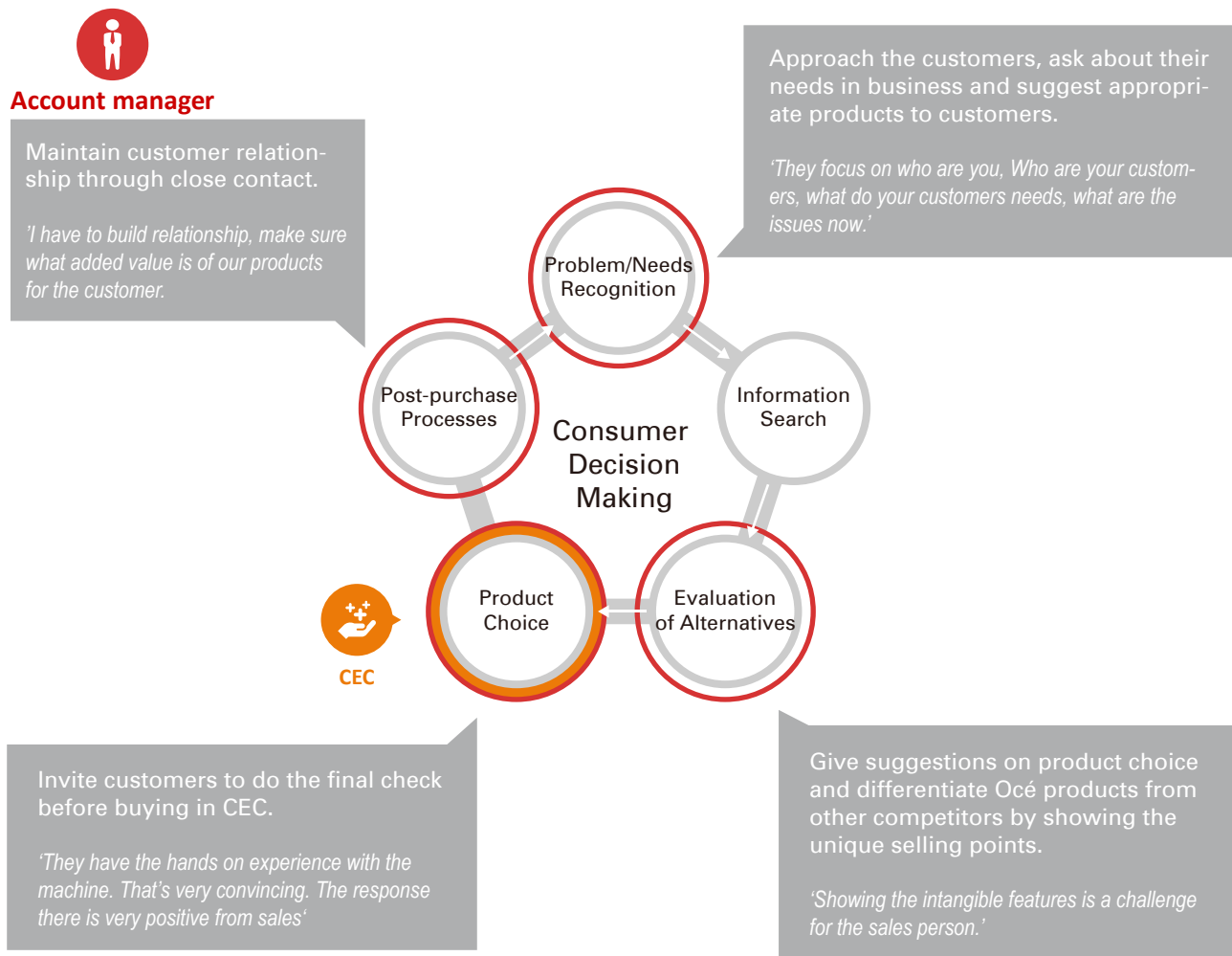


Figure 3.5 How the account manager and CEC intervene customer purchasing.



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### **COMMON NEEDS FOR THE TWO MARKETS: STAYING COMPETITIVE BY BEING UP TO DATE**

Both the corporate customers and the commercial customers aim to provide good print service to their internal and external customers. They need to keep improving their service performance in order to maintain or improve their status in their own organization or in the print service market. However, with the rapidly increasing workload and application range, the very basic way to maintain their competition status is to keep up to date in printing devices and techniques. Through continuously strengthening their production power, they can walk in front of their competitors and be active when facing threats.

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### **THE MOST APPROPRIATE SOLUTION BUNDLES FOR CUSTOMERS' BUSINESS**

Instead of only a printer, most customers are looking for a set of solutions which are beneficial to their business. The problems they are facing cannot be solved by buying a new device. Only with a good combination of hardware, software and services, their needs can be satisfied.

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### **ADDED VALUE RATHER THAN THE GLOBAL FEATURES**

In the intensive market of small format printing, the global features are no longer the persuasive keys. What persuades the customers to make the decision are the very specific and detailed features which make Océ different from other competitors.

The emotional reasons do exist in customers' purchasing. If the values of Océ products match with the customers' values, customers may also buy the products.

*'There are customers who want to be innovative. They were having a print shop. When VP6000 came into the market, they just want to buy it. It's like buying a new Apple. It's sort of like I want to be in front of all the new developments. I want to have this VP 6000 because it's new and it's perfect.'*

The capability to identify and provide the added values for the customers is the key to win in the competitive market.

### 3.3 Museum

The current museum was researched to understand its strength which can be preserved and taken advantage of as well as its limitations which should be eliminated in the redesign. Based on the strengths and limitations, Océ museum can position itself in customer decision-making chain after comparing with the other two marketing roles which were introduced in the previous chapter. Besides, the results of field research in two comparable museums will be introduced which provides inspiration for redesigning.

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#### OCÉ MUSEUM

This section introduced the layout of current Océ museum and the interactions in it. The strengths and limitations are summarized at the end.

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#### ROUTE AND STRUCTURE

In the current museum, exhibits related to small and wide format printing are put together. The story of the current exhibition is in the chronological order and the route is indicated by the posters on the wall.

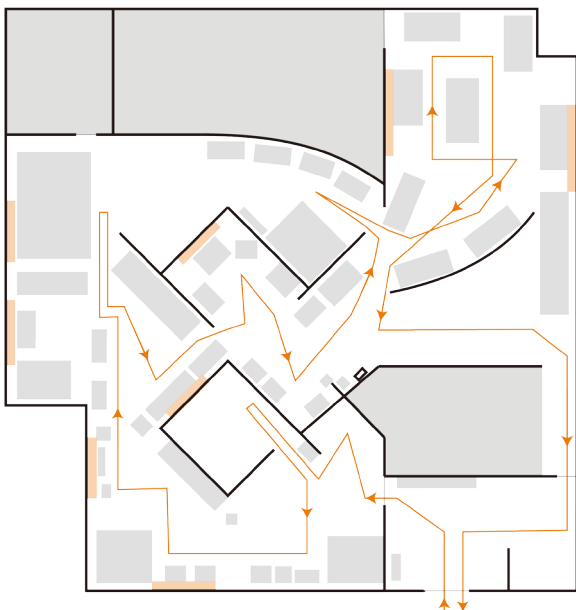


Figure 3.6 Route of visiting

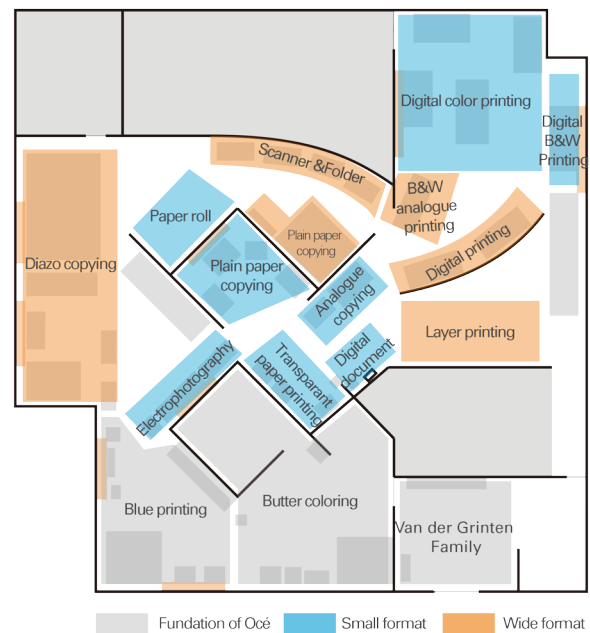


Figure 3.7 Museum layout

## WAYS OF PRESENTING AND INTERACTIONS

The presenting methods in the museum are the physical exhibits, labels, posters (introduce the technique theory, marketing communication), and videos.



Figure 3.8 Examples of exhibits. The show room for pharmacy and Océ 1900.

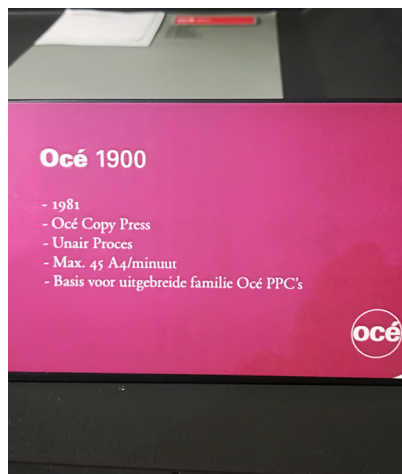


Figure 3.9 Label of Océ 1900.



Figure 3.10 Poster introducing the butter coloring.



Figure 3.11 Video player.



Figure 3.12 A volunteer was showing the machine.

In the current exhibition, visitors are passively involved in visiting exhibition. The speed of visiting and the time spent on each exhibit is controlled by the volunteers while visitors are passive message receiver.



Figure 3.13 Interaction between volunteer and visitors.

---

## STRENGTHS

### Ways of presenting

- Volunteers' introduction enriches the physical exhibits.
- Videos help in the explanation of the complicated printing technology, such as the blue printing principle and process. Visitors get a better understanding and were very concentrated while watching.
- Showing the working old devices. Most the old devices are functional, which is impressive and attractive. Visitors' passion of participation was very high when seeing the guide operating the machines.

### Content

- The relation between the pharmacy and the current local region (Venlo city center) attracted visitors attention.
- The physical exhibits are quite sufficient, making it possible to show the company history detailed

---

## LIMITATION

### Structure

- Too many exhibits and stories blur the focus.
- The connections among each printer are weak. The logic behind stories and exhibits are not clear, especially the printer area.

### Ways of presenting

- The introduction given by volunteers are necessary for understanding the content of the exhibition.

### Content

- The museum misses the digital part of Océ. The software products are not presented currently, making the presentation of Océ product portfolio incomplete.
- The products for the different market are intertwined in the current presentation.
- The old devices need to be frequently maintained.

### Volunteers

- The work of the volunteers is unstructured.
- 'there was no career anymore. So when I start every morning, I think what shall I gonna do in the museum.'

### Experience

- The tour is too long to attract visitors. Visitors' interest and attention levels were obviously decreased at the final part of the tour.
- Most visitors do not pay for a dedicated visit. Besides the employees, the customers will come to the museum led by the sales person and just quickly walk around in the space.

**POTENTIAL ROLES IN THE CUSTOMER PURCHASING PROCESS**

Together with the Canon account manager and Océ customer experience center, Océ museum will be designed to intervene customers' decision making process. Through comparing with the two, Océ museum has three opportunities because of its strength.

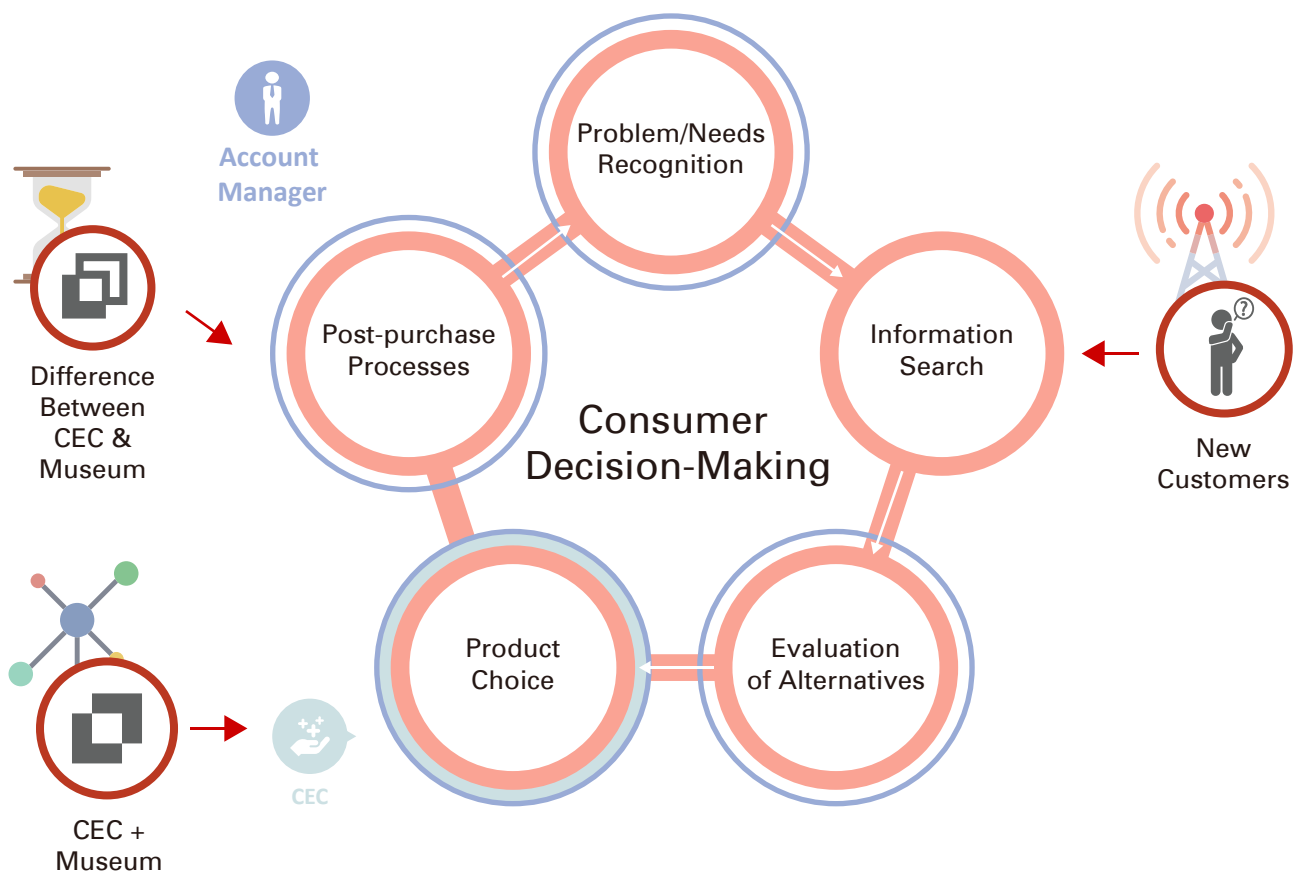


Figure 3.15 Opportunities of Océ museum



**FACILITATE INFORMATION SEARCHING**

Expand Océ influence to reach new customers



Océ museum can help to expand Océ brand influence through different medias, such as the internet, broadcast, advertisement. Before the account managers reach them or coming to the CEC, the potential customers can have an awareness of Océ as a brand with a long history.



Website



Online Interactive Game



App

**FACILITATE PRODUCT CHOICE**

Museum plus Customer Experience Center to enhance Océ product values



Showing the intangible and long-term oriented product features can be the opportunity for the museum. With the long history and rich heritages, the museum can presenting the advantages of Océ products in an interactive way, making its competitiveness more convincing.

Intangible  
Long-term



Reliability



Sustainability

**FACILITATE POST PURCHASE PROCESS**

Build a brand image to strengthen customer relationship



Museum have the ability to create a strong brand image and convey its company values.

Brand communication is currently a weak spot of the CEC and the account managers. 'we don't have time to sell our brand, we should first sell our products,' said by one interviewee. The CEC and the account managers are contributing more in showing Océ products up. However, the Océ as a brand is not showing itself up.



Sell Global Site



Catch Up With Trends



Innovative and Eigenzinnig

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## COMPARABLE MUSEUM

Inspirations are acquired through visiting comparable museums. Insights got from visiting Houweling Telecom Museum and Philips Museum are introduced in this chapter. The focus is put on the layout, the logic of storytelling, the presenting ways, and interesting interactions. Important factors of these exhibitions are identified at first and insights are generated.

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### HOUWELING TELECOM MUSEUM

The goal of Houweling Telecom Museum is guarding the heritage of the Telephony Phone District Rotterdam. This is used in relation to the rest of the Netherlands a unique collection Rotterdam because the only district the telephony system and Ericsson mainly used the Bell system, the rest of the Netherlands.

The houweling telecom museum is similiar to Océ museum in this two factors:

**Volunteer oriented.** Twenty-five retired men and women between 63 and 91 are the volunteers working in museum. They guide visitors in the museum. Volunteers can give the story to visitors vividly and even can demonstrate with exhibits. However, visitors can not visit the museum alone. The story and technology behind are the essentials for the exhibition. Without volunteers' demonstrations, the visitor cannot understand the stories.

**Functional exhibits.** All the exhibits regarding phones and telephony system are functional and interactive. Fun factors added into exhibition, which makes the tour impressing and involving. But without the volunteers, visitors do not know how to play with them.



Figure 3.16 Museum volunteer and functional telephones.

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## PHILIPS MUSEUM

The Philips Museum is located in Eindhoven and presents the history of Royal Philips. The museum is open 'for everyone aged between 8 and 88 years' (Philips Museum, 2017) and is used for brand communication. The historic inventions of Philips and examples of global entrepreneurship are presented, showing how the company is developed and how it improves people's life.

**Vivid presenting ways.** Interactive technologies and many methods of presenting are used in the museum, such as AR (augmented reality), Scenario making, multiperspective stories. Visitors are actively engaged in the presentation and can learn the history of Philips immersively.

**Strong image of the brand.** Through the exhibition, the characters of Philips stand out. The different aspects show clearly what shape Philips. In the end of the exhibition, the future directions of Philips are displayed and the values of brand are summarized, which is logical and reasonable for visitors.



Figure 3.17 Inside Philips museum



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## DISCUSSION

The small format printing market is a mature market and the competition is very intense. The players who want to grow their business need to grab market share from their competitors. As a result, building and strengthening customer relationship is very important. It is more urgent for the museum to facilitate post purchasing process and to win customers trust for future collaboration.

For a long term relationship, customers need to be confirmed that Océ is a vibrant company which has promising future. Océ museum, with rich heritages, can play a role and provide sufficient evidence to prove its strength. Knowing its path of growth, customers can imagine how Océ will perform in the future and would feel more confident about the collaboration.

Comparing to the 'facilitate information searching' and 'facilitate product choice', the direction 'facilitate long term relationship' is chosen for redesigning Océ museum.

Some suggestion and inspirations about how to improve Océ museum and how to solve its limitations are generated by comparing the three museums.

- Make Océ museum independent and the guided tour can be an added value.
- Besides the Océ history, volunteers can tell more about their own experience or stories from their own perspective.
- Use more interactive presenting and storytelling methods to enrich the visiting experience.
- In order to deal with the massive information, having a clear theme is important for the presentation. Structuring the content in to clear layers and making an appropriate selection on exhibits will help to deal with the imbalance between the space and story.
- Group the relevant exhibits and distinct each groups with clear visual style. Use the same storytelling pattern for the exhibits in the group.

## 4 Design Brief

This chapter concludes the research results and put forward the design goal and design requirements which are the starting point for design.





## 4.1 Design Goal

The new exhibition for the small format market in the museum needs to achieve two goals.

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### BRIDGING THE GAP

**I want to make the visiting from Océ museum and the Customer Experience Center smooth for visitors.**

According to the original assignment, the bridge needs to be built between Océ history which is preserved in Océ museum and Océ current which is shown in Customer Experience Center. The story from the museum to the Center should be coherent and logical and the space conversion should be smooth for visitors.

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### THE MARKETING TOOL

**I want to show Océ's innovativeness and its accumulated knowledge of printing in the ever-changing market.**

According to the previous research, the museum should play a role in facilitating long term relationship with small format customers. Shaping a vibrant and promising image will help Océ earn its customers' trust. Océ museum can support sufficient proof for that.

As a technology driven company, its investment in knowledge developing and its tradition of innovation deeply rooted in the culture of Océ. It witnesses three big technical changes in reprography, from diazo copying, electro copying to digital printing but still have its position in the market.

With its rich exhibits, the museum can provide solid evidence to show that Océ is never be abandoned by the changing world but is the market pioneer. It serves its customers with excellent products in every age and is never stop innovating.

After visiting the museum, visitors will fully believe the vitality of Océ and be confident about collaborating with this eigenzinnig and knowledgeable company.



## 4.2 Target audience

Based on the previous research, the commercial customers will be the target for the redesign.

In the small format market, the number of commercial customers was sharply increased and replaced corporate customers as the main customer group for Océ business.

## 4.3 List of requirements

This list of requirements summarize the research outcome and assignment and describe the desired features of the new concept. It will be used to inspire and select ideas during design and served as criteria in the evaluation phase.

### Content

- The story of company development should be obvious for the visitors.
- The presentation should be standalone without volunteers' introduction.
- The Océ brand value should be clearly delivered to the visitors.
- The exhibition should present the company history in a comprehensive view and balance technology and business.
- The content should be structured into layers to enable explorative content searching.
- The presentation must show a link to the Customer Experience Center.

### Structure

- There should be a clear route in the exhibition to enable visitors to lead themselves during the visit.
- The link between the exhibits in the museum should be strong and logic.

### Experience

- The visitors should involve in the presentation in an interactive and diverse way.
- The visitors should be free to control their visiting pace.

## 4.4 Interaction quality

According to the research, the tour in the current exhibition is highly depended on the volunteers. The visitors are playing a passive role in their experience and must to listen to volunteers' introduction to understand the content. In this circumstance, the richness in exhibits and stories becomes a shortcoming without an intuitive structure, leading to a long and confusing tour for the visitors. As observed in the tour given to the new employees, they cannot concentrate in the last part of visiting.

To improve the experience, the visitors should play an active role in visiting. Besides, to achieve the marketing effect, an active participation is also needed for a deeper understanding and higher empathy to the company development.

Instead of guided by the volunteers, the new exhibition should enable visitors to explore and understand the content independently. The visitors will be their own guide in the visiting and can be free to manage their pace.

The desired experience can be described by **explorative and in control**.

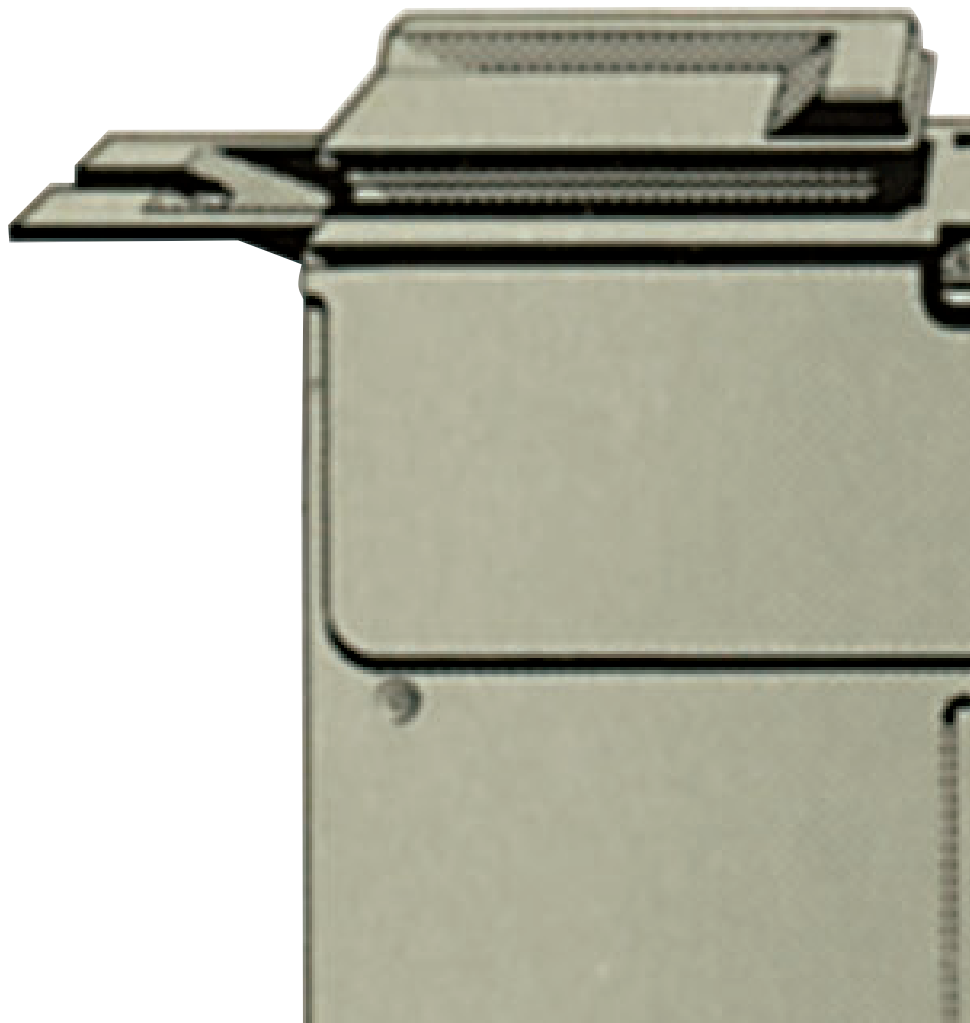
**Explorative** describes an active participation as searching and thinking in contrast to the passive participation as following and listening. **In control** describes that the visitors can control their visiting according to their own situation in contrast to the fixed tour led by the volunteer.

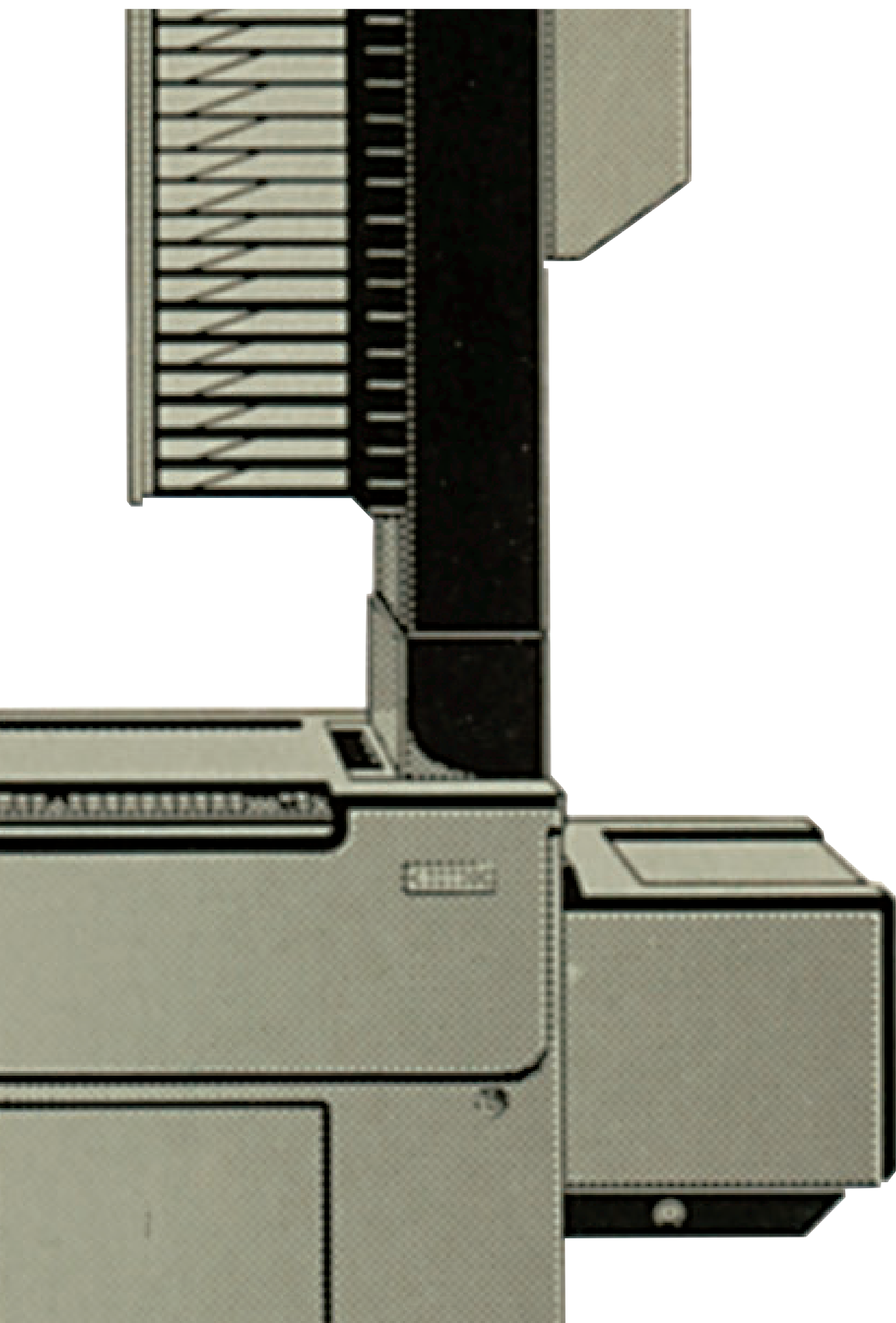




# 5 Ideation

The ideation phase started at brainstorming on several how to's. The ideas are selected and combined into the concept. In this chapter, the ideas which are developed into the concept are introduced.





The how to's are generated based on the design goal and interaction vision.

- How to connect the museum (history) and the Customer Experience Center (current)?
- How to make Océ history relevant to commercial customers?
- How to show Océ is knowledgeable in printing and eiginzinnig?
- How to make visitors actively involved in the exhibition?

# 1

## Device in its time

Although the road of current visiting is in a chronological order, the sense of time is weak and exhibiting devices are isolated from its original context.

The aim of this idea is to bring the device back to its own time. The device, poster of its using environment and descriptive text can be combined as a unit. Through several of this unit, a clear time path can be created leading from Océ history to its current. The gap between the museum and the Customer Experience Center can be bridged.

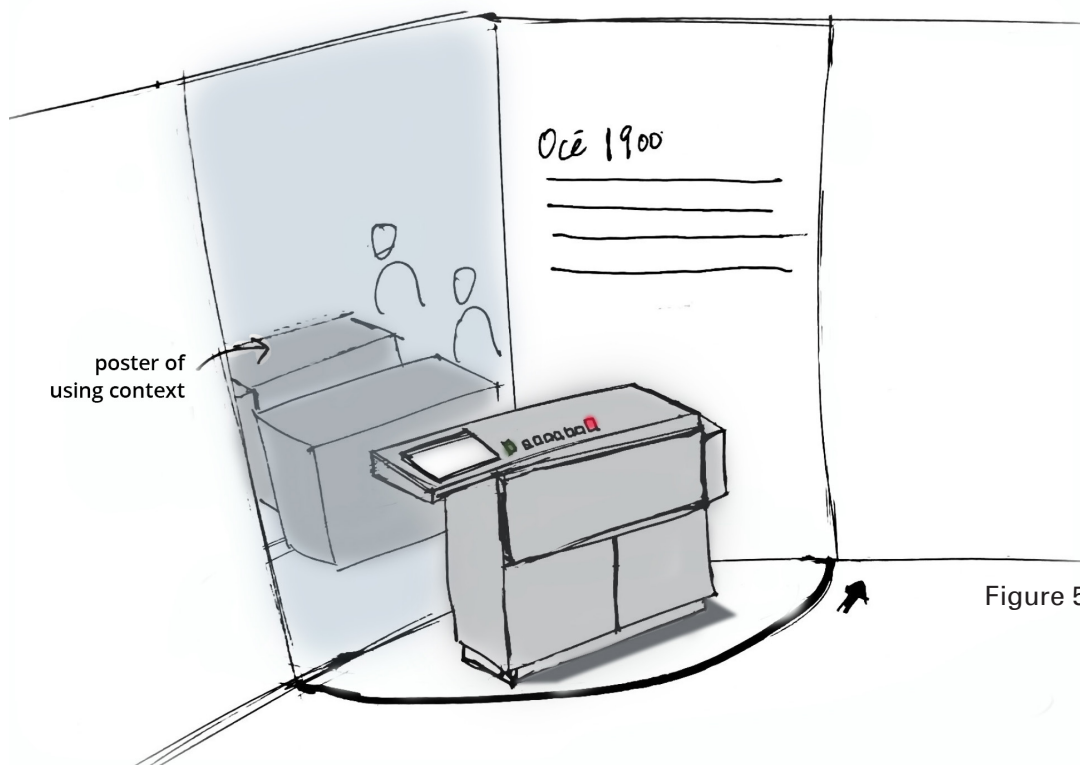


Figure 5.1 Device in its time

# 2

## What Océ can make

The aim of this idea is to inform visitors that Océ devices can produce more diverse applications.

'What Océ can make' links a device with a group of applications and will shock visitors by the growth of application diversity. Visitors will see a huge wall where numerous types of prints or copies produced by Océ devices from 140 years before till now. Visitors will use a telescope to see the wall and can insert a card into it. Each card will be marked with the name of a specific copier or printer and will block the applications that are not produced by this device.

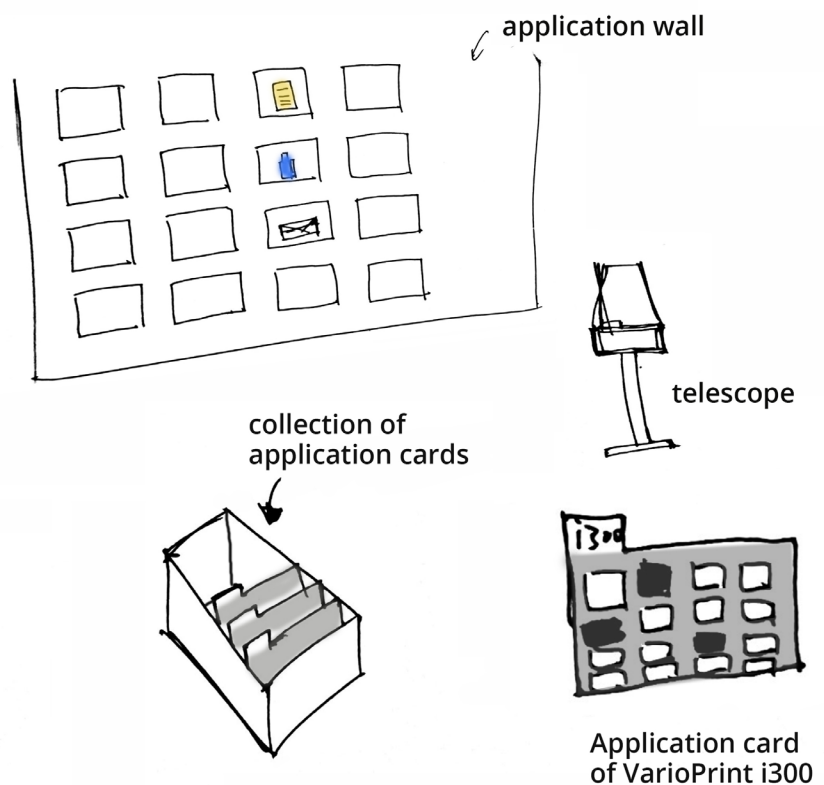


Figure 5.2 What Océ can make

# 3

## See through a copier

The backstage stories would add charms to the cold devices.

In this idea, visitors will observe Océ 1900 through a 'kaleidoscope'. Screw it once, visitors will see the copying process that the original passes through the belt and a copy is made. Screw it again, a detailed perspective how the toner was transferred to the paper and CopyPress process will be shown. Screw it another time, visitors will see a video about an anecdote when developing Océ 1900. In this idea, visitors are led to investigate more around Océ 1900. They will not only know how unique Océ technology is, but also see how innovative Océ employees are.

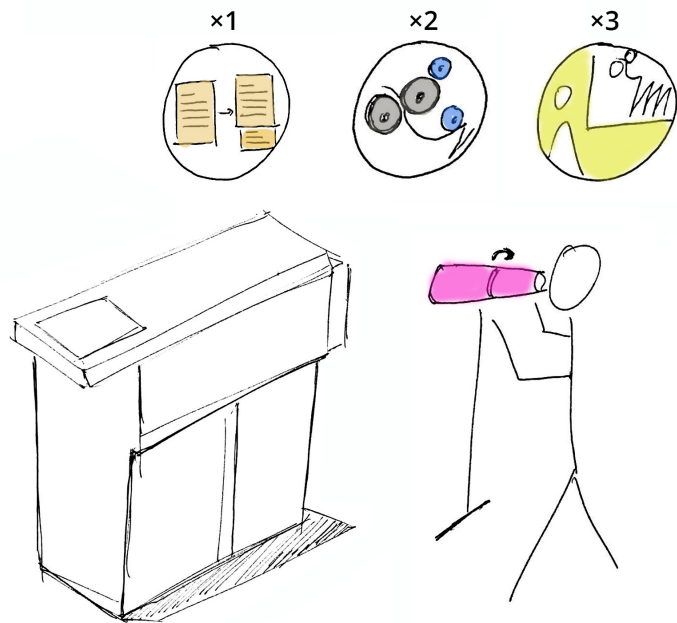


Figure 5.3 See through a copier

# 4

## Application in its context

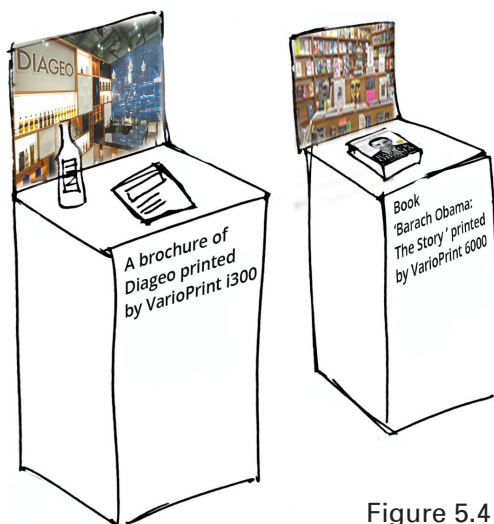


Figure 5.4 Application in its context



# 5

## Experience the innovation

The technology breakthroughs are the driving force for the Océ's growth.

In this idea, visitors will try to improve the mechanical structure and toner component which simulates the technological development from Océ 1700 to Océ 1900. By building the drum and belt and trying to the right formula, visitors can make the copying process more reliable and reduce jam. During this process, visitors will experience Océ's innovative spirit in product developing.

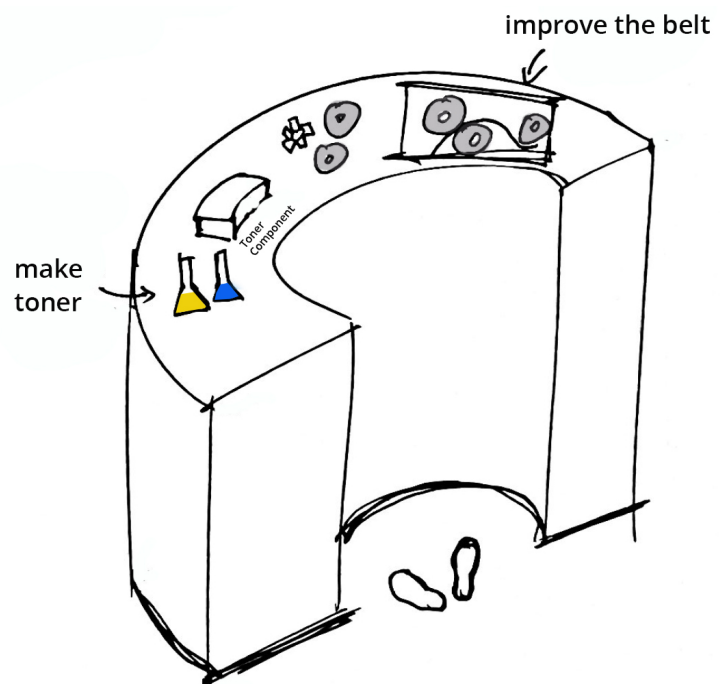


Figure 5.5 Experience the innovation.

Instead of focusing on copiers and printers, the spotlight is put on the applications that can be produced by them. For the commercial customers, especially for the general commercial customers, the ability of produce diverse applications is very important.

This idea presents what Océ products can produce from the past to the current in order to show the increasing application range. The prints or copies would be those that are common in everyday life or meaningful for ordinary people. Visitors may not familiar with Océ as a brand but they may be familiar with the copies or prints that are made by Océ equipment. Through these applications, visitors are expected to reflect on their previous experience and may start to link themselves with Océ.

## SUMMARY

The similar concern behind these ideas is to involve visitors in story exploring instead of listening to the explanation of the volunteer. However, each idea put emphasis on different aspect.

Connect Océ museum and Customer Experience Center	Device in its time	<ul style="list-style-type: none"> <li>• Connect through several immersive spaces.</li> <li>• Devices and their using context.</li> </ul>
	What Océ can make	<ul style="list-style-type: none"> <li>• Connect by an interactive installation.</li> <li>• Attract customers by showing diverse applications.</li> <li>• Devices and their applications.</li> </ul>
Make Océ history relevant to commercial customers	Application in its context	<ul style="list-style-type: none"> <li>• Reflect on daily experience and link Océ with something that visitors are familiar.</li> <li>• Océ explores the production of applications for different use.</li> <li>• Application and its context.</li> </ul>
Show innovativeness and knowledge in printing	Experience the innovation	<ul style="list-style-type: none"> <li>• Experience product development as Océ engineers.</li> <li>• Copying technology.</li> </ul>
	See through a copier	<ul style="list-style-type: none"> <li>• Explore the inside mechanism of a copier.</li> <li>• Devices, technology and relevant anecdotes.</li> </ul>

## Bridging the gap

Comparing to 'what Océ can make', 'device in its time' can be used to build the basic structure and framework for the whole exhibition which will bridge the gap between the museum and Customer Experience Center.



### Device in its time

Connect through a chain of showspaces in the museum.



### What Océ can make

Connect through an installation which can be put between the museum and the Center.

On the one hand, by detailing the using context of the old devices in the museum, the sense of time flowing can be strengthened to make the transfer from past to current less of a sudden. On the other hand, the pattern 'a devices embraced by its using context' is similiar to the layout in Customer Experience Center where printers are presented in the environment of a printing factory. Beause of this similiarity in physical arrangement, the coherence between the two places can be strengthened.

In a word, the combination of device and its using context as explained in 'device in its time' will be applied for the new exhibition.

---

## **The marketing tool**

These ideas involve several elements that can present a comprehensive history of Océ from different perspectives:

- Devices (copiers/printers)
- Reprographic technology.
- Using context.
- Applications (copies/prints).
- Anecdotes about the copiers and applications.

Visitors are familiar with applications and using context because of their work or through other channels. For example, they may have seen the old offices on TV. These familiar information can give visitors a hint of time and facilitate the gab bridging.

The old copiers and the technologies would be something unfamiliar or even hard to understand for visitors. But these parts is the core business of Océ as a technology driven company and is where its company culture roots. The presentation of the devices and technology would be the highlight in the journey of visiting but should be intuitive and easy to understand for visitors.

The anecdotes can be used to enrich the using context and to show the development of the reprographic market. This anecdotes can give more details to the history from an individual perspective, and make the story more convincing.

In the next chapter, these elements will be integrated and well organized to tell an engaging story of the company's growth.

## 6 Concept Proposal

The concept combines the elements of the ideas that introduced in the previous chapter. It links the museum and Customer Experience Center through four ages. In each age, the typical products, applications and the copying/printing technology are presented. The four ages present the highlights in Océ history and briefly introduce its development in small format copying/printing.





## 6.1 Introduction

### MAIN AIM

The concept puts the spotlight on Océ's change in its target market for small format, from office copying to production printing. The exhibition aims to inspire commercial customers by Océ's growth in reprography and to show that Océ is never abandoned by the changing world and always explores the market. Knowing this, customers can trust Océ for long term collaboration.

The design proposal mainly to improve the exhibition where the small format and wide format exhibition are intertwined. The previous parts such as van der Grinten family, butter coloring, blueprinting are not in the scope of this redesign proposal.

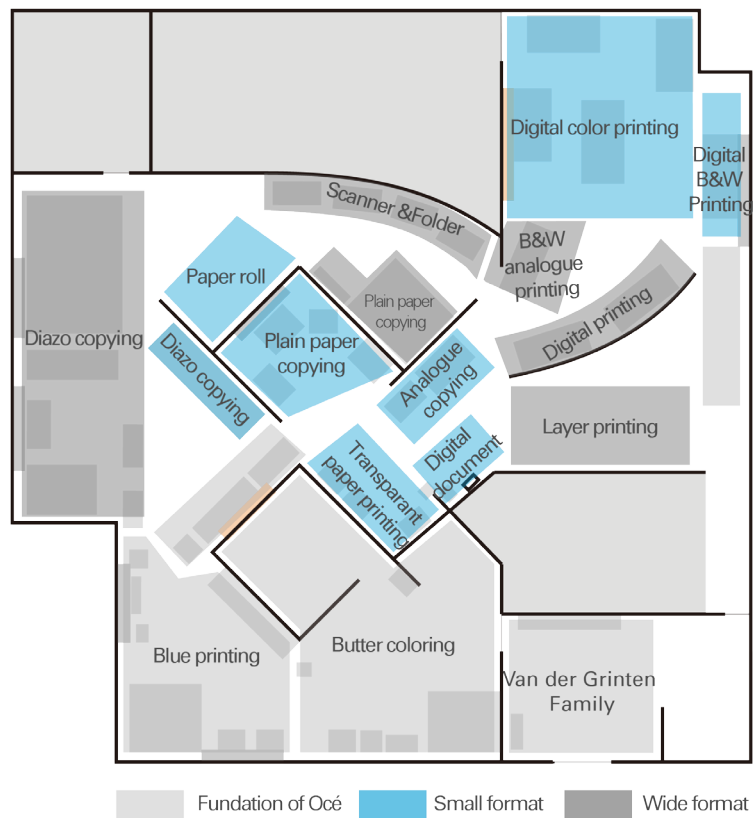


Figure 6.1 Current museum layout. The design proposal is for the experience of the blue parts (small format devices).

## EXHIBITION STRUCTURE

In this concept, visitors will have a time travel from 1960 to 2017. There are four stops in this trip: 1960, 1981, 1997 and 2017. At each stop, visitors will see one or two Océ products, know where they were used (using environment), what they can produce (applications), the technologies that are used in the products. From those stories, visitors can see the changes in reprography from 1960 to 2017 and Océ's actions towards these changes.

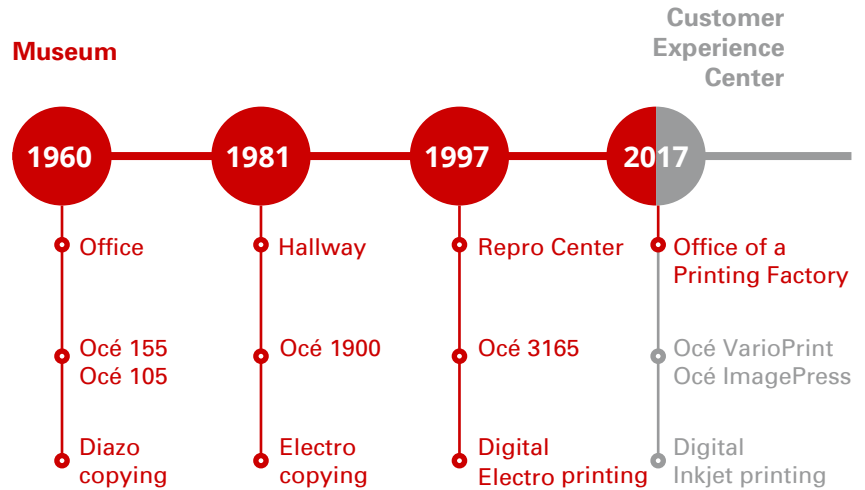


Figure 6.2 Brief storyline.

Unlike the current exhibition which shows the devices and technology straightforwardly, the new design will tell stories layer by layer, from office environment which visitors are familiar, to products and technologies which are professional and unfamiliar for visitors. Visitors will be encouraged to explore the Océ's performance in the old time instead of directly present the unfamiliar devices and complex technology.

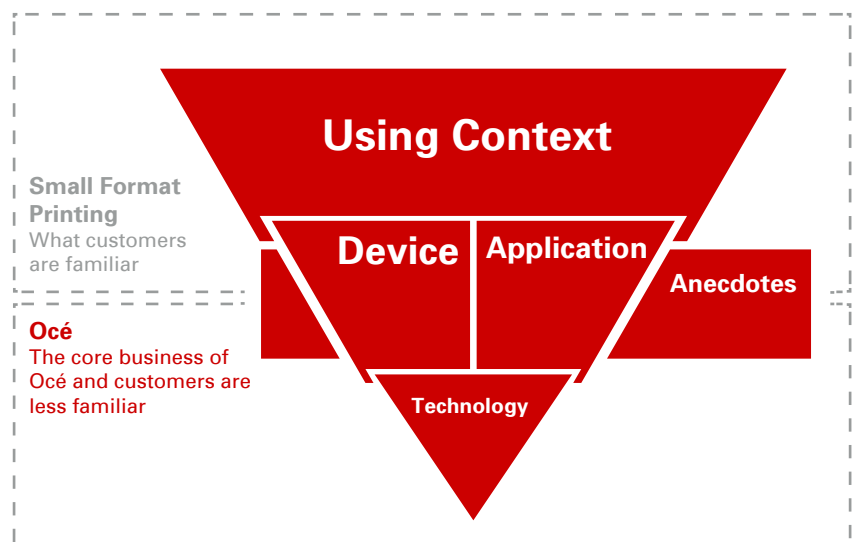


Figure 6.3 Structure of the five elements

In the following sections, the four time instants and selected products will be introduced. How visitors will experience the exhibition will be explained.

## 6.2 Time instants and products

The products selected in the concept are important milestones in Océ history, from both technology and market perspective. From technology perspective, these products were along with the crucial technology breakthrough which significantly improved the productivity of printing. From market perspective, these products witnessed Océ's step in exploring new business opportunities and applications in small format market from office copying to production printing.

Based on the introduction time of this products, a storyline in chronological order is decided. The offices of different ages can strengthen the feeling of time changing and indicate the change in market positioning. Since the concept aims to show the growth of Océ along with the changing world, the evolving offices can provide the time background for visitors as a reference.

In this section, introduction for the four time background and products will be given.

# 1960

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### Océ 105 combine and Océ 155 combine

In the 1960s, copying was based on diazo technology. Océ 105 combine and Océ 155 combine are two diazo copiers that are released respectively in 1956 and 1958. These two copiers are for different office use.



Figure 6.4 A secretary is typing for her boss.

Source:<https://www.flickr.com/photos/pepemichelle/sets/72157619931346715/>



Océ 105 combine is a desktop copier and is typically used by the secretary for the boss. When the boss wanted to copy a document, he gave it to his secretary who would copy it manually by Océ 105. Océ 105 can produce only one copy at a time and it serves only one people.



Figure 6.5 Océ 105



Figure 6.6 Océ 155

Océ 155 combine is more productive comparing to Océ 105 combine. It serves a group of typists which is known as a typing pool. The typing pool was ordinary in the company of 1950s and 60s when the typewriters were wildly adopted but the personal computer was not invented. These typists serve any executives without a permanently assigned secretary. Océ 155 was usually placed in a small room beside the typing office and used by the typists to copy their typed documents.



Figure 6.7 The typing pool.

Source:<http://www.aviationarchive.org.uk/Gpages/html/G1722.html>

# 1981

## Océ 1900



Figure 6.8 Océ 1900.

In the 1970s, electrophotography was the common technology for copying and people began to copy on plain paper (normal paper) which is uncoated. Océ 1900 is an electro plain paper copier which was released in 1981. Because of the innovation of toner, Océ 1900 was very reliable. Océ 1900, with the speed of 45 copies per minute, is an important step in Océ high-speed copying. This copier was a huge success and strengthened Océ's reputation in the office market and expanded more use which lay the foundation for Océ's development in corporate market in the future.



Figure 6.9 The cubicle in 1980s. <https://www.morganlovell.co.uk/articles/the-evolution-of-office-design/>

# 1997

## Océ 3165

The reproduction process was digitized after the introduction of CAD/CAM and office automation. From 1990 to early 2000, the internet widely immerses into the society and change people's way of working.

Océ 3165, launched in 1997, is Océ's first digital copier/printer. Océ 3165 is multifunctional which integrates scanning, printing, networking and image enhancement. Its way of working is similar to the current printers that people can send their documents to the printer and print. The process of printing was very easy and no learning was needed.

Océ 3165 cannot only be used in the office but also in the reproduction center of the company. The printing speed was significantly increased in Océ 3165 and its printing quality is comparable with offset printing because of mechanical and electrical innovation(OPC belt and CopyPress technology). With this product, Océ moved into the mid-volume printing and strengthened its status in the corporate printing market.



Figure 6.10 Océ 3165.

# 2017

## Venlo Customer Experience Center

The time machine moves to the current. In 2017, with the mature development of internet, the nature of printing is expanded. In small format printing, the prints are not only used to inform but to facilitate a more emotional and vivid communication. The need of color sharply increased and graphic art plays a more important role. The trend of personalization is influencing printing technology.

Océ position itself into production printing and launched various high volume printer and workflow softwares. The small format printers shown in Venlo Customer Experience Center are all sheetfed printers which owns a significant advantage of flexibility. These printers can be used in printing transaction mails, documents, books, magazines, advertisements such as brochures, flyers and so on. With these products, Océ facilitates a smarter and more efficient production for commercial customers who print for sale.

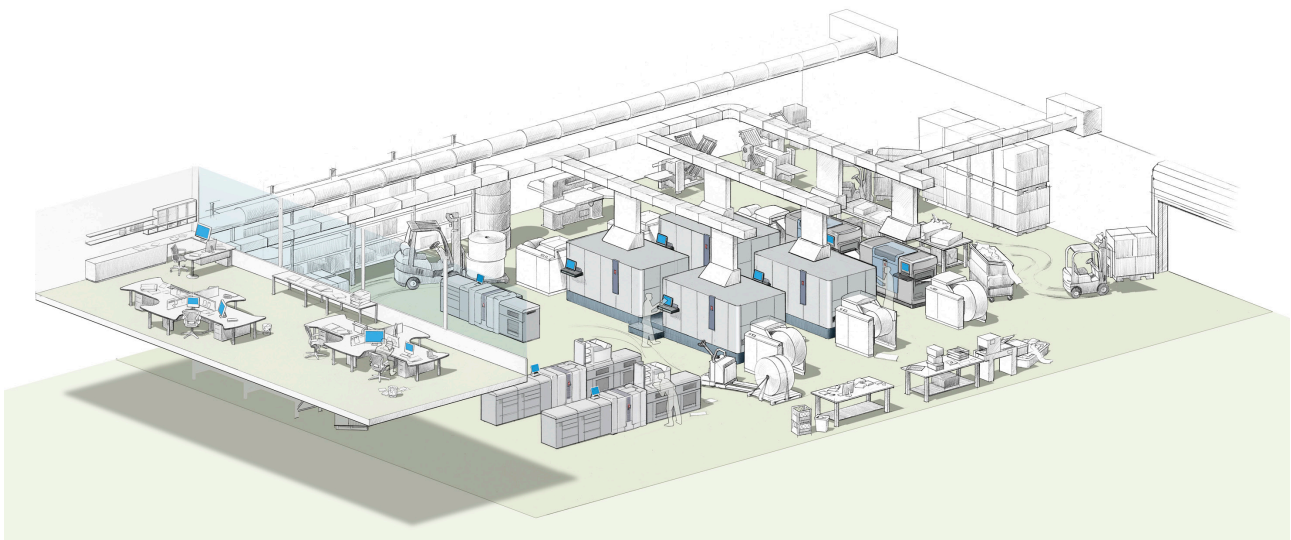


Figure 6.11 Sketch of printing factory.

## 6.3 Visitor journey

In the museum, visitors will be immersed in the using scenario of the mentioned devices and experience the old way of copying or printing. During this experience, visitors will not only know what Océ can make (the typical applications) at different time, but also learn how Océ make them (technology). Anecdotes about applications and devices from product users' perspective and Océ employees' perspective will enrich the scenes and make the story more vivid.

How visitors will experience the time and what visitors can see, do and learn in the four scenes are listed below.

# 1960

### See

- A corner of a secretary's office who works especially for the boss and Océ 105 on the desk.
- A part of the typist room and Océ 155 beside it.
- Various office documents and copies in 1960 and copied by Océ 105 and 155
- Coated paper used to copy documents

### Do

- Copy a document by Océ 105 and Océ 155
- Listen to an anecdote of a typist and a secretary about how the two devices helped their work.
- Listen to an anecdote of an Océ employee about introducing different devices for different office uses.

### Learn

- Océ starts its business in small format market at producing copiers for office use.
- The diazo copying in 1960.

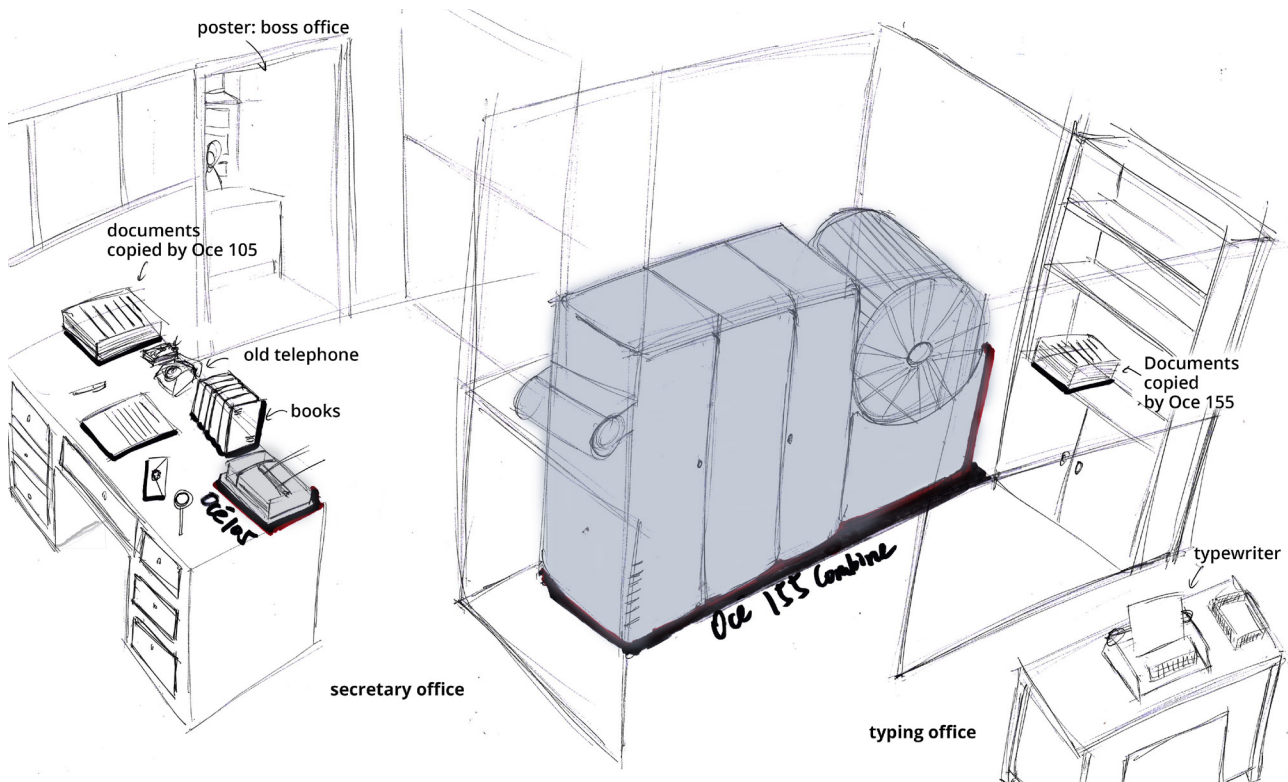


Figure 6.12 Sketch of 1960 scene.

# 1981

## See

- The cubicle style of office in 1981.
- Océ 1900 placed in the hallway.
- Documents, invoices, copies, books and other paper in 1980

## Do

- Copy a document by Océ 1900.
- Check the letter sharpness of the copy by a magnifier.
- Listen to an anecdote of an office worker about the convenience of copying with Océ 1900 (green button).
- Listen to an anecdote of an Océ engineer about the improving the reliability of Océ 1900 (toner improvement).

## Learn

- The electro copying technology on plain paper of Océ 1900 (CopyPress).
- The productivity of Océ copier was improved to fulfill the increasing demand of office copying.

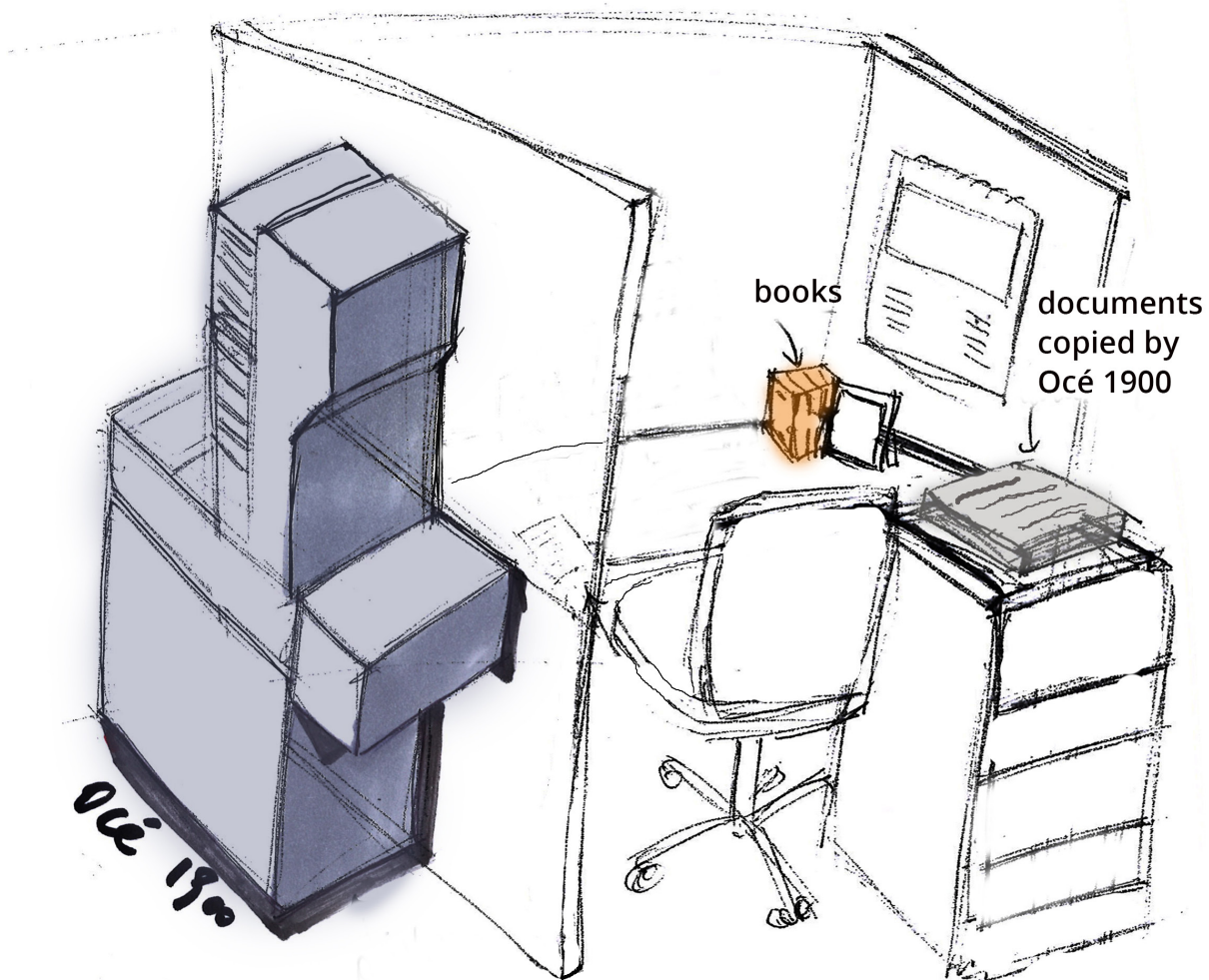


Figure 6.13 Sketch of 1981 scene

# 1997

## See

- A corner of a reproduction center in 1997.
- Océ 3165
- Documents, invoices, letters, books printed or copied by Océ 3165.

## Do

- Print a report by Océ 3165.
- Check the print quality with a magnifier.
- Listen to an anecdote of an operator about the convenience of digital and mail printing with Océ 3165.
- Listen to an anecdote of an Océ engineer about the awareness in software development.

## Learn

- The technology of digital electro printing and OPC belt.
- Océ moved into the market of mid-volume printing and further develop the corporate market.

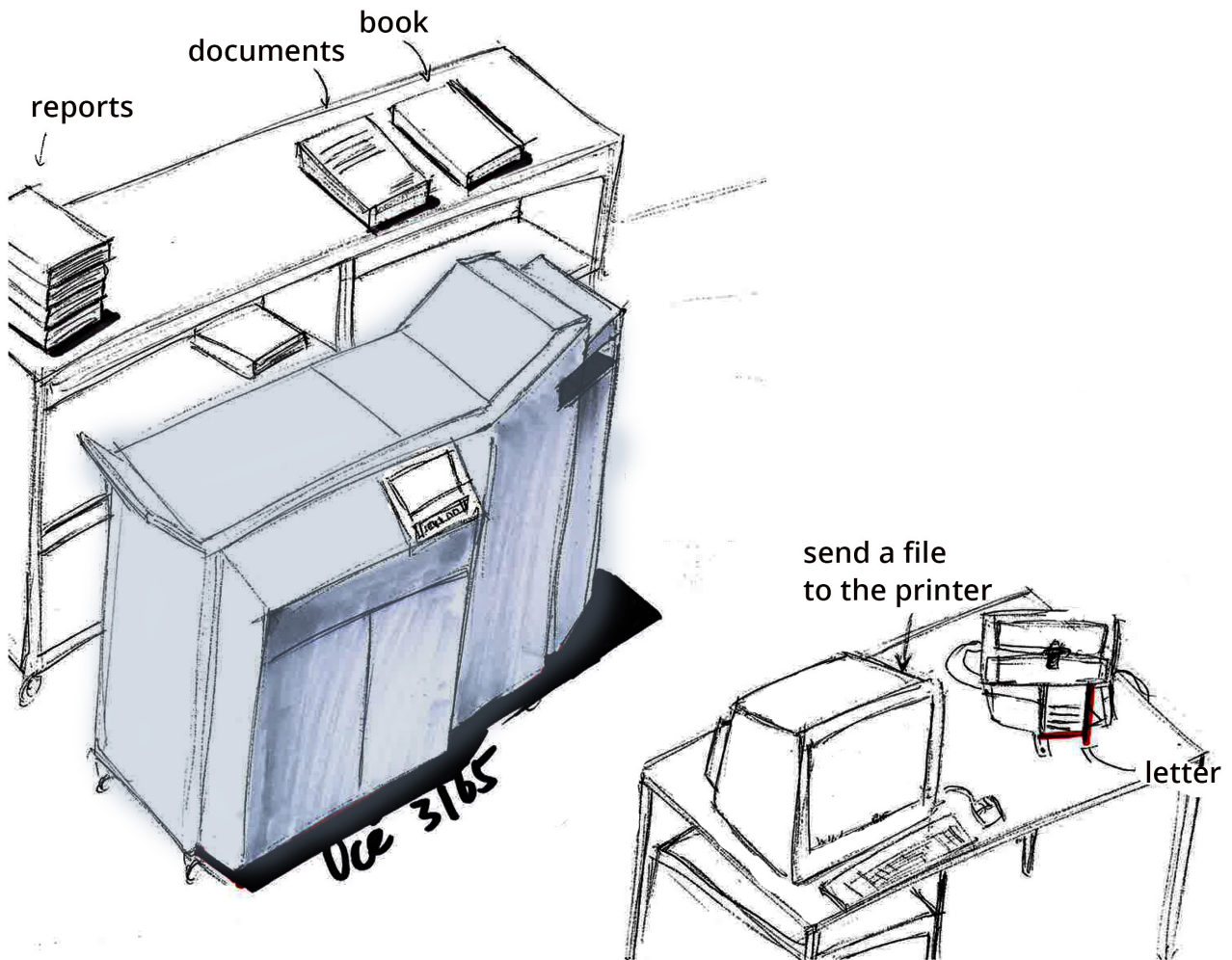


Figure 6.14 Sketch of 1997 scene

# 2017

## See

- A corner of the office of a printing factory.
- Customer Experience Center at the other side through a glass.
- Various of prints, such as books, magazines, brochures, flyers, reports, transaction mails and so on.

## Do

- Listen to the anecdotes about the applications: transaction mails and personalization, brochures and color printing, magazines and media combination, books and print on demand.

## Learn

- Océ focuses on high-volume printing and is developing in production printing now.
- The application diversity of Océ products is increased.
- Personalization in printing becomes common.
- Color will become more important in printing.

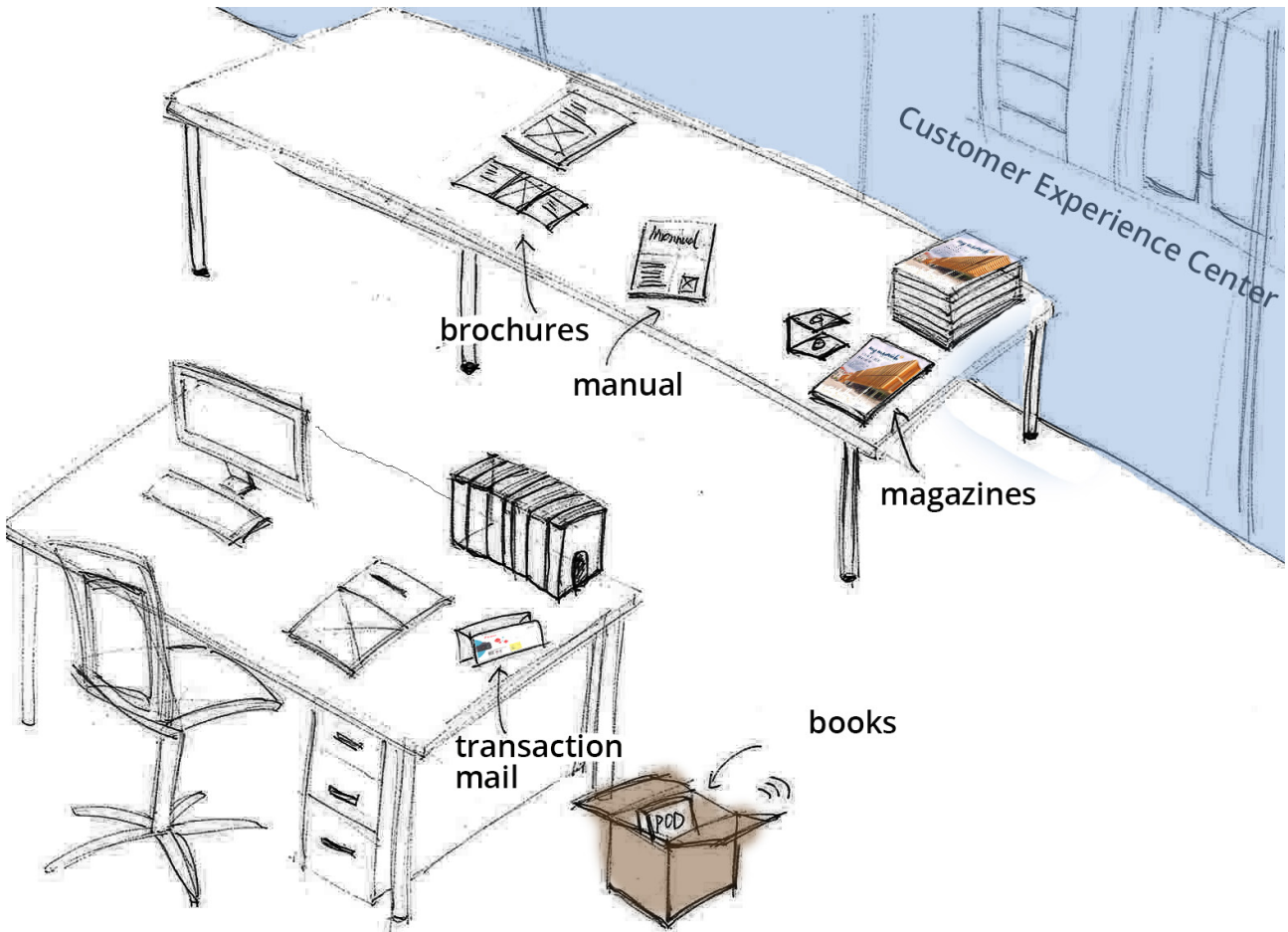


Figure 6.15 Sketch of 2017 scene



## 6.4 Presenting devices and applications

The four scenes simulate the four different times and show the changing market of Océ in a explicit way. However, deeper knowledge around the devices and applications are waiting to be explored by visitors.

In this section, how visitors explore the deeper knowledge will be explained. Two specific time instants will be used as template and interactions in the two scenes can be applied in other scenes.

---

### STORIES ABOUT THE DEVICES AND APPLICATIONS

Stories around the applications and products provide more knowledge about the time instant. From these stories, the trends can be seen that the process of reprography becomes smart and the productivity was continuously increasing. User-friendliness is an important rule of Océ product who claims that users do not need to know anything, the copier/printer knows everything (about copying/printing). Besides, the speed and quality of copying/printing increase and the applications become more diverse. With its innovations, Océ moved from low volume copying to high volume printing. It develops devices from only for copying documents in the office to participating the mass production of books, magazines, transaction mails, advertisements and so on. The cost efficiency was also improved.

Visitors can get inspired by these trends and may imagine the future development of reprography. For instance, currently, inkjet technology is widely developed because of its advantage in printing speed and usually applied on coated paper which is expensive. From the scene of 1960 and 1981, visitors can see that Océ developed copying from on coated paper to uncoated paper (plain paper). They may think inkjet printing will be used on uncoated paper in the future which can save their cost. In the last scene, they will find Océ is developing this technology, Color Grip, which enable inkjet to be applied on various media, both coated and uncoated paper. In the Customer Experience Center, visitors will see VarioPrint i300 which equips Color Grip.

## EXPERIENCE WITH THE PRINTERS

Visitors will know two types of information around Océ products: how the products were used and how the product works technically.

- **Know how the product was used by first-hand experience.** As listed in the visitor journey, in each scene visitors will try to use the product. It would trigger their deeper reflection about what have changed over the years and let them be more aware of the improvements after experiencing the changes first-handly.
- **Know how the product works technically through projection on devices.** The device is facilitated by the technology and the technology is embodied by the device. The projection will expose the inner mechanism of the device and reveal the copying technology which represents the fruit of Océ innovation.

Visitors will know two types of information around Océ products: how the products were used and how the product works technically. Copiers in 1960 scene will be used as an example to demonstrate how to let visitors know the stories (figure 6.14).

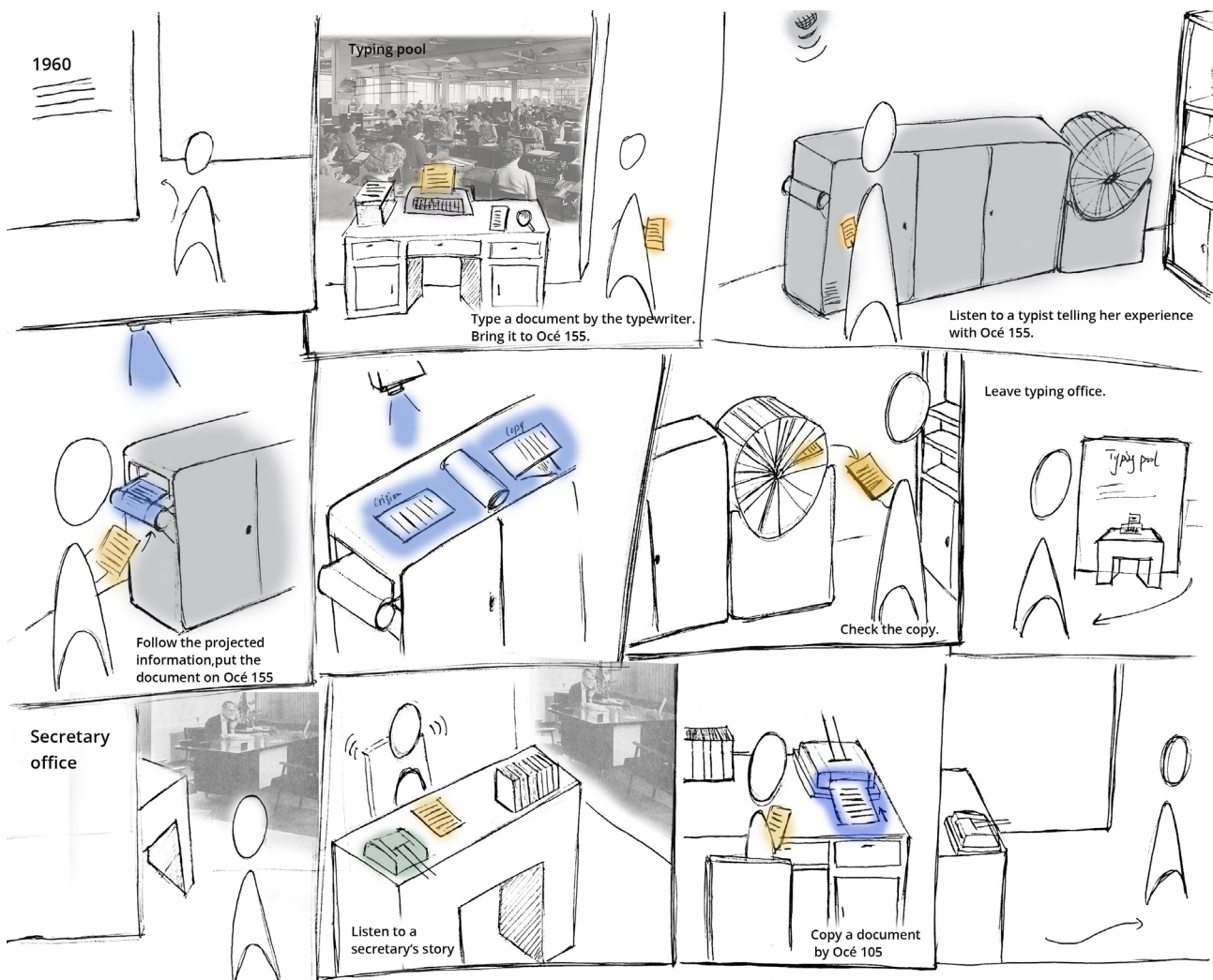


Figure 6.16 Storyboard for 1960 scene.

When visitors approach and explore Océ 155, they will firstly hear a typist telling how Océ 155 helped her in her work. From this story, visitors will know the features of Océ 155 from a user's perspective. Then the visitors can try to copy a document themselves.

During their copying, they will see the projected information on the printer which shows how a copy is made by the device and the diazo technology.

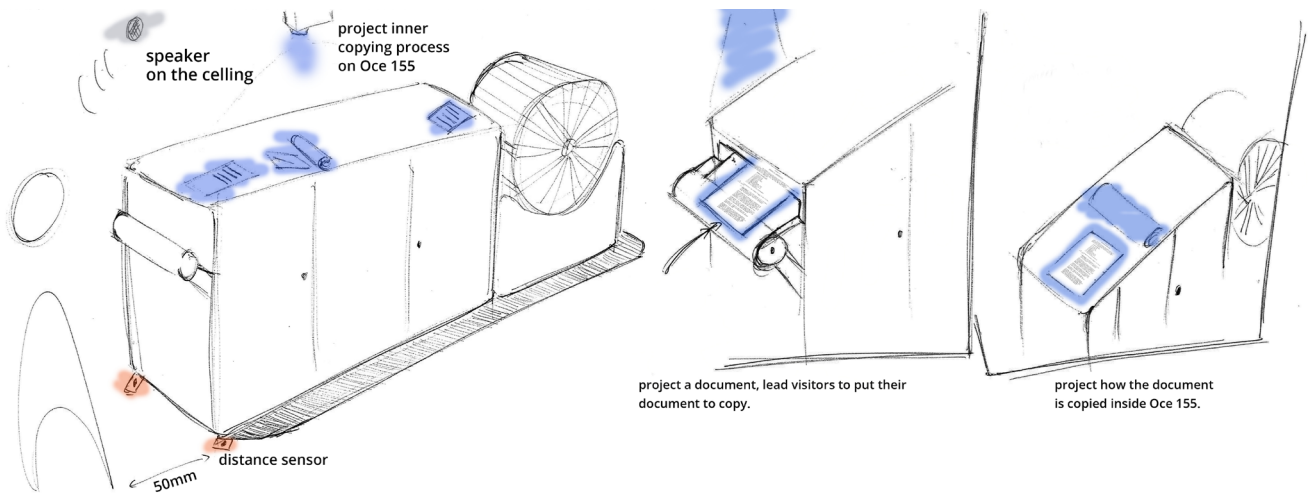


Figure 6.17 Explore Océ 155.

In the secretary office, visitors can sit on the table and feel how a secretary worked in 1960. When they sit on the chair, they will hear a secretary speaking about her work and how she used Océ 105. Visitors can pick a document on the desk and try to copy it as a secretary did. During copying, they will see a projected animation on Océ 105 which shows the copying process inside.

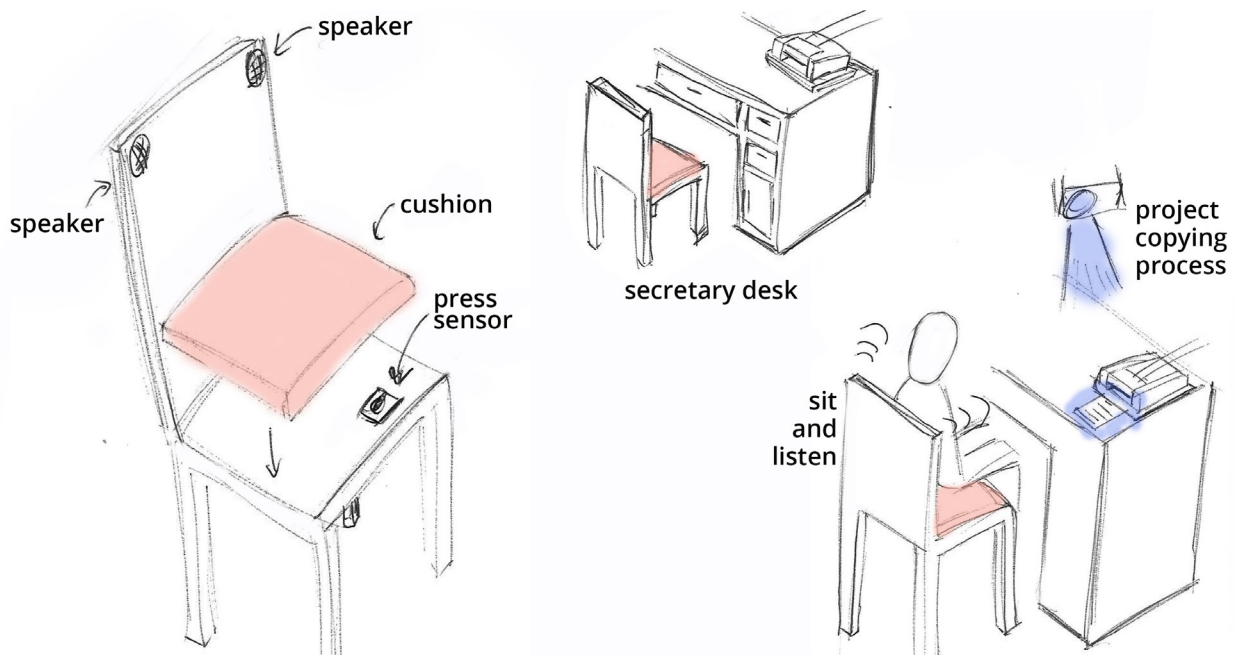


Figure 6.18 Interact with Océ 105.

## EXPERIENCE WITH APPLICATIONS

To introduce the interaction with the applications, 2017 scene is used as an example.

The reason to choose 2017 is that the application diversity in this time is higher compared with the other three, ranging from transaction mails to books and magazines. These applications can be collected from Customer Experience Center and the stories can be gathered by interviewing the product managers. Besides, since it is the last scene before the Center, the information presented here will trigger visitors' curiosity on how the applications are produced and prepare them before really seeing the printers.

Transformed from the idea '**Application in its context**', the scene of 2017 is arranged as an office of a printing factory which embraces the specific context for the presented applications. For example, books will be put into a shipping box to indicate online shopping. The transaction mails and letters with the same receiver's name will be put on the office desk to show they are for a specific person. The magazines are on the table which is waiting for the quality check and distributing.

Visitors will look around in this office and play with this applications.

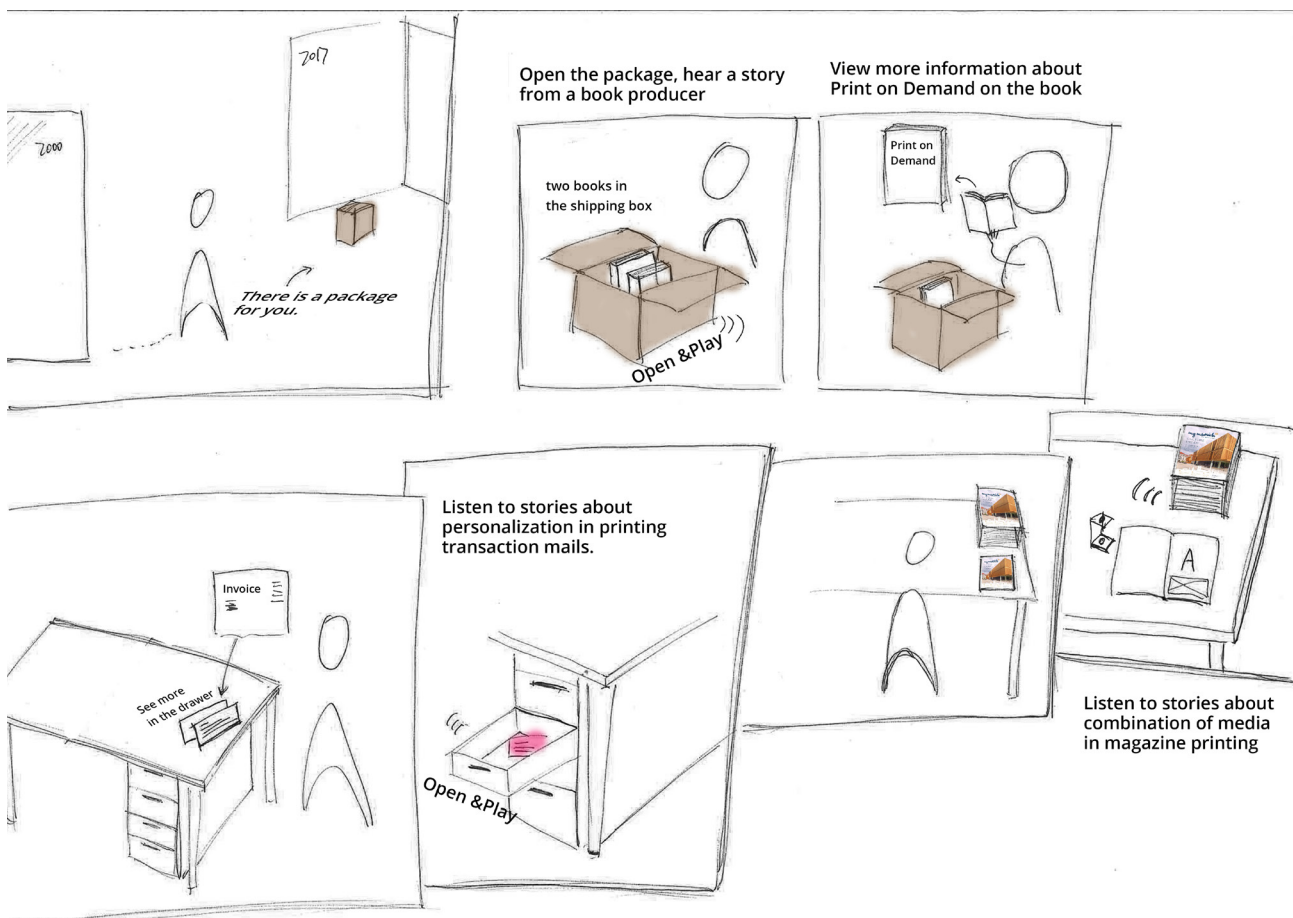


Figure 6.19 Storyboard for 2017 scene.

The stories about the applications will be shown in forms of sound or text printed on the applications.

## BOOK INSIDE A SHIPPING BOX

When visitors open the shipping box, the audio story about book production will start to play. The shipping box represents online shopping. The content inside the box is about printing on demand which is the latest business model for book production.

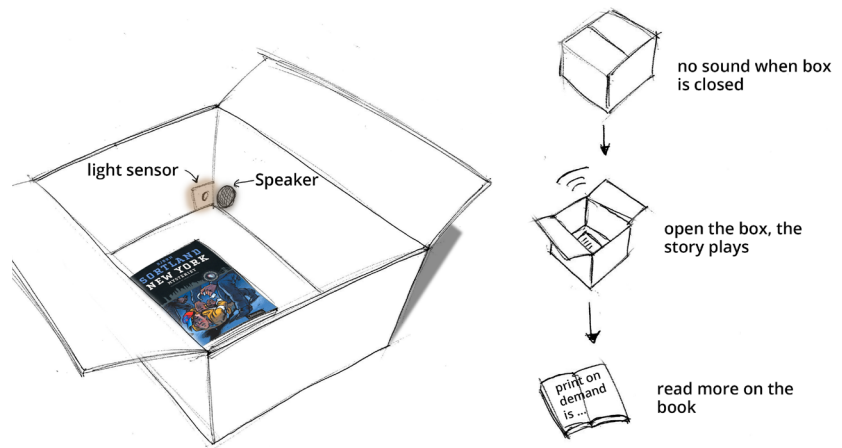


Figure 6.20 Book inside a shipping box.

## MAGAZINE ABOUT COLOR GRIP

Information can be added on the prints. Using the magazine as an example, its inner pages will demonstrate that Color Grip facilitates print on different types of paper (media), coated and uncoated. The fake magazine can make by four types of paper, two coated and two uncoated. On these pages, visitors will see the different print quality by ordinary inkjet printing and inkjet printing with Color Grip. They can use a magnifier to check it more carefully.

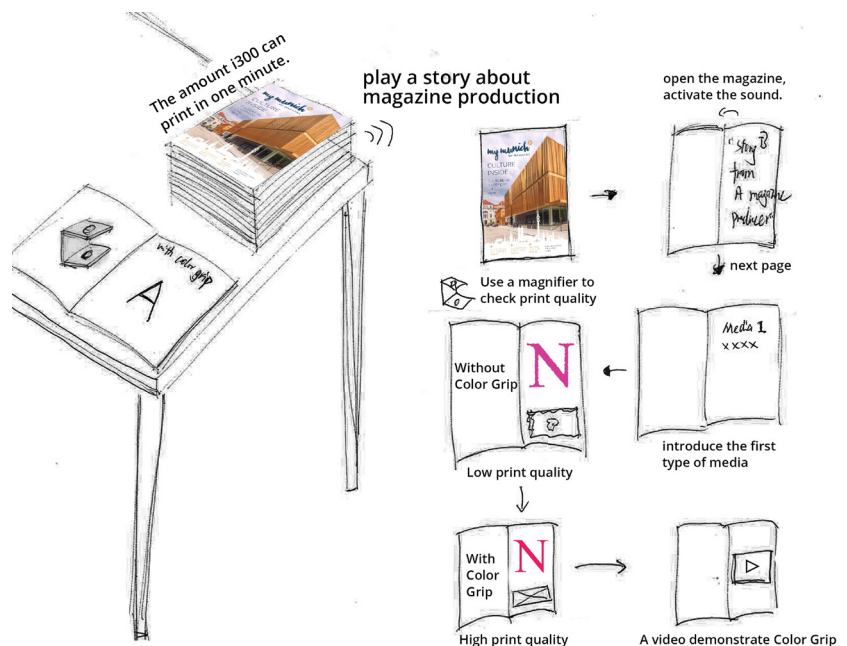


Figure 6.21 Fake magazine with introduction of Color Grip technology.

## 6.5 Summary

### Bridging the gap

- **Through a chronological story of company development.** A storyline from office copying to production printing will make the transfer from the museum to the Center logical and reasonable.
- **By creating a strong sense of time flowing through immersive environment.** The exhibition layout is made up by four immersive environment presenting Océ products in four different ages. Immersing the devices in its old using context will eliminate the difference between the layout of the two places and will make the transfer from the past to the current smooth.

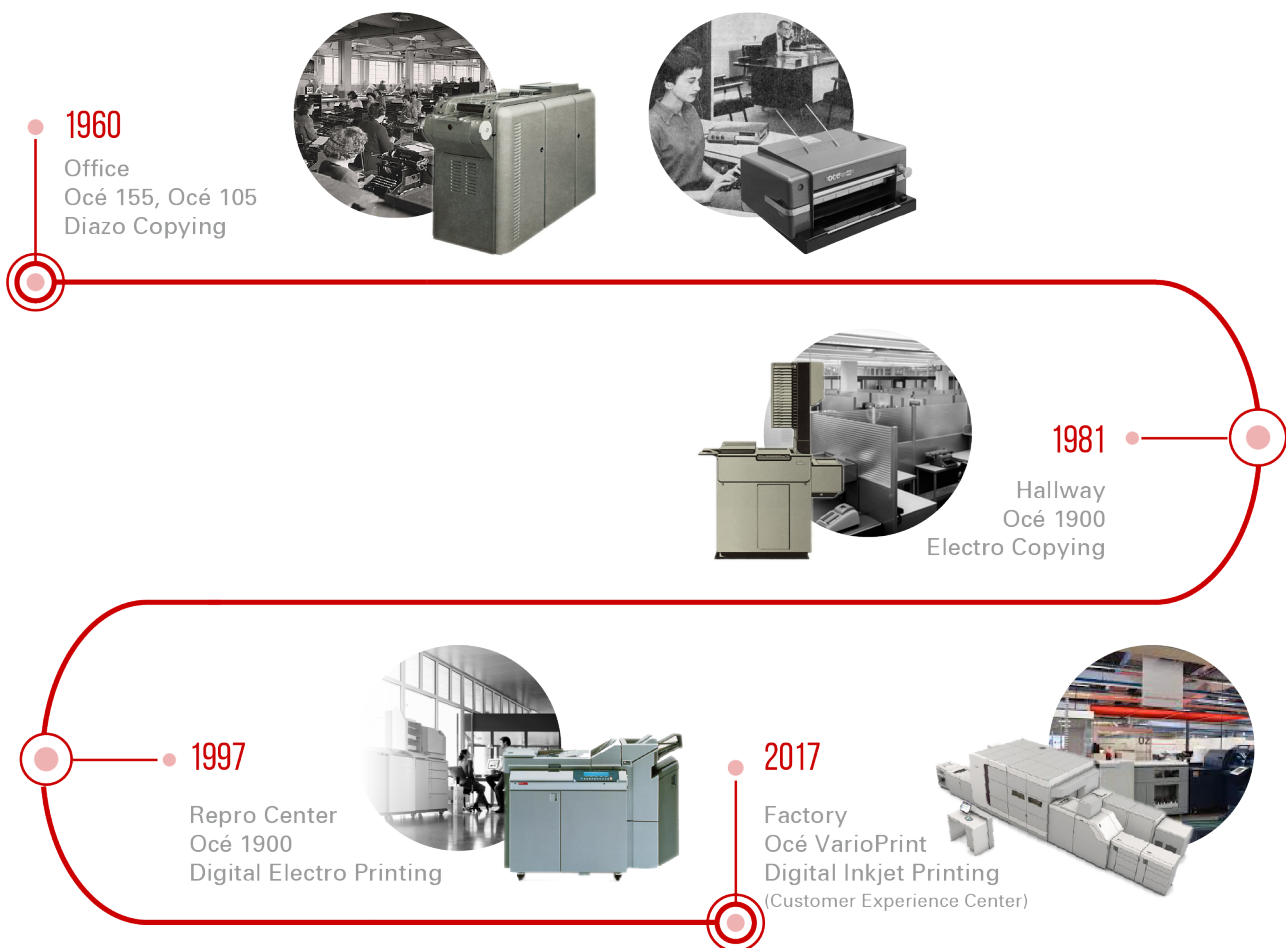


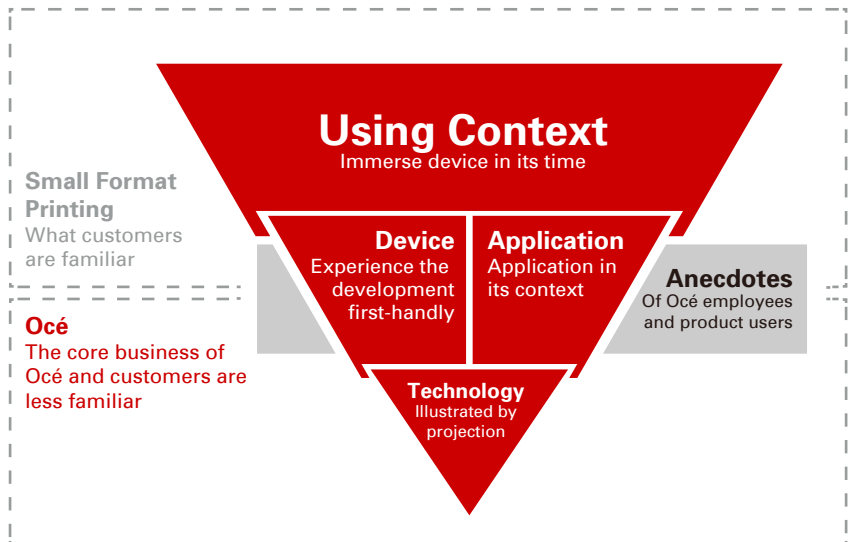
Figure 6.22 Succinct storyline.

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## The marketing tool: Experience the history

Visitors will have a time travelling with four stops in the museum. At each stop, they will experience the way of copying and learn the history which is demonstrated by five elements.

Through interacting with these elements, they will have a comprehensive understanding of Océ and know how it grows with the world.



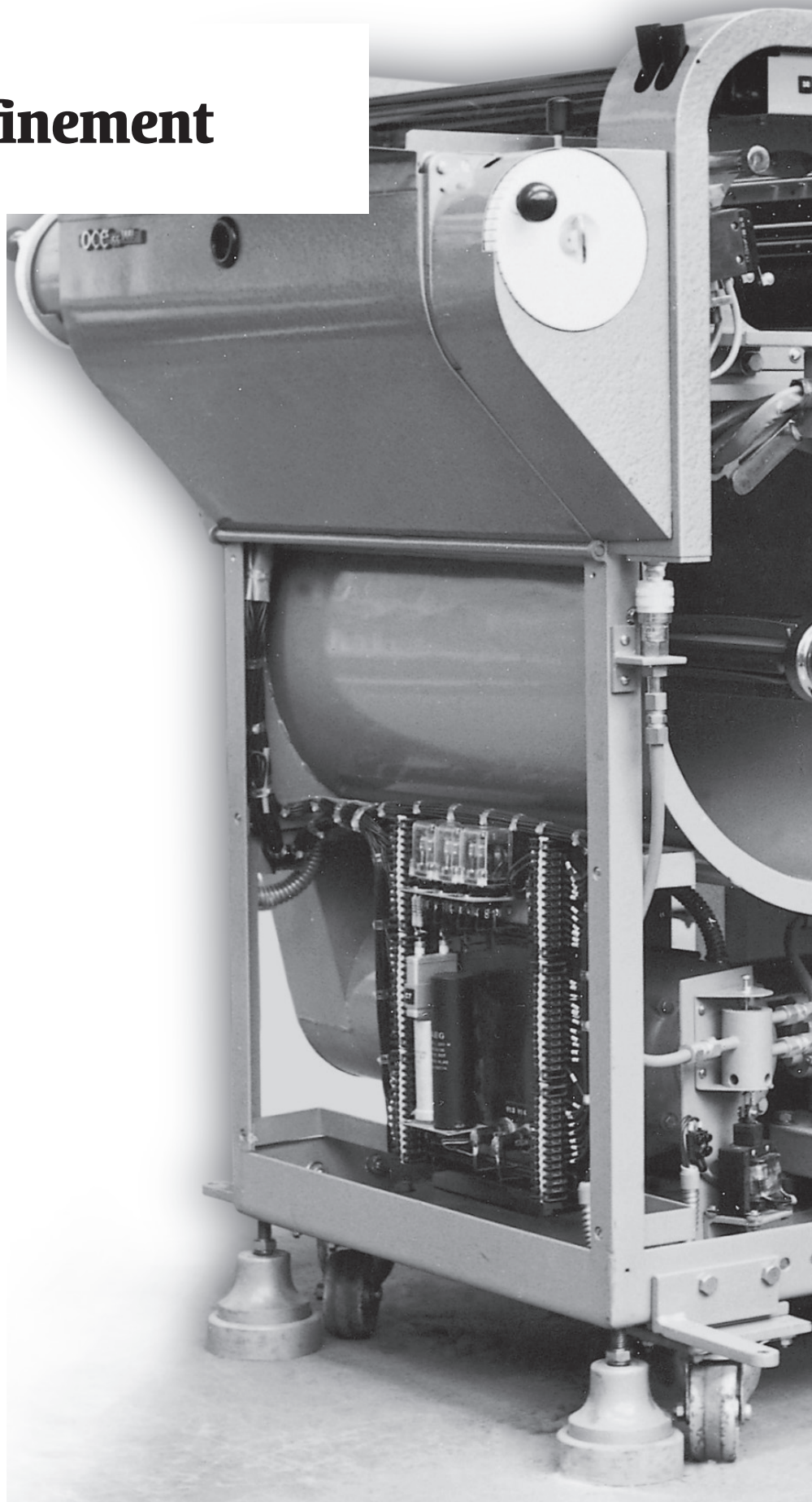
The summary of interaction with the elements is listed:

- Using context: Immersive environment to make visitors feel they are personally at the old time.
- Applications: Hunt the prints in its context.
- Devices: Use the devices by themselves and feel the improvement of printing first-handly.
- Anecdotes: Listen to the backstage stories of applications and devices from different perspectives.
- Technology: Explore how the copies are made by projected illustration.

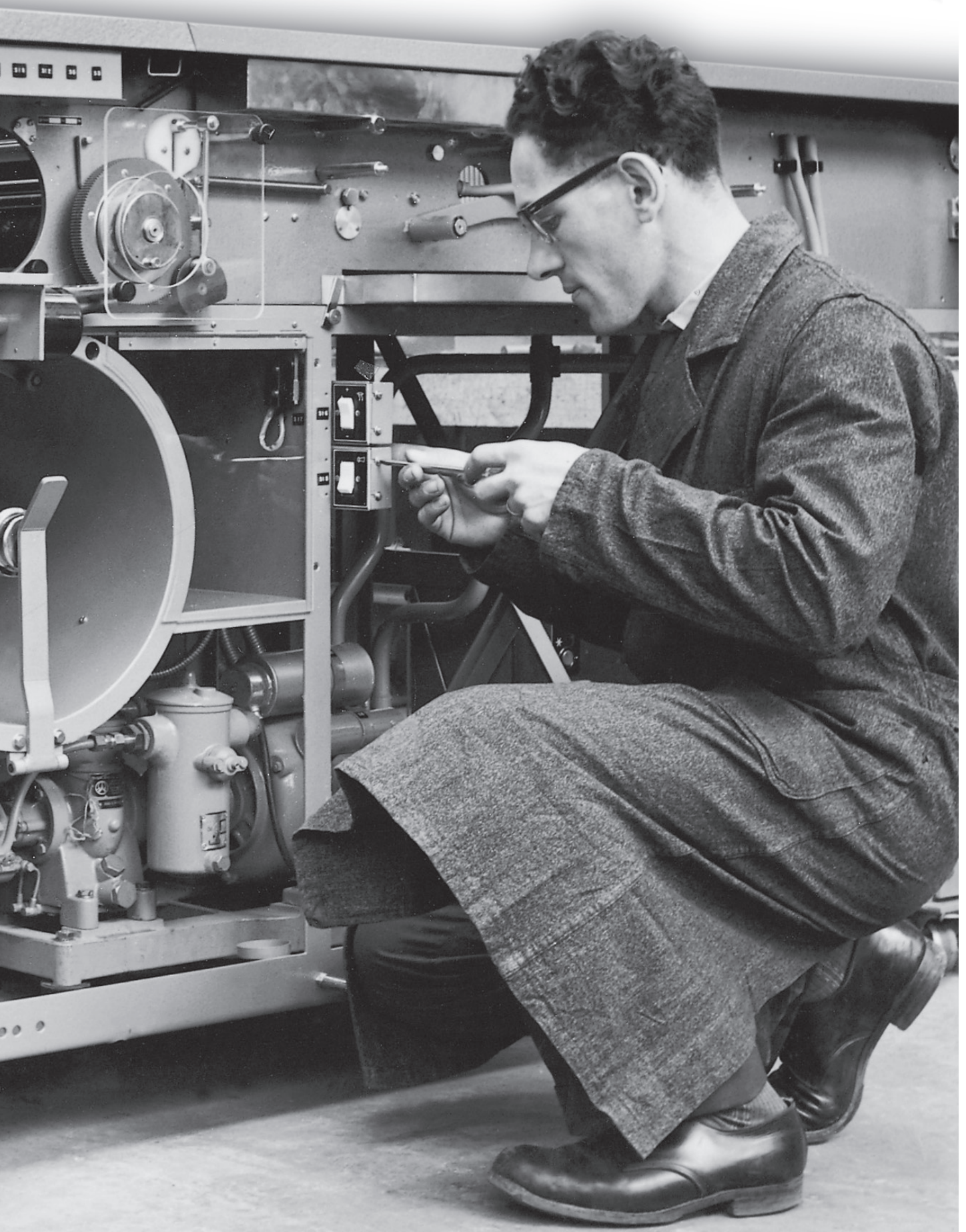
In the next chapter, some elements will be selected to be further developed to validate the concept.

## 7 Concept Refinement

In this chapter, the 1960 scene will be developed to describe two important elements in the concept: navigation and projection. Small tests are done to select the idea for navigation and to improve the experience of interacting with the projection. The improved experience of 1960s scene will be illustrated at the end.







## 7.1 Introduction

The scene of 1960 will be developed in this chapter for two concerns:

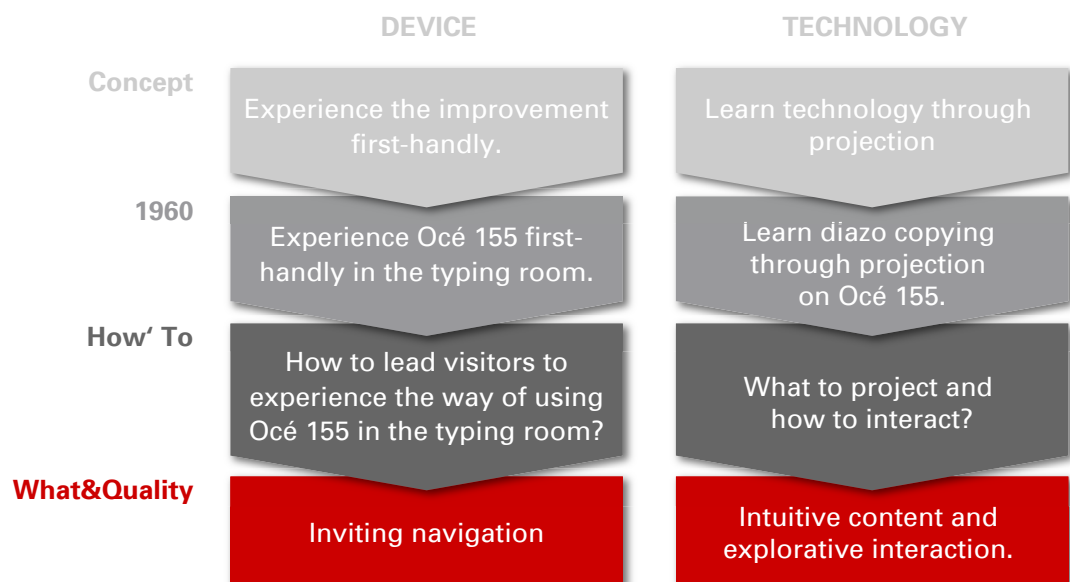
- If the trip in the museum is a play about Océ's growth, '1960' would be the first scene of this play. Visitors are still in the learning phase on how to perform in the museum. If the experience of this stage is clear for visitors, they will follow the same pattern easily in the next three scenes.
- For the convenience of evaluation, the big contract between 1960 and the current will trigger more reflections and can make up for the less immersive environmental arrangement in the test.

As described in the previous chapter, Océ 105 and Océ 155 are selected to show Océ's achievements in the diazo age and its exploration in the different office using scenario. But **the experience in the typing room and with Océ 155 will be further developed in this chapter.** It is because Océ 155 represents Océ's early attempt in developing productivity and can see a link with Océ's current target market of high volume printing.

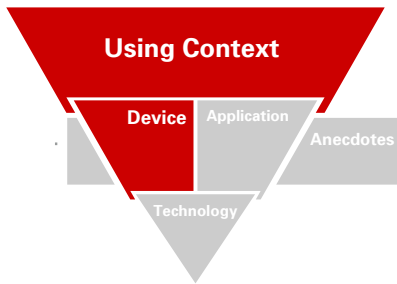
The elements which will be further developed are **device and technology.** It is because they are the core business of Océ as a technology driven company and the core content of the current museum. Besides, they are difficult to present regarding to their complexity and professionalism.

The using context will also be mentioned but the focus will not be a dedicated environment design but will be the experience in the context.

Based on the concept mentioned in the previous chapter, specific how to questions are put forward for detailed refinement.



## 7.2 Navigation



The ways to guide visitors and give instructions is researched. The typing room is used as the background. In this room, visitors will simulate the copying process as a typist. They will firstly type something on typewriter and bring it to copy on Océ 155.

The ideas of navigation are tested with four people and their feedbacks will be introduced. The final solution for navigation will be put forward at the end.

### TEXT INSTRUCTION

When visitors come into the typing office, they will first have a look at the overall environment. Then the environmental light becomes darker and only the desk area is bright to attract their attention on the desk.

Beside the typewriter, visitors will see a piece of paper on which the instruction is projected. The projection will give instructions one by one. The instructions are:

- 'Please sit down.'
- 'Do you remember what happened in your country in the 1960s?'
- 'Can you document your memory by typing it down?'
- 'Please bring your document to the copying room.'



Figure 7.1 Projected instruction

---

## SOUND

In the beginning of the trip, visitors will hear the typing sound from the typing room. Attracted by this sound, they may approach and have a look at the typewriter on the desk which is the source of the sound.

Visitors will notice the pre-typed instructions and then sit down to type. After they sit, the sound will fade out.

After finishing typing, they will hear the working sound of Océ 155 which will attract them to move to the copying room.

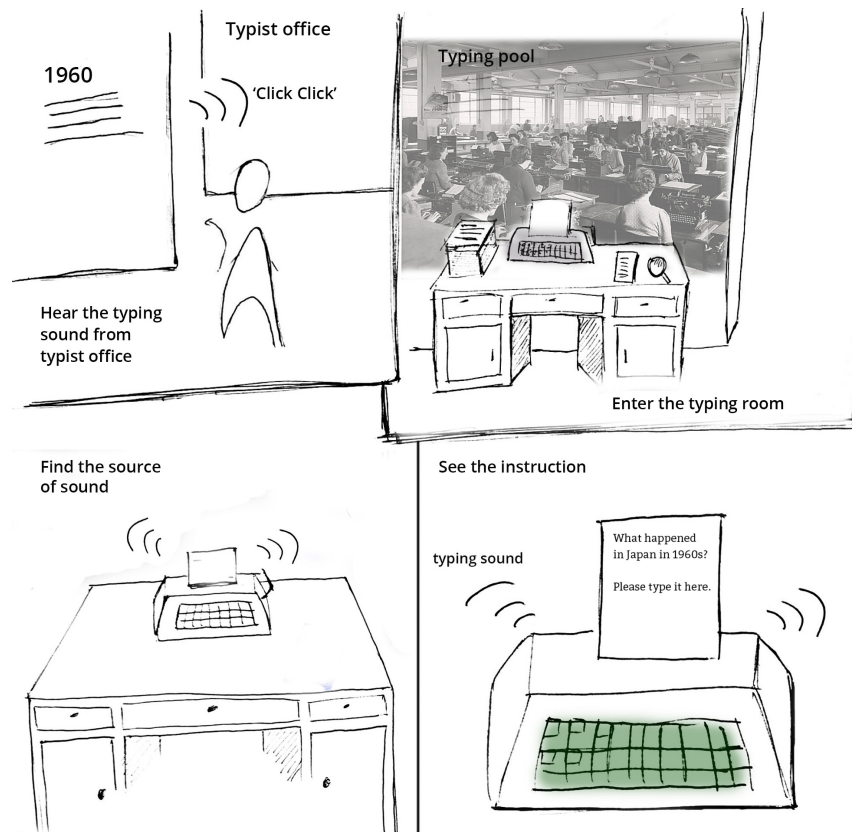


Figure 7.2 Sound

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## SHADOW

When visitors come into the typing room, a beamer will project a black human figure on the wall, like a shadow. The shadow will move out from visitor's shadow and then 'sit' at the desk. It seems that the visitor's shadow becomes alive and becomes the guide for the visitor.

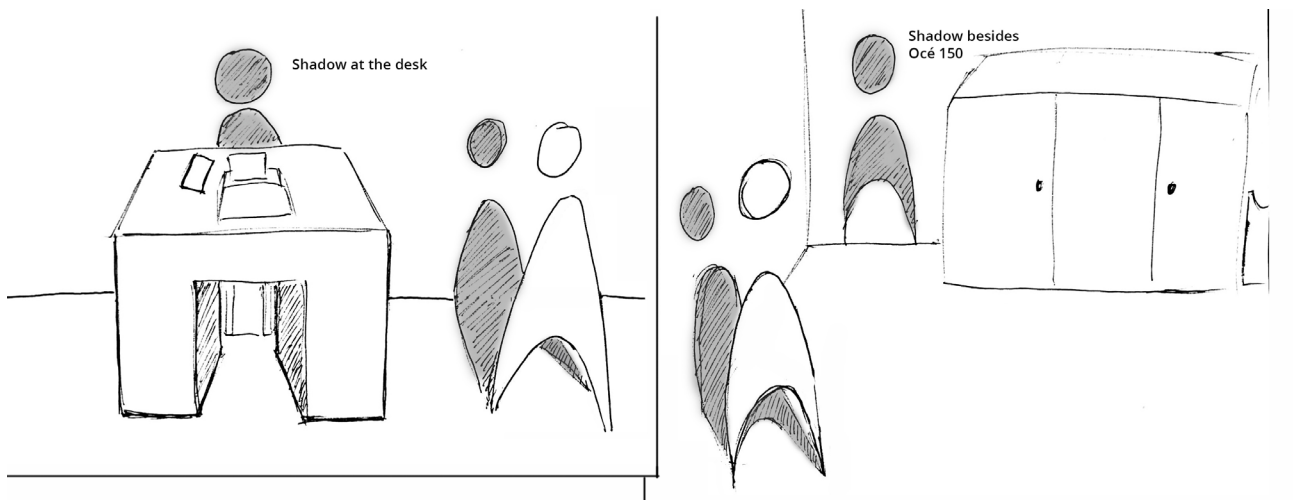


Figure 7.3 Shadow

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## FOOTPRINT

Different from projecting on the walls, stepping footprint are projected on the ground and lead visitors to move from one room to another. It stops at a precise place such as in front of the chair or besides a copier to indicate visitors what to do.

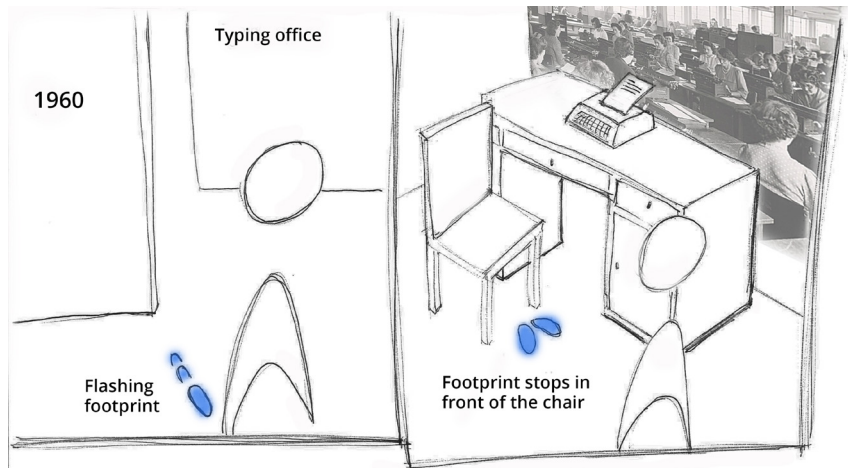


Figure 7.4 Footprint

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## TEST

Four people were invited to experience the four navigating ideas. Two of them were tested in Océ museum the other two were tested in TU Delft.

The goal of this test is to select the suitable and inviting way of guiding visitors in the museum. The actions of participants were observed and questions like 'what are you thinking' were asked when they saw an image or heard a sound. In the end, participants summed up their feelings about the four ways and choose one or two they preferred.



Figure 7.5 Projected Instruction



Figure 7.6 Pre-typed instruction



Figure 7.7 Stepping on the footprint.



Figure 7.8 Following the shadow

---

## RESULT

### PROJECTED INSTRUCTIONS

- The instructions are clear and easy to follow.
- The projected instruction is more interesting than the pre-typed one since it gives a magical feeling and interactive guidance.
- The question 'do you remember what happened in the 1960s' is a bit hard. When participants see the typewriter, they just want to randomly type something. The question gives restrictions and push them to think, which is difficult and cost effort.

### SOUND

- The sound is less intuitive when. Some participants hesitated when they only hear a typing sound but did not see the typewriter or the copier because they did not recognize that the meaning of the sound.
- The sound can be a hint for people to move, but participants did not think it was leading them. The sense of relation between people's motion and the sound is poor.
- The sound is diverse and fits the exhibiting environment. There are different sounds for different devices and different environment, which make the experience in different area diverse.

### SHADOW

- It is clear for participants that the shadow is leading them.
- This way of representation is a bit scary.

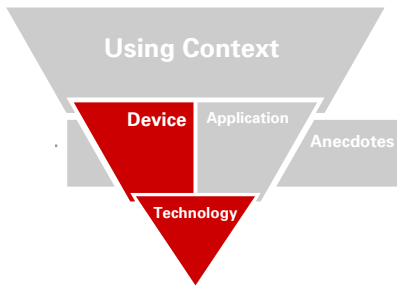
### FOOTPRINT

- It is a clear and inviting way of leading.
- The footprint restricts participants' route choosing.
- The way of interacting with the footprint can be more diverse.

Sound and projected text instruction are combined to navigate visitors in the exhibition and will strengthen the immersiveness in the rooms. It should be noticed when arranging the layout that rooms should be named for a clear indication on the instruction.

The shadow is not chosen since it may cause unexpected feelings on visitors. The footprint does not fit the 'flexible' quality of the whole experience.

## 7.3 Introducing device and technology



As explained in the previous chapter, the projection on the copier aims to show how the device works and how a copy is made. In other words, it will explain the copying technology with the help of the device.

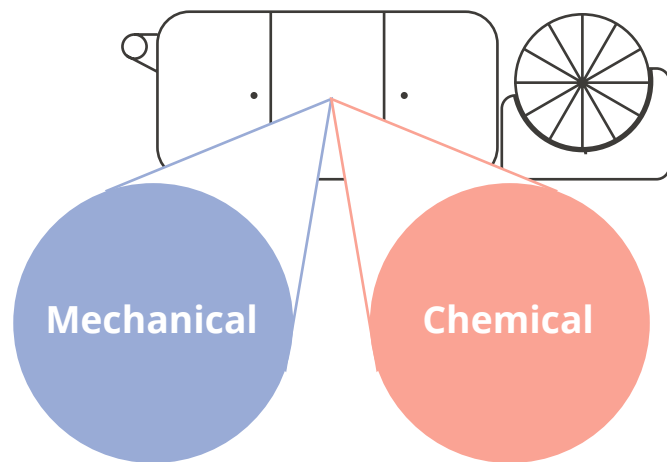
The projecting technology is widely used in the museum exhibiting because it enables an interactive and immersive visiting experience. There are various projecting technologies, from one dimension projecting to hologram which can create a three-dimension visual effect.

In this section, the ways of introducing the Océ 155 and diazo copying technology by projecting are explored.

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### CONTENT

The knowledge of Océ 155 and diazo copying can be translated into two perspectives: mechanical perspective and chemical perspective. Copying process from the mechanical perspective can be observed from the copier while the chemical changes happened on the paper need to be magnified and well explained.



- The paper path through the machine
- The inner structure of the machine
- The function of the mechanical parts
- Visible changes on the paper
- Diazo copying from the micro perspective

Figure 7.9 What can be shown from mechanical and chemical perspectives.

---

## INITIAL EXPLORATION

Small tests are done in order to try different ways of projecting on Océ 155 and see their effect. Projections are put on different sides and different types of informations are projected. The effect of the projections can be seen in the figures below.

These tests are done in Océ museum. The limitation is that the area of Océ 155 is too bright for projecting.



Figure 7.10 Project the inner structure on the case.



Figure 7.11 Project the name of the outer mechanical parts.



Figure 7.12 Project the diazo process on the top of the relevant mechanical parts.

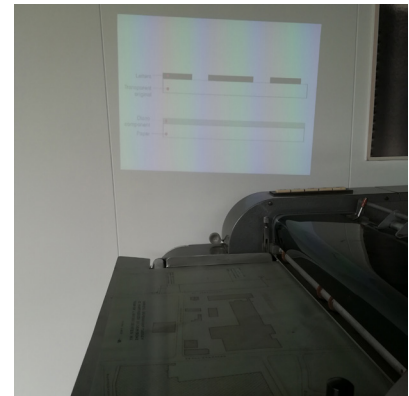


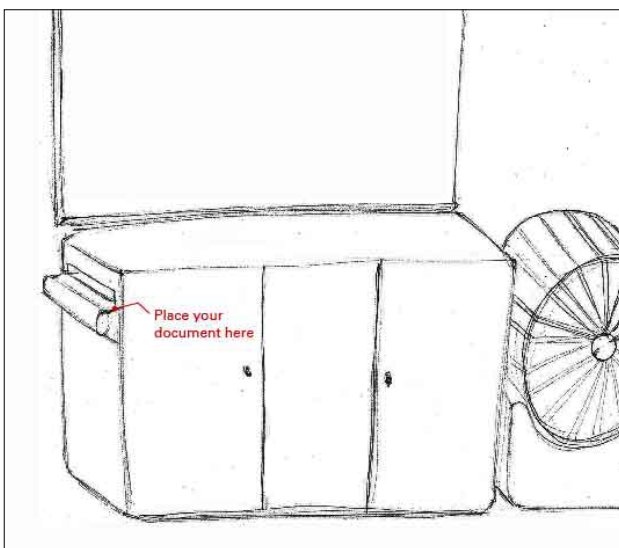
Figure 7.13 Project the diazo process on the wall beside relevant mechanical parts.



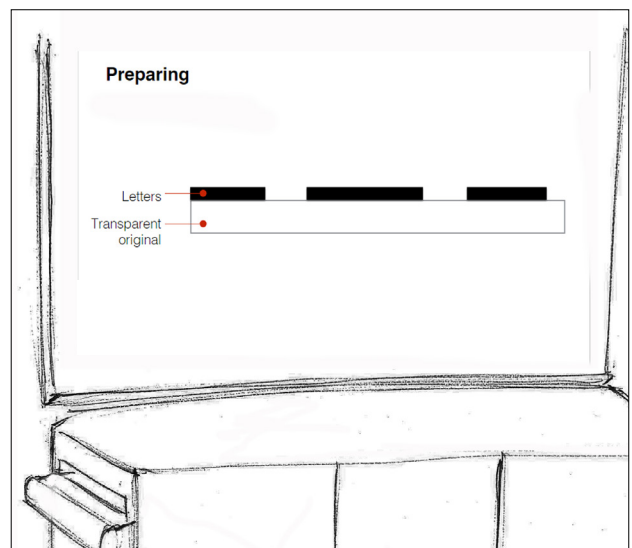
**CONNECT DIAZO  
PROCESS WITH OCÉ 155**

The whole copying process can be divided into four steps: preparing, exposing, developing and drying. Visitors are led to explore how the copier works step by step. The running of inner mechanical parts and the changes on the paper of each step will be connected and presented to visitors.

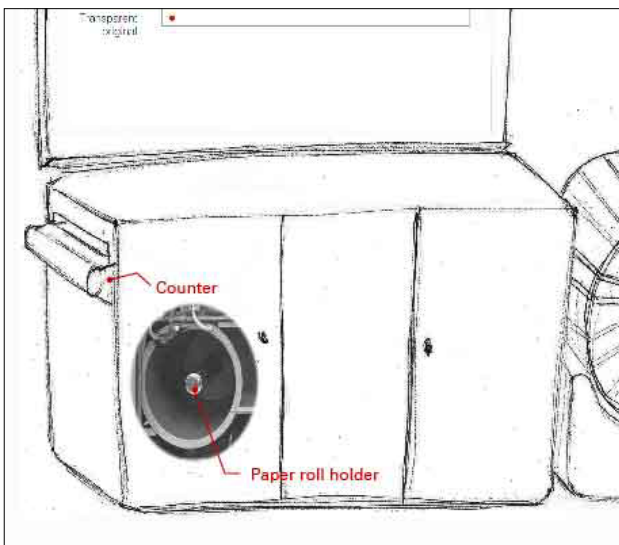
In each step, the relevant inner mechanical parts will be projected on the case and visitors should interact with the projected parts to activate their function and trigger the running of the copier. In the mean time, the screen beside the copier will show the relevant changes on the coated paper to illustrate the diazo process from a micro perspective.



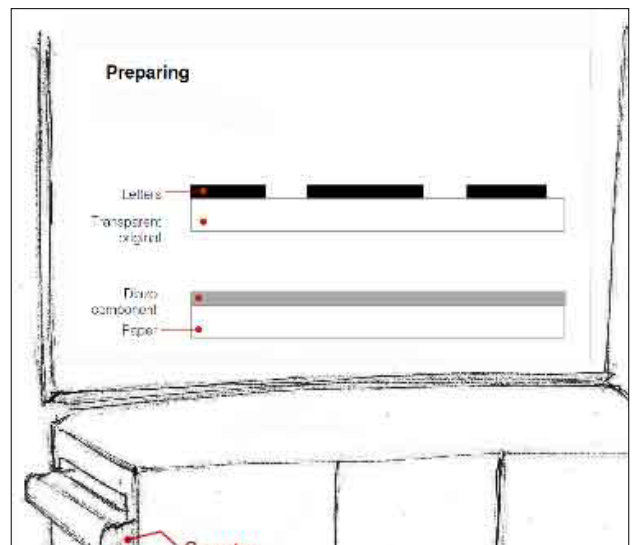
1. Follow the instruction and come into the copying room, see the projected 'place your document here'



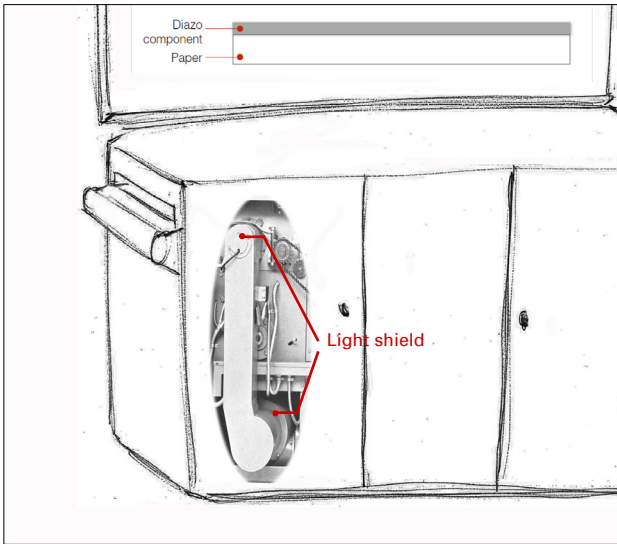
2. The screen shows the original layer.



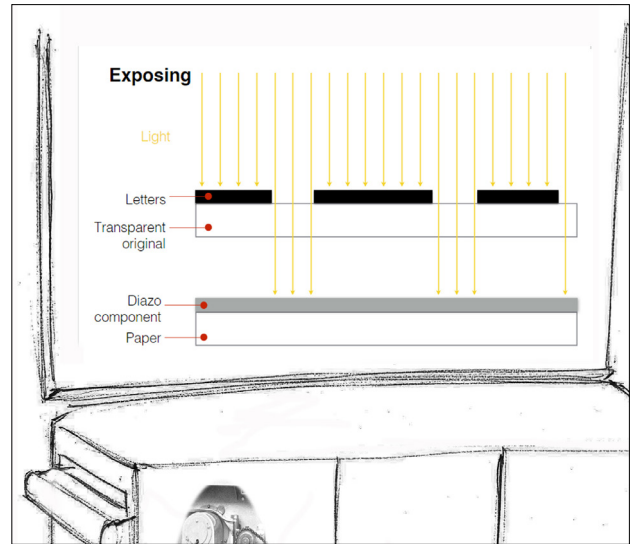
3. The structure relevant to preparing phase is projected and illustrated on the case of Océ 155.



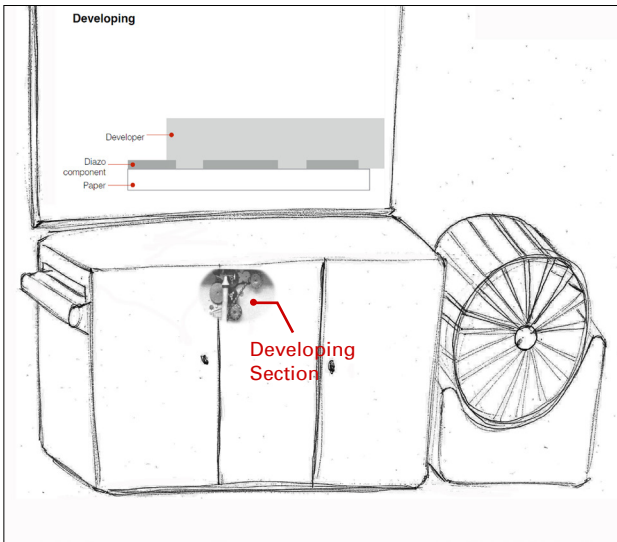
4. The image of paper roll holder begins to flash. Touch it, the screen shows the coated paper layer.



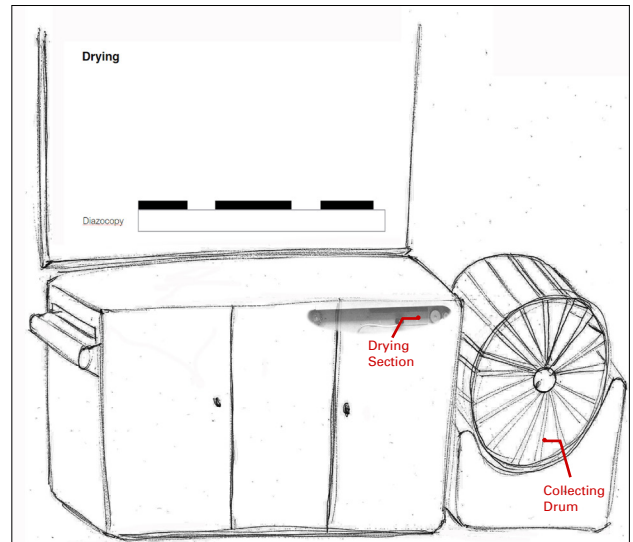
5. The projection on the copier changes to exposing relevant structure.



6. Touch the light shield, the screen illustrates the exposing process.



7. Similar to the previous phase, the structure relevant to developing is projected on the copier. When the visitor touches it, the screen will show the animation illustrating the developing process.



8. The structure and process of drying is shown.

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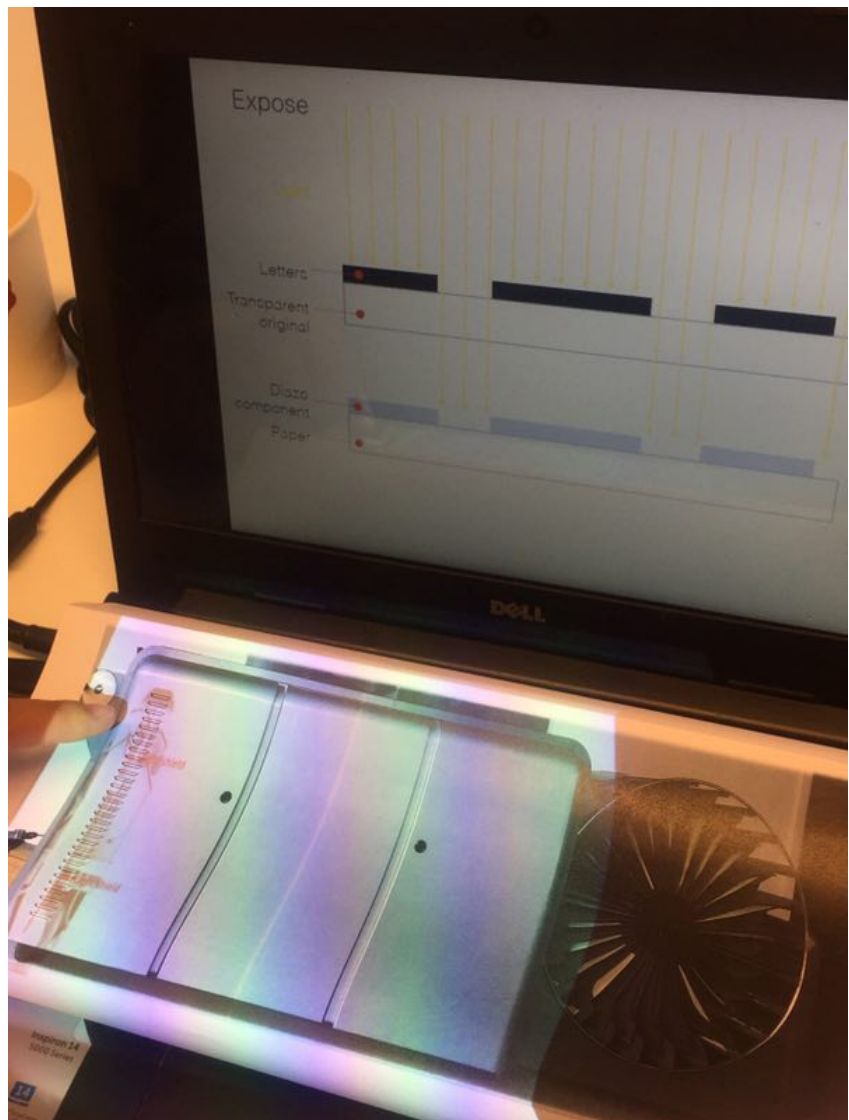
## USER TEST

A quick test was done to evaluate this idea of combining the devices and technology. The goal of this test is to know whether this illustration is clear and easy to understand, and to improve the experience of exploring the device.

Since the projecting effect in the museum was not ideal, a paper model was used to represent the Océ 155 and the test was done on the desk. The computer screen was used to play a keynot presentation of the copying process.

Four participants went through the process as explained in the previous section. Before they started, they are introduced that the device shown on the paper model is an office copier and it works based on diazo technology. The tested installation will introduce how it works.

At the end, the participants gave their comments including whether they understand the copying process and whether the experience is explorative and funny.



7.14 A participant is pressing and holding on the light shield and the computer is showing exposing phase.

---

## Result

Participants hesitated longest on the 'preparing' phase. After this phase, they knew how to play with the installation and understand the information shown on screen quickly.

### Problems

- The background information is not sufficient. People are confused why the 'black blocks' are letters. They cannot relate the two layers of paper (transparent original and with the projected inner structure).
- The interaction of pressing on the case and activating next action is not how the machine will work as usual.
- Some participants are depressed since they did not see the copied result.

---

## Limitations

The test scale is smaller than the real size which will decrease the scale of body motion. The restricted motion will decrease the cost of effort and may weaken the sense of involvement.

The aim of this test is to find problems to improve and the tested participants are less than the number of formal evaluation test. The trouble areas of the participants are similar and fourth participants starts to give repeated comments, so the test stops.

---

## Suggestions for improvement

- The introduction of 'preparing' phase should be more detailed. The two paper layers should be explained clearer. The transform from a letter to 'black block' should be presented.
- The current illustration is from a coated paper's perspective and the copying process is emphasized. The improved illustration can from an operator's perspective and emphasizes the result of copying.
- There should be a copy result which will make the experience more meaningful.

## 7.4 Experience in the typing room

Improvements are made based on the test result and the detailed experience in 1960 scene is completed.

In this section, visitors' experience in 1960 will be introduced with a paper mock-up. The mockup helps to explore the layout and space deviation.

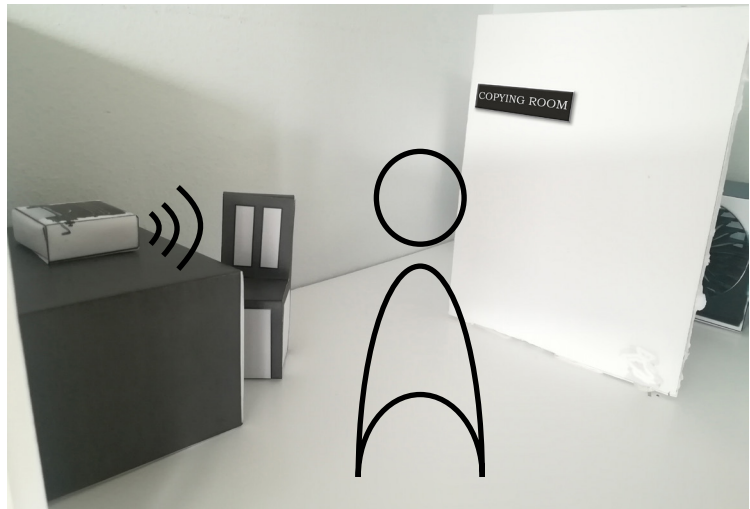
### Intro

Know the time background. Hear the typing sound from the next room.



### Attract

Come into the typing room. Notice the sound is from the typewriter.



### Attract

With the light in the typing room becoming darker, the typing sound fades out. A instruction 'please sit here' is projected on a piece of old paper.



### Type

'Today is 17 Aug, 1960. You just start your job as a typist. How do you feel now? You can type it down.'



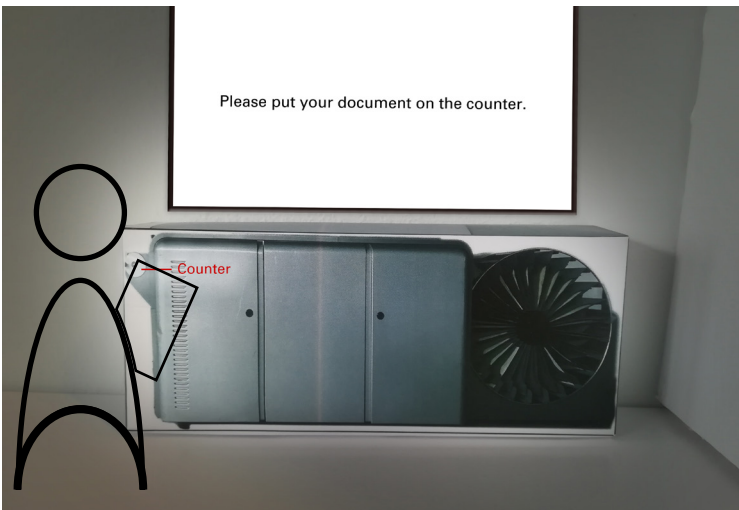
**Lead**  
See the instruction and hear the machine sound fading in.



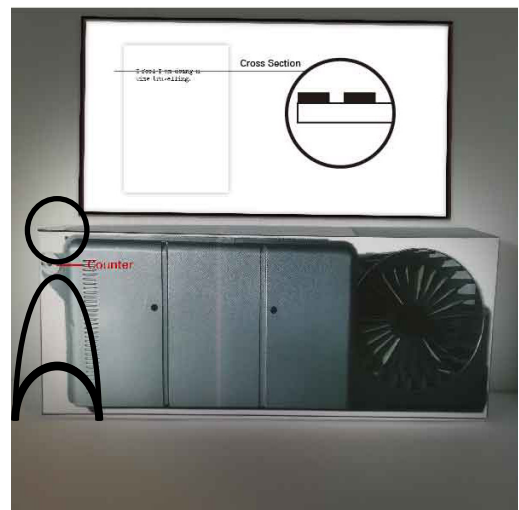
**Attract**  
Bring the document to the copying room.



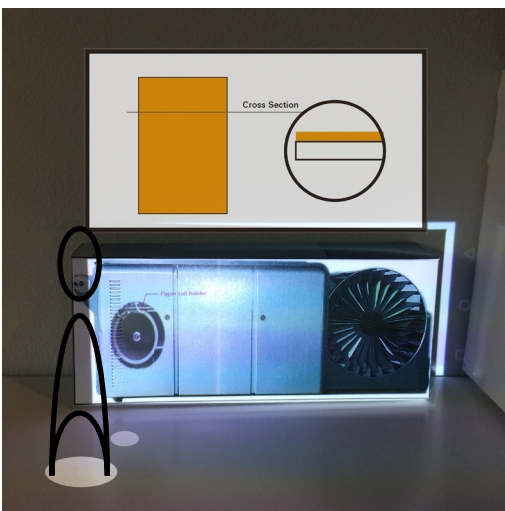
**Copy**  
'Counter' is projected and indicated on the copier. Follow the instruction and put the document on the counter.



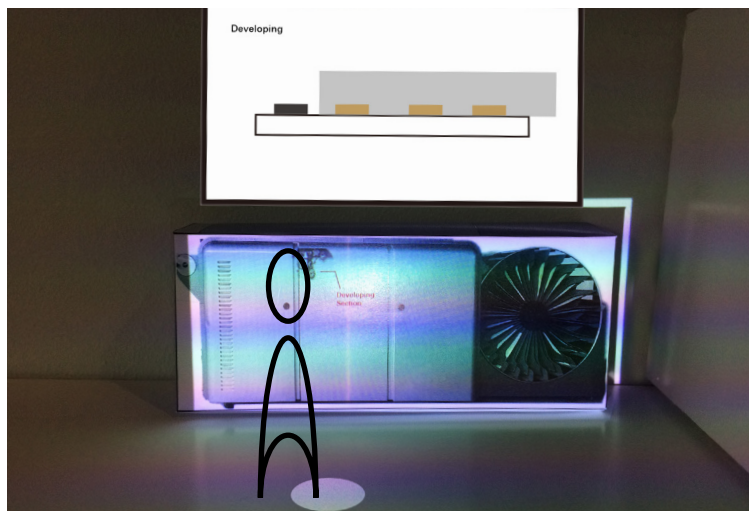
**Copy**  
The typed document is shown on the screen. The cross section of the document from a micro perspective is shown.



**Copy**  
Introduce diazo paper. People step on the spotlight. The copy starts, instruct people to move slowly to the right.



**Copy**  
Show the copying process with people pace.



Copy

Move to the end of the copier. Pick a paper from the drum on which the copied effect is projected



Move

Go to the next room 'boss office' and experience Océ 105.

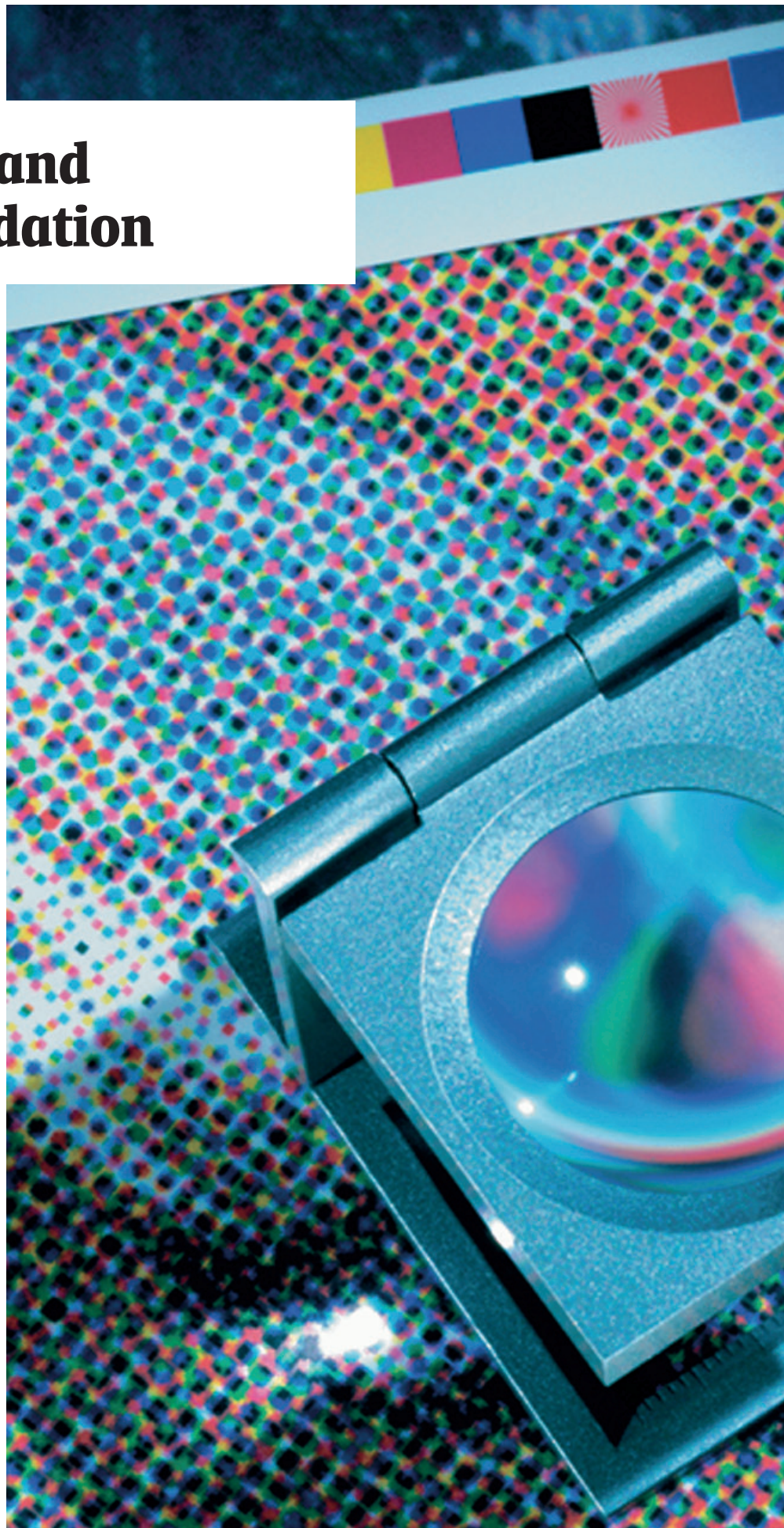


Top view

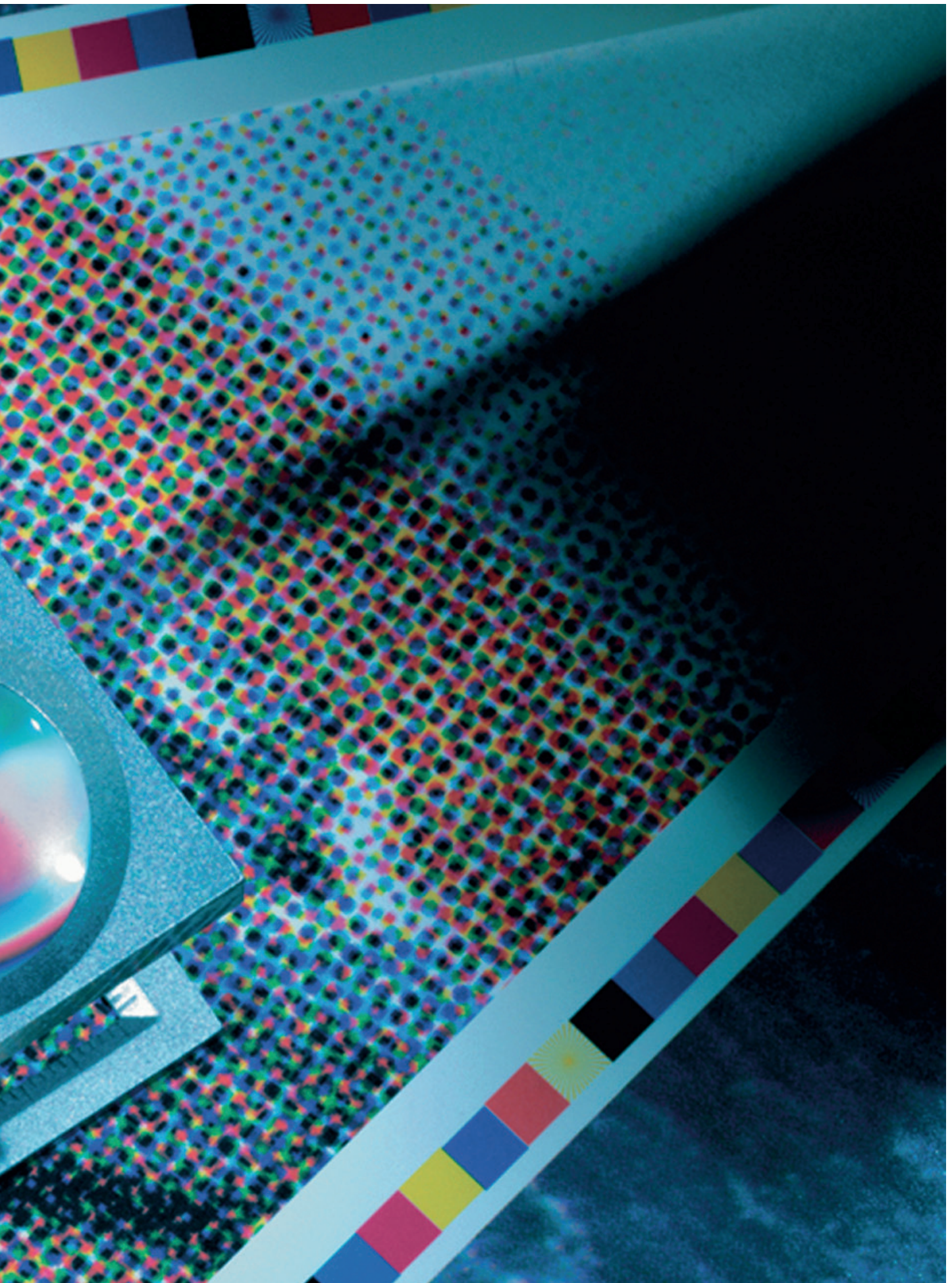


## 8 Evaluation and Recommendation

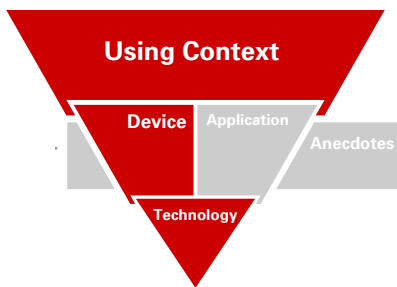
Evaluation was done to know to what extent the concept achieves the design goals and satisfies the design requirements. The refined experience in the typing room with Océ 155 as explained in the previous chapter was tested. Based on the test result, revisions and adjustments are conducted. The test provides a reference to evaluate the redesigned experience for the whole museum. The recommendations for the whole exhibition are put forward at the end.







## 8.1 Experience in the typing room



The experience 'copying in 1960 with Océ 155' was tested.

In this experience, people will feel the way of copying in 1960 and learn the technology behind Océ 155. This experience would trigger them to reflect on the improvement in printing.

The goal of this test was to know whether the experience achieved its desired effect as described.

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### PROCESS

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### RECRUITEMENT

Four Océ employees joined the test:

- A: Communication manager
- B: Product manager of i300
- C: Manager of sales training
- D: R&D designer

Because of the failed attempt in inviting customers, Océ employees who are familiar with the customers were invited. They have contact with small format customers in their work and know customers' interests well.

The participants are invited from different departments with the purpose to collect comments from different perspectives. It helps to evaluate whether the concept shows the history in a comprehensive view as is described in design requirements.

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### LOCATION SETUP

The tests were done in Océ museum to take the advantage of the existing exhibits. Two areas are used in the test: the writing desk of Mr. van der Grinten and the area around Océ 155.

The area around the writing desk represented the typing offices. Some posters were hung nearby to introduce the time background (1960) and to indicate the environment as the typing pool. The typewriter on the desk was used during the test.

The area around Océ 155 represented the copying room beside the typing pool. Curtains were used to shelter the light from the window for a better projecting effect.

For the convenience of operating, paper dots were stuck on the ground to represent the position indicated by the spotlight. The illustration indicated to step on the dots one by one.



Figure 8.1. A poster introduced 1960 (left).



Figure 8.2. The area around the writing desk represented the typing offices (right).

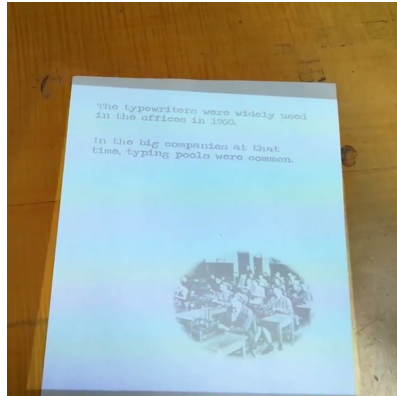


Figure 8.3. The projected instruction on the paper (left).

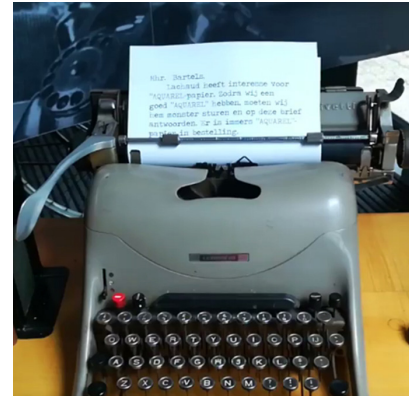


Figure 8.4. A pre-typed document where participant should type their names to finish. (right)



Figure 8.5. Océ 155. The monitor used to displayed animation of dazo process. The dots on the ground indicated the stepping point.



Figure 8.6. Projection on Océ 155.

---

## TEST SESSION

During the test, participants went through the two areas:

### Typing office

- Follow the projected instruction to sit down and type.
- Take the document out from the typewriter and move to the copying room.

### Copying room

- Put the document on the counter to start the illustration.
- Walk through the dots on the ground and see the illustration on the screen and copier.
- Take the fake copy from the receiving drum.

Participants were encouraged to share what they thought during the experience. Their actions in the two places were observed:

- Whether they follow the instructions correctly.
- When they hesitated. (A question 'what do you think' will follow)

After the experience, open questions were asked including:

- How do you feel about this experience? What do you like or don't like?
- What do you learn about Océ from this exhibition?
- How do you think about copying in 1960?
- Can you understand diazo copying?

The design proposal for the whole exhibition was discussed with the participants. Questions were asked about whether this exhibition would be attractive for customers, whether it can help them in customer communication, whether customers can know Océ is innovativeness and technology-driven.



Figure 8.7 Typing on typewriter.



Figure 8.8 Taking out the document.

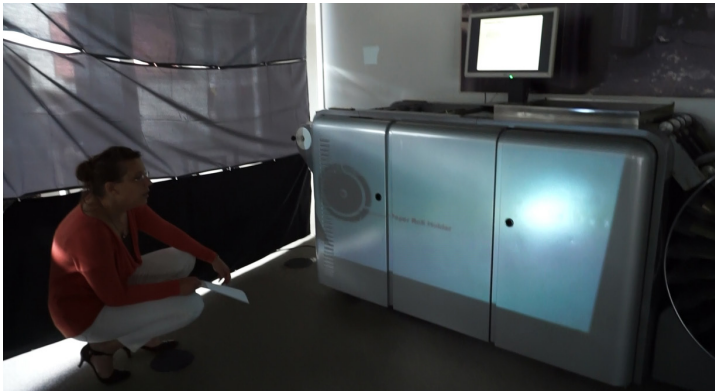


Figure 8.9 Understanding the projection.

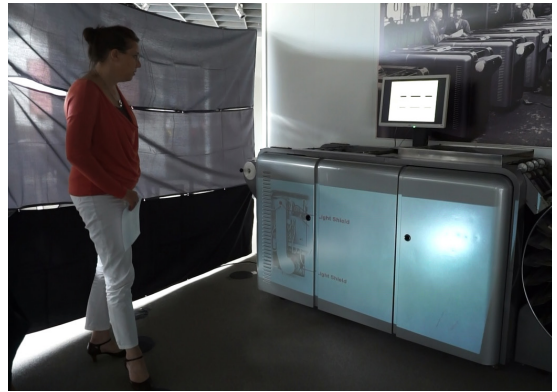


Figure 8.10 Watching the illustration.



Figure 8.11 Commenting on the illustration.



Figure 8.12 Discussing the storyline.

---

## RESULT

The results are generated based on the observation and participants' answers to the interview questions.

The result will be categorized into three groups: experience, marketing, usability.

The **experience** section will describe the participants' performances as observed and their comments about interview questions such as 'how do you feel' and 'what do you learn'.

The **marketing** section will analyze participants' comments on the tested experience and the concept proposal and answers to questions such as 'what features of Océ is shown' 'whether the exhibition would be interesting for customers'.

The **usability** section will summarize the problems reported by participants and the places where participants had difficulty with.

'It make the museum lively.'  
—— A

'When you have things to interact with and to experience with, it's nice. Because it's now only walking around...'  
—— D

'It is fun because I recognize the typewriter and use it like when I was ten. Everything is how it was in that time.'  
—— C

'The technology is different today but there is still something in that way. In offices you still need walk to somewhere and have something printed.'  
—— B

---

## EXPERIENCE

All the participants performed quite actively and were very involved during the experience.

In the typing room, after they sit down, they were fully attracted by the projected instruction and were quite excited when seeing the instruction of using the typewriter. One participant (C) started to talk about her previous experience of typing in her childhood. When the instruction finish, they immediately started to take out the document and looked for the copier room. The experience in this room was very smooth and very few problems were observed.

In the copier room, they first got attracted by the instruction on the screen and put the document on the counter. However, after this step, some problems were observed which will be introduced in the usability section. The starting of experience with Océ 155 was less fluent. After 'exposing', participants knew how to play and began to get involved.

Participants describe the experience to be **interactive and funny**. They liked to be such busy in the museum and went through many activities. It was fun to experiencing the old way of working and copying. The typing part gives a strong feeling of the old time. The whole experience triggered participants to compare with the current printing spontaneously.

---

## MARKETING TOOL

'Evolving' the mentioned by all the participants. The environment setting and the experience of copying remind participants of the changing world. The evolvement of the company was recognized by participants through comparing the tested experience with the current printing.

The company value of innovation was identified by the participants. But one participant (C) mentioned that the presentation of brand values was a bit implicit and brand marketing should be strengthened.

After introducing the whole storyline and the proposal for the exhibition, participants thought the new design presented the company history in a simple way and the information was comprehensive. They commented that it would an attractive trip for customers to know the history of the company and a good warm-up before coming into the Customer Experience Center.

'It shows what kind of steps that we as a company went through. It's obvious.'

—A

'It's really nice because now it is really focusing on technology only and the engines only. But getting the environment aspect and humans that are working on it in, that I think is really nice to have.'

—D

'Innovation is the first thing that comes to mind.'

—B

'It shows that how we evolved from that (1960) to now. But I want to add not only the fact but why you can be proud of it and why it is unique.'

—C

---

## **USABILITY**

### **Typing pool**

The experience in the typing pool was fluent and no critical error occurred which interrupted their independent exploring. The participants reacted quickly to the projected instructions and were involved in the information on it.

The non-critical errors are:

- The projected projection was not obvious at the first sight. Two participants did not notice there was projection on the paper before being indicated.
- How to operate the typewriter was not indicated. One participant did not know how to take out the document from the typewriter.
- The typewriter was too far to type while sitting.

### **Copying room**

The illustration of the diazo copying was easy to understand for all the participants. But they had more difficulties in interacting with the dots.

Critical errors:

- The dots cannot give proper hint on people's moving speed. One participant walked through the dots very quickly before recognizing the change on the screen.
- The end of each animation was not clear. Two participants stopped at a dot for a while and did not move to the next one after the animation finished.
- The illustration was hard to follow because it included animation at two locations. The projection on the copier and the presentation shown on the monitor were active. Participants were confused about which one should be focused.

Non-critical errors

- The density of the dots was confusing. There were too many stepping points at the counter comparing to the side of receiving drum. Participant found it hard to understand their meaning at the beginning.



---

## DISCUSSION

The experience successfully triggered people to compare the copying and printing at different ages and reflect on the changes over the years. The starting point of Océ at small format market was impressive and participants enjoyed this lively and interactive visiting.

The effect of history simulating and presenting was realized while the brand marketing was too implicit according to one participant, 'I can now only compare with Océ itself but I want to see how the copying was with other copier or without 155 in 1960.' On the one hand, it reflected that the introduction on the Océ 155 was not enough in the tested experience. People are not satisfied only knowing how the copier was used and how it worked technically. To better show the innovativeness, more introductions about why the product and the technology are different should be explained. On the other hand, her suggestion coincidentally fits the design for another element 'anecdote' where personal stories are presented to show the advantages of a device.

There is one difference from the tested experience and the original design which was described in the previous chapter. The light was replaced by the dots which was stuck on the ground. The disadvantage of the dots is that they cannot hint visitors to move but only show the position of step. Some errors occurred because of this.

This test puts emphasis on the evaluation of the experience. According to the test result, there are many usability errors that are found in the interaction with Océ 155. Besides, all the participants are familiar with copying and printing technology. No problem about the illustration of diazo copying was found. An additional test is needed in order to have an overall and reliable evaluation result.

---

## REVISION AND SUGGESTIONS

In this section, the revisions and recommendations to solve the usability errors will be introduced.

The typing room can be placed in a darker place away from the window. The unnecessary items on the desk can be taken away such as Océ 2 copier, stamp and so on. The paper can put at the central of the desk.



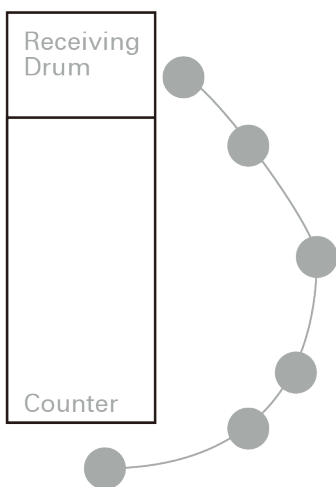
Figure 8.13 Attract by creating brightness contract.

The projected projection was not obvious at the first sight. Two participants did not notice there was projection on the paper before being indicated.

The dots represents stepping point and can be arranged to fit the position of inner structure in Océ 155. It would make the moving from place to place more meaningful.

There were too many dots at the counter comparing to the side of receiving drum which was confusing.

Current



Idea for revising

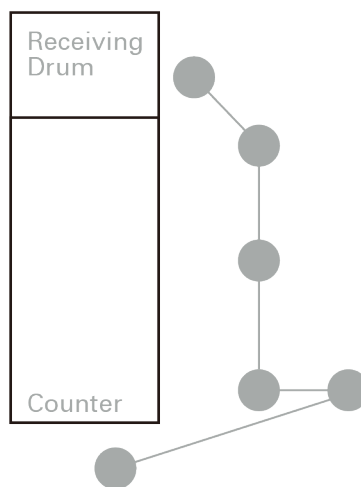


Figure 8.14 Revising the path from the counter to the drum.

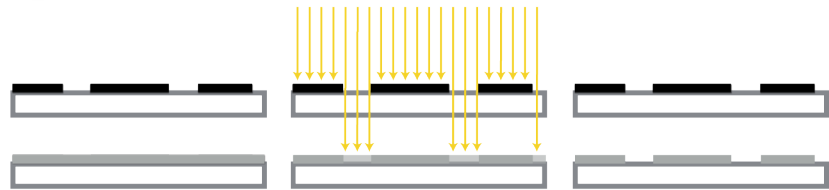
The end of each segment of diazo animation was not clear. Two participants stopped at a dot for a while and did not move to the next one after the animation finished.

The animation can describe a continuous state. If people do not move, the state will not change.

### Current



Stand on the spot, watch the whole process of exposing.



### Idea for revising



Before



Standing



Leave

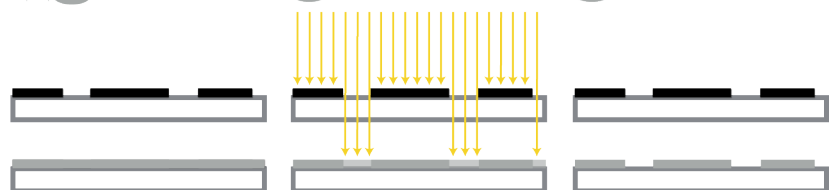


Figure 8.15 Revising the illustration of exposing.

How to use the typewriter was not indicated.

The projected instruction can briefly explain how to use the typewriter.

The typewriter is too far to type while sitting.

In the tested setting, the typewriter was fixed on the desk. In the real exhibition, the desk can be smaller and be arranged as a typist' working station. The typewriter should be put at the proper position for people to type.

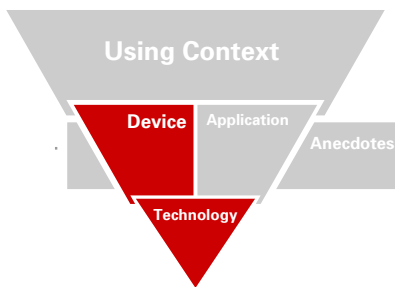
The dots cannot give proper hint on people's moving speed.

Light as described in the previous chapter can be tested whether it works better in leading people.

The illustration was hard to follow because it included animation at two locations.

The illustration will show the inner structure and its explanation at one time, instead of displaying the photo of the structure, line, and then name. In this way, only the diazo process shown on the screen is animated.

## 9.2 Illustration of diazo copying



All the participants of the first test are Océ employees who have knowledge background in copying and printing. However, the target audiences of the museum are the users and buyers of the printers who are not as familiar with the reprography technology as these participants. Because of this difference in knowledge, the real visitors may not understand the illustration of technology as easily as those participants.

As a result, an additional test was done with people who have no knowledge in printing technology. Three participants from TU Delft joined the test. The main goal of the test is to know whether the illustration is intuitive and easy to understand for them.

In this test, the spotlight was used to lead the way of participants. It shined at the position where people should stop and move to the one after the animation on the screen finished.

---

### PROCESS

---

#### RECRUITMENT

Three participants were founded in TU Delft who have no background in copying and printing technology.

---

#### TEST SESSION

Participants were tested individually in the multisense lab of TU Delft and each test session took around 25 minutes. There are six sections in the illustration: introducing the original, introducing the coated paper, exposing, developing, drying, and copy receiving. Participants went through these sections and were interviewed afterward.

Different from the first test, the participants were asked to follow the spotlight on the ground. When they step on the specific stepping point, they watched the related section and were asked to think aloud about their understanding of this section. After they finished, the light led them to step on the next point.

After the whole illustration finished, participants were asked about their feelings and comments in general and some other questions:

- Do you think it is easy to understand the illustration? 1 is very hard and 5 is very easy, how will you score? Why
- How do you understand the stepping points? What do you think the meaning of it?

The diazo copying process was explained to the participants. More questions were asked on where they misunderstood, such as 'why do you think like that' and 'what do you suggest to improve to make it clear'.

---

## RESULT

The illustration was intuitive for participants. Two ranked '4' and one ranked '3'.

The problems found during the tests were as listed. The critical problems influenced participants understanding on the whole illustration. The non-critical problems are what participants were curious but the illustration did not show or something that influence participants' experience.

### Critical

- The animation of 'sectional view' represents 'scanning'.
- The coherence between the projection and stepping point is weak.

### Non-critical

- The black block cannot be linked with the thickness of ink.
- The state of the developer is unclear (liquid or solid).
- How the developer is applied is unclear.
- How the copy is dried is not shown.
- The screen is much bigger than the poster and attracts all attention.
- The stepping point is very close to the screen making it uncomfortable to watch.



Figure 8.16 Stepping on the spotlight

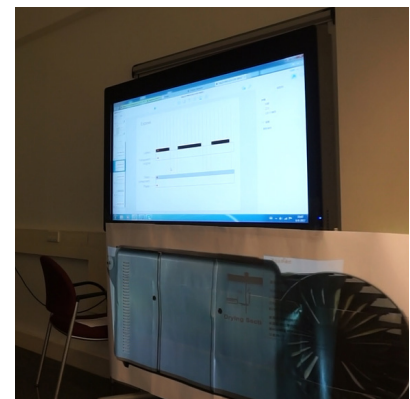


Figure 8.17 The screen showed diazo copying and the poster represented Océ 155.

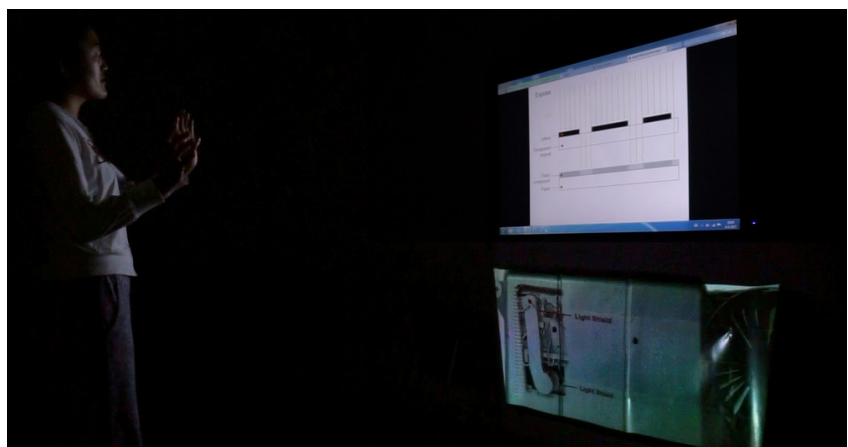


Figure 8.18 A participant was reporting her understanding about the illustration.

---

## DISCUSSION

The illustration of diazo copying is easy to understand by people who have no printing related knowledge background. However, the accuracy of their understanding and the satisfaction of curiosity are relatively low because of the animation effect, the terminology, the lack of symbols and explanations about the function of the mechanical structure.

In this test, because of the different test installations, some details which were not found in the first test were identified, such as the scale of the screen comparing to Océ 155 and the distance between the copier and stepping point. These details implicitly lead the focus of viewing and may mislead visitors during the experience.

Another result caused by the different test installation is that the participants of the second user test cannot recognize the coherence between the projection and stepping point. In the interview, two reasons were founded.

Firstly, the poster represents Océ 155 is smaller than the real size, making the distance from the counter (the starting point) to the receiving drum (the ending point) shorter. In this short distance, participants hardly paid attention to the difference of projection position and its link with the stepping point. Besides, they cannot reflect on their previous position because the light only led them to move forward.

---

### DOT VS LIGHT

Another difference between the two test is how participants were led to go through the experience. The first is by dots, the second is by the spotlight. Both of them indicate the path of visiting and where to stop. However, the stepping point shown dots can always be seen and while the spotlight cannot enable people to trace back.

According to the observation, even though many errors occurred, the interaction with dots was more in line with the quality 'explorative and in control'. In the first test, participants stepped on the dots in different speed and wondered what happened to it. They reflected and found the link between the dots and projection. In the second test, participants were totally led by the light and had less control in their experience. The relation between their stepping points and the projection was not recognized.

As a result, using light to indicate moving as should be improved. It should give a hint to remind visitors to move but not restrict their exploration.

---

## REVISION AND RECOMMENDATION

The revisions and recommendations to improve the usability errors found in this test will be introduced.

A proper animation can be made to show a 'rotating and enlarging' effect.

The stepping point should be indicated on the ground and always visible (Figure 8.19).

The illustration of diazo copying can be refined to show the technology more precisely and vivid. For example, sound effect can be added to the illustration to simulate the flow of liquid. The mechanical symbol of heating wire can be used to show how the copy is dried.

More tests should be done on these practical issues, for example the proper size of screen and the distance between the screen and stepping points.

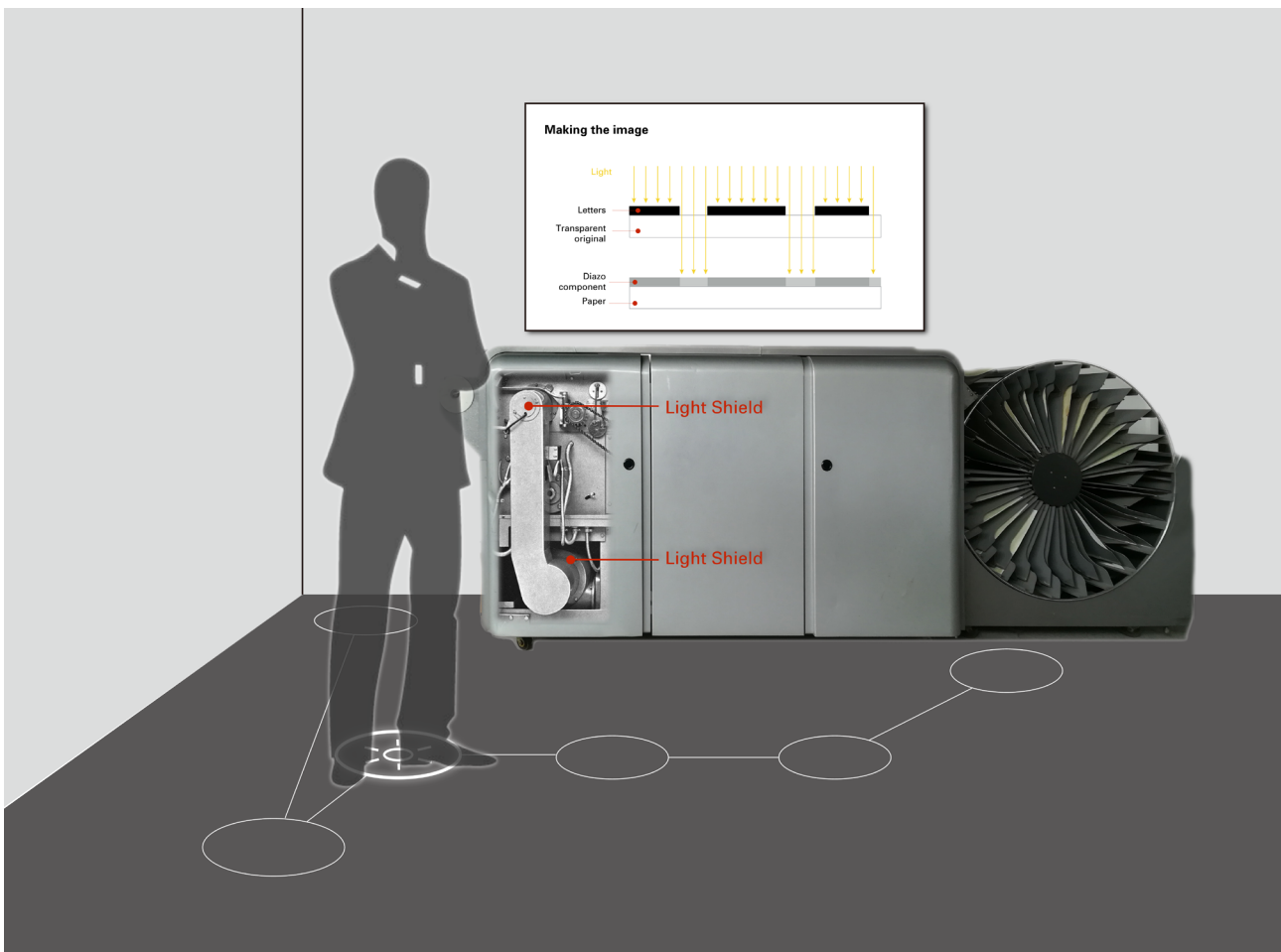









Figure 8.19 Refined stepping points.

## 9.4 Summary of concept evaluation



Based on the result of the two tests, the evaluation is done on whether the design proposal would meet the design requirements.

Some requirements are achieved while some are not because of errors or according to the comments of participants. If possible, it is suggested to test some of further after the whole exhibition completed.




### Content

-  The story of company development should be obvious for the visitors.
-   F The presentation should be standalone without volunteers' introduction.
-  F The Océ brand value should be clearly delivered to the visitors.
-  The exhibition should present the company history in a comprehensive view and balance technology and business.
-  The content should be structured into layers to enable explorative content searching.
-  The presentation must show a link to the Customer Experience Center.


### Structure


-  F There should be a clear route in the exhibition to enable visitors to lead themselves during the visit.
-  The link between the exhibits in the museum should be strong and logic.

### Experience

-  The visitors should involve in the presentation in an interactive and diverse way.
-   F The visitors should be free to control their visiting pace.

---

 Succeed

 Not succeed

T1: Tested by 'Experience in the typing room'

T2: Tested by 'Illustration of diazo copying'

F: Further tests on the whole concept are needed.



## 9.5 Recommendation for future improvement

---

### ABOUT THE TYPING ROOM

#### **Simulation of the copying process**

The complexity of diazo copying can be strengthened for a bigger contrast with the later years. The copying process tested in this project was not totally same as it used to be in 1960. For example, people should copy from a translucent original and they should wait for a while since the copy should be dried. In the tested experience, the inconvenience of translucent original and waiting for drying was not presented. In the future, the improvements can be done to further simulate the old operating and make the experience of improvement stronger.

#### **Embodiment of the projection**

The embodiment of the projection on Océ 155 should be further developed in the future. In the test, the projection will be blocked when participants moved from the stepping point of 'developing' to 'drying'. Through a proper position of the projectors and visiting path, the blocking can be overcome. For example, multiple projectors can be used to project from different perspectives at a time.

---

### ABOUT 1960

#### **The collection of applications**

The applications for 1960 scene should be collected. These applications can show content about Océ's business and management in 1960. For example, they can be the business letters or contracts in 1960.

#### **The presentation of anecdotes**

The anecdotes can be told in the first-person narrative. The person who owned the anecdotes can also be designed. For example, it can be a specific member of van der Grinten family. A concrete person and a subjective tone can make the story more convincing.

---

## ABOUT THE WHOLE EXHIBITION

Even though the concept proposes a structure of four showrooms but the route through the four rooms was not discussed. While detailing the other rooms, the route would better be a one-way path and the indication of where to go should be clear. A possible layout for the four showrooms is can be seen in figure 8.20.

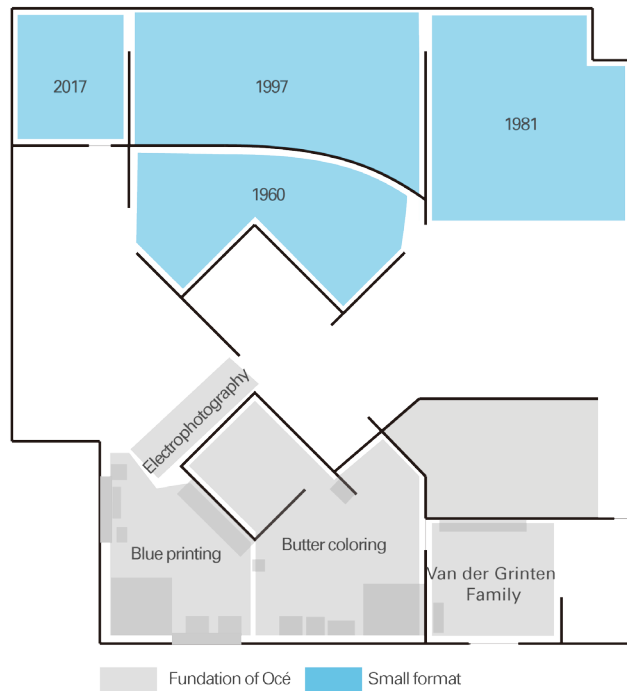


Figure 8.20 Idea for the position of four scenes.

The effect of brand marketing can be tested with the complete journey of experiencing the history. Whether visitors can be emphatic about Océ's growth with the changing market and whether it can actually strengthen their trust toward this company can be further researched.



# 9 Reflection



## Self reflection & Acknowledgements

If I am asked to use one sentence to summarize this graduation project, it would be

'I sincerely enjoyed.'

This is the first time that I work in a big company and know what it would be like to work with a multidiscipline team. I really enjoyed being at Océ and an enjoyable thing was to interview employees from different departments. During these interviews and several times of getting lost in the huge building, the most impressive culture that I experienced in Océ is enthusiastic and helpful. The interviewees are not only designers or people from R&D, but also from sale and marketing. The wide interviews allowed me to get in touch with new knowledge of other fields such as management, marketing.

If I am allowed to use more words, I would say

'It is a painful pleasure.'

In this project, I confronted many struggles. But these struggles are valuable lessons at the same time.

In the research phase, I spent unexpected long time on analyzing and conclusion drawing. On the one hand, the amount of information gathered was quite large. On the other hand, this information intertwined many aspects. The method I referred is data triangulation which facilitated me to present the research result in a good structure. This experience taught me how to deal with massive information.

Before the concept was come up with, I struggled with the end result about my design. Although the scope of this project is 'an exhibition for the small format printing', the focus is still undefined. When visiting the similar museums and reading the reports of previous projects, I considered whether I would design the whole exhibition, a specific space of this exhibition or an installation in the exhibition. In my previous projects, I had an assumption about the final result whether it would be a physical product, a service and so on. But in this project, the further I went, the more opportunities I could see.

After talking with my supervisors, I started to think what I want people to know and to

experience in the museum and generated ideas based on it. After several rounds of iteration from what to know and how to know, five elements as described in ideation chapter were settled. Around these elements, I finally thought I could show a comprehensive history and designing a new experience to improve the current trip. In the design proposal, I put forward a structure of visitor journey at first and then start to detail a part of the experience.

Besides the iteration from what to show and how to show, the tests in the evaluation phase were similarly addictive. By talking with the participants, I really got inspired from different perspectives and have some imagination about the real exhibition. I did not manage to revise and embody them all. But I hope the recommendations would inspire other designers who work on this project later.

In this project, I always felt the deeper I knew, the more possibilities I could find. It is really a hard-to-end story for me and a very valuable project in my studying.

Hereby I want to thank my coaches, Ianus Keller and Asli Boru. Without their support and inspirations I cannot survive from those struggles and may get lost in my own bubbles. I want to thank my company supervisors, Jo Geraedts and Jolijn Brouwers, for giving me this cool project and be my backing when I explore the company.

I want to thank my Océ colleagues for joining my research and evaluation and giving me those valuable inputs. They really went out of their way to help me even when I feel sorry for bothering them so frequently.

I want to thank my friend, Congxi, who is also my colleague and my roommate, for keeping company in those struggling but happy hours.

I want to thank my museum lab friends and coach Arnold Vermeeren for sharing their own experiences of design and inspiring me in my project.

Last but not least, I want to thank my friends for their supportive words and actions. Special thanks to Lin who is here with me when I am writing this sentence early in the morning.

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# Appendix

## Appendix A Materials for Océ company culture research

### SENSITIZING BOOKLET


### Introduction

Welcome and thank you for joining our research.


We are industrial design students from TU Delft and doing graduation projects for the Océ museum. We are curious about your working experience as a Océ employee and your opinions on Océ history.

To get you prepared for the interview, we have this booklet for you. The booklet contains four small topics. You can think about one topic for each day and write down your ideas, which will take no more than ten minutes. These topics are about **your own experience and opinions**. There are no right or wrong answers. Have fun finishing these tasks.

If you have any questions, please feel free to contact us.



Meng Xu  
0647560543



Congxi Su  
0651671402

**Please remember to bring this booklet to the session.**  
Enjoy and success!

### About Me

My name is .....

My department is .....

My job is .....

I have worked at Océ for ..... years.

I chose to work at Océ because  
.....  
.....

*Draw your portrait here*

### Day 1

### Historic events & products of Océ

Step 1. In your opinion, what are the important events and remarkable products in the history of Océ?  
Mark them on the timeline below and write down their names. If possible, you can mention the specific time.

*Add more events here*

*Circle what you think is historic*

lisensee      annatto      service  
patent      market      newspaper

Turn to the next page to see step 2.

## Day 1

### Historic events & products of Océ

Step 2. Pick **three** events or products that you mentioned above.

And write down why you think them important or remarkable. You can simply use some key words to describe.

I choose .....



Because .....

.....

I choose .....

Because .....

.....

I choose .....



Because .....

.....

## Day 2

### The remarkable events in my Océ career

In your opinion, what are your remarkable contributions or impressive events in your working experience for Océ? Why do you think so? You can write down some keywords about them.

If you have any relevant pictures, please send us via what's up. :)

EVENT 1



EVENT 2



EVENT 3





### Day 3

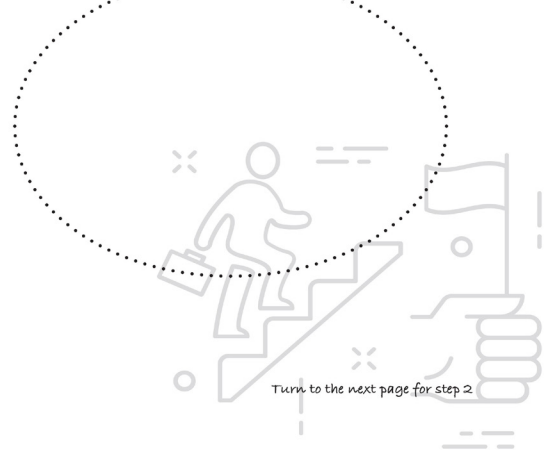
## The traditions and changes of Océ

Step 1. Comparing the history of Océ and your own working experience, what are the things that Océ are still keeping and what are the things that have been changed?

Things that are kept



Things that are changed



Turn to the next page for step 2

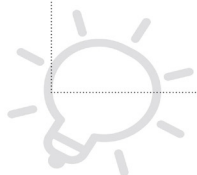
### Day 3

## The traditions and changes of Océ

Step 2. Why those things are kept or changed by Océ? Please pick **three** items from each group and describe their specific reasons and influences.

Things that are kept

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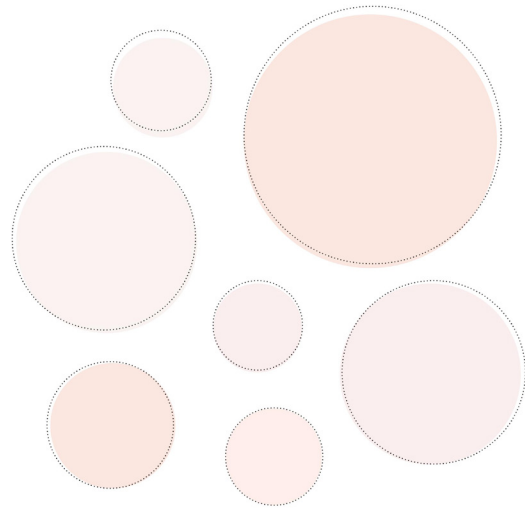
Things that are changed



## Day 4

### The strengths of Océ

Comparing to its competitors, what do you think the strong points of Océ? In your opinion, what are the factors of Océ that its customers will value?  
Please write down some keywords in circles.



## End

### REMARKS/QUESTIONS

You can use this page in whatever way you like!



**INTERVIEW MATERIAL**

**Employee Interview Set-up**

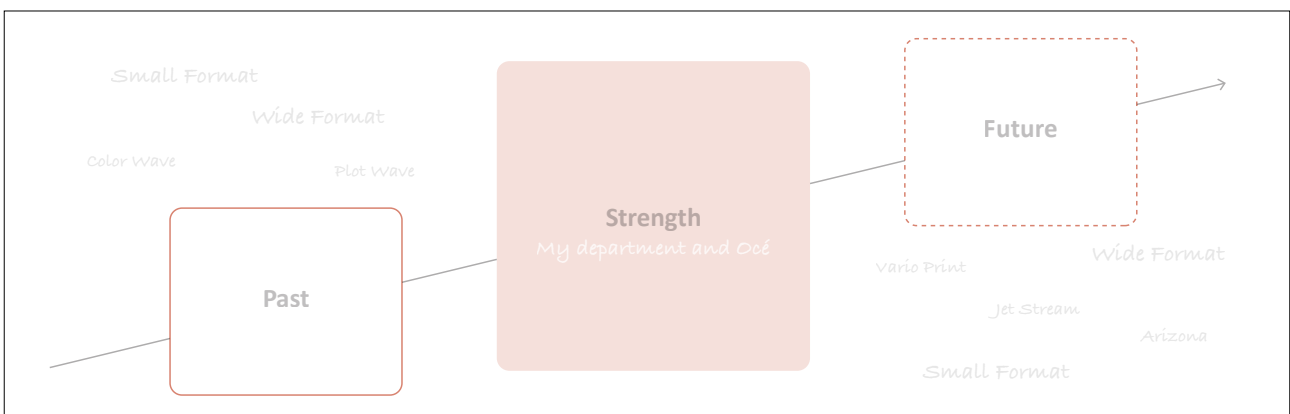
Phase	Time	Detail	
introduce warm-up	2'	Self-intro (Meng and Congxi, We are students...Doing intern...will redesign the Oce museum and will put a bit focus on large and small format printers,like...)	
	1'	Record consent	recording
general questions	4'	What is your job? What are you busy with recently? Did you encounter with some challenges within this project?	
Timeline	4'	(Value)In your opinion, what do you think are the Oce's strength and value ?	tool kit or not?
	5'	( your working experience ) Do you think these values influence your way of working? Can you give some examples?	stories relating to small/ large format
	5'	( your department history ) Could you give some stories from your department which can show these values?	
	4'	Will you take these values as guideline for your department in the future? Or do you think there should be more values?	
	4'	What is your next step of your department? What is the vision of your department in the far future?	
thanks	1'	memeda	

Can we contact you later if we have other questions ?

**Material**

- A3 interview sheet
- Post-it
- Pen

**Interview assginment sheet**



# Appendix B

## Materials for volunteer research

### SENSITIZING BOOKLET

**Day 1**

### Historic events & products of Océ

**Step 1.**  
In your opinion, what are the important events and remarkable products in the history of Océ?  
Mark them on the timeline below and write down their names. If possible, you can mention the specific time.

*Add more events here* →

*Circle what you think is historic* →

*lisensee*      *annatto*      *Service*  
*patent*      *market*      *newspaper*

Turn to the next page to see step 2.

**Day 1**

**Step 2.**  
Pick **two** events and **two** products that you mentioned or circled on the previous page. And write down **why** you think them important or remarkable.

I choose ..... (event)  
Because .....

I choose ..... (event)  
Because .....

I choose ..... (product)  
Because .....

I choose ..... (product)  
Because .....

## Day 2

### The key exhibits in the museum

#### Step 1.

What do you think are the key exhibits or representative objects in the museum? Please pick the **top three** and mark them on the map attached on the right.

#### Step 2.

Please write down why you choose them.

.....

.....

.....

.....

.....



Attachment  
Museum plan view

## Day 3

### My career in the museum

#### Step 1.

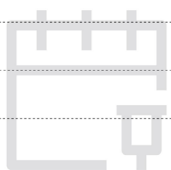
In your experience as a museum volunteer, what are hero moments that you are proud of yourself? Write them down and tell your reasons. For example, when you make an old printer work.

I felt proud of myself when .....

.....

Because .....

.....



I felt proud of myself when .....

.....

Because .....

.....

I felt proud of myself when .....

.....

Because .....

.....

Turn to the next page for step 2

## Day 3

Step 2.

What are the moments that you feel unsatisfied or even pity with?

Write them down and tell your reasons.

I felt unsatisfied/ pity of myself when .....

.....

Because .....

.....

I felt unsatisfied/ pity of myself when .....

.....

Because .....

.....

I felt unsatisfied/ pity of myself when .....

.....

Because .....

.....



## Day 4

### My preference to the museum

Step 1. In the Océ museum, which parts are **your favorite** or interesting for you? Which parts you **like less** or you think can be improved?

Please turn to the page 'Day 2'. Use green dots to mark your favorites, and red dots to mark the parts that you think can be better.

Use these to mark your likes



Turn to the 'Day 2' page and mark

Use these to mark your less likes

Step 2. Please write down your reasons.

😊 .....

☹ .....

.....

.....

😊 .....

☹ .....

.....

.....

😊 .....

☹ .....

.....

.....

## Day 5

### My next steps

What would be your next steps in the museum? What do you want to do for the museum in the next week, next month and in the future? Please draw or write them down.

WEEKLY MY LIST  
MONTHLY  
YEARLY EXPECTATION  
RESOLUTION WISH

### TO DO LIST

#### Next week

.....

.....

#### Next month

.....

.....

#### Far future

.....

.....

## End

### Remarks / Questions

You can use this page in whatever way you like!

*Thank you very much for sharing your opinions!*

Please bring this booklet with you to the session next Tuesday.

---

## SESSION MATERIAL

- TALK SLOWLY.

### Introduction 5 (5min)

- Thank you for being here, for filling in the booklet, sharing your stories and coming to the session.
- Who are we (Meng, Su)
- English session.
- Goal: Gain insights in Oce history and your experience as a volunteer.
- We will analyze the materials you made and record the session. We will use the insights when we redesign the museum.
- We are curious about your stories and opinions. There is no right or wrong answers, only your answers. So feel free to talk.
- briefly introduce time schedule
  - We have three assignments
  - 1st one: your previous experience you wrote on the booklet
  - 2nd one: about the interesting exhibits in the museum
  - will introduce them detailed afterward
  - 20 to 30 min for one assignment
  - a 10 min small break after the first assignment

### Assignment 1 Strengths and limitations (20mins)

Goal: identify the strength and limitations of current museum

1. Exchange booklet and read 'the proud'. 3min

'Take out your booklet, give it to the person sitting on your right side. Do it again. Turn to the Day 3.

You all have other people's booklet. You can read the stories on these two pages for **five mins**. Think about what are the **advantages or strong points** of the person'

2. Share their findings about strong points. *Pick one as the first.* 5 min per person trigger more group discussion (Strength of museum)

'This booklet is from whom ? '

'Can you share **one strong point** that you find from the stories?'

WHY do you think so?

3. turn to the next page. Now you can read his/her dissatisfactions? 3 min (Ideal museum)

4. share their ideas about how to deal with the unsatisfied. 5min per person

Why he or she felt unsatisfied? ?

Without thinking about the money, technical limitation, how can you improve the museum to help with his dissatisfaction?

other people's opinions about it?



## Break(10min)

### Assignment 2 Favorite spots for visitors (20min)

Goal: interest of the visitors, the hidden stories behind the exhibits,

0. Big museum plan view on the table, stickers

1. Intro:

'In this exercise, please think the favorite spots of visitors in the museum. You can think about 3 mins. It could be from your experience or you just think they will like it.

We will provide you with two different colors stickers. The dark pink is for customers, and the blue one is for employees.

Chose two spots you think the customers like most and one spot that the employees like most. They can be the same.

Pin the stickers to the product or exhibit on this big plan view.'

2. Explain

'Now, could you explain your choices?'

'Why do you think customers like these two most?'

'Why do you think employee like this spot?'

One for 5 mins.

3. Discuss

'Let's see. This area/ spot gets the most stickers. If we wanna pick Top3 exhibits of the museum. Do you think these can be the winner?' 10min

## End the session

Thank you

## Check list

recording device

- camera
- tripod
- phone
- adapter+powerbank

information

- museum plan
- sticker(pink+green)

# Plan of Océ Museum

