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One Person's Trash is Another Person's Treasure: Reimagining Furniture Use at the University of British Columbia

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Table of Contents

Executive Summary

The concept of circular economy (CE) is becoming increasingly topical as governments, institutions, and corporations strive to meet environmental goals in an economically appealing way. CE strives to reform the dominant economic practice of producing, using, and disposing of human-made objects by finding ways to reuse and recycle products before they reach landfill. The University of British Columbia (UBC) has a sizable imprint, with 55,000 students and 16,000 staff at its Vancouver campus, and as such, requires a high volume of office furniture. Unofficial furniture exchange and reuse projects at UBC already exist, but the characteristics of what makes some furniture exchanges successful, and others not, has not been studied. Moreover, the barriers that these informal exchanges face, and the opportunities for increased success from overcoming these challenges, have also lacked study. This research seeks to identify these key characteristics and challenges, as well as how these furniture exchanges are valued by different participants.

We conducted a thorough literature review, a survey, and semi-structured interviews with key participants, including UBC staff involved in furniture exchanges. The latter methods were intended to understand participants' perspectives on the obstacles limiting participation in furniture transfers, and to identify potential interventions to increase the efficacy and frequency of furniture transfers at UBC.

We found that a lack of standardization of furniture purchasing and the informal nature of the transfer program were key barriers to widespread participation. Participants repeatedly identified low-quality furniture as a barrier to continued reuse, and stated that some standardization of high-quality furniture procurement at UBC would provide opportunities for

reuse. Moreover, the formalization of the furniture exchange process was put forth as a potential intervention to improve the participant experience in furniture transfers, making it more similar to the "easy" experience of purchasing new furniture. In order to facilitate standardization and formalization, various resources, such as staff time, money, and leadership support, were identified as required inputs. It was also made apparent that participants value furniture transfers beyond purely economic value. Sustainability and relational values were identified, and an opportunity exists for UBC to recognize these alternative values when considering supporting this program. Economic valuation was still the strongest motivator, but the relational values identified present a potential leverage point to increase interest in furniture exchanges.

From this research, it is recommended that a permanent position be created to facilitate and coordinate furniture transfers at UBC. Doing so will require consistent resource provision from UBC, as well as support from leadership. These resources will be instrumental in standardizing furniture transfers, as well as formalizing the system. Doing so is likely to increase the efficacy and frequency of furniture transfers, reducing the amount of furniture waste produced by the university and providing an opportunity for a formalized circular economy at UBC.

1. Background

Over the past few years, it has become increasingly apparent that operating an economic model based on the linear principle of "make, take, and dispose" is contradictory to achieving global sustainable development goals (Koszewska and Bielecki, 2020). This approach has resulted in the overexploitation of natural resources, and the creation of significant waste (Silvius et al., 2021). A recent study posits that human-made materials on Earth have now surpassed all

living biomass, although humans only represent 0.01% of the global biomass (Elhacham et al., 2020). This represents a sharp increase in anthropic production, since in the early 1900s anthropogenic mass only corresponded to 3% of global biomass (ibid). Yet, today, only 8.6% of resources that enter the global economy are cycled back into it (Circle Economy, 2020). For this reason, a growing number of researchers have begun to focus on the notion of 'circularity' and its application to different sectors (Jun & Xiang, 2011; Ghisellini, 2016; Esposito et al., 2018; Ghosh, 2020). The Ellen MacArthur Foundation (2019) has put forth a general definition of circularity, describing a circular economy (CE) as one that is "restorative by design, [and which aims] to keep products, components and materials at their highest utility and value, at all times".

The global furniture market is an invaluable sector to investigate when it comes to implementing a circularity model (Savelli et al., 2019). Historically, the furniture industry has followed the aforementioned disposal pattern common across linear economies (EMF, n.d.), creating significant environmental concerns. The U.S. Environmental Protection Agency estimates that 8.78 million metric tons of furniture was added to landfills in 2018 alone (EPA, *n.d.*)[1]. Canada has a high volume of office space, which correlates to large volumes of office furniture. In the last five years (2016-2021), around 8.1 million m^2 of new office space was constructed across the country (Statista, 2021)[2]. The furniture present in newly constructed office space may just be a fraction of the total furniture discarded as there are also offices

[1] Information on the environmental impact of discarded furniture in Canada is not available.
[2] It is worth noting that Covid-19 might have affected the use of office spaces as a result of increased teleworking. Further readings: Parker, L. D. (2020). The COVID-19 office in transition: cost, efficiency, and the social responsibility business case. Accounting, Auditing & Accountability Journal.

undergoing renovations and upgrades to their existing furniture, which lead to further furniture disposal .

The carbon footprint and environmental impacts associated with office furniture is significant, due to the large number of office spaces. A common item, such as an office chair averages 72kg CO_2-e, and a 1.6m x 1.8m workstation creates about 45 kg of CO_2-e emissions. This is equivalent to burning 8 and 5 gallons of gasoline respectively (FIRA International, 2011). The carbon footprint takes into consideration the materials of the products such as metal, plastic and timber, as well as emissions generated from packaging, transport and utilities (*ibid*). Another adverse impact of furniture production is the high rate of deforestation involved in order to meet the demand for its largest material category, wood (EPA, n.d.). Deforestation is problematic for a multitude of reasons including, but not limited to, loss of biodiversity and a decrease in carbon sequestration potential (Calabrese, 2013). Furthermore, deforestation has impacts on various scales, ranging from global – CO2e emissions – to local – hydrological cycles (D'Almeida et al., 2007). It follows that the high volume of office furniture that is produced, consumed and disposed of is likely to have a sustained and significant environmental impact.

The identification of new consumption models is vital to achieving circularity within the furniture sector and reducing waste. IKEA, a global furniture company, introduced a 'buy-back' and 're-sale' program to help eliminate waste and move towards becoming a circular company by 2030 (IKEA, 2019). Beyond IKEA, however, the furniture sector's efforts towards circularity – especially in terms of reusing and recycling – remain minimal (Silvius et al., 2021). In light of this inaction from producers, a secondary approach involves encouraging consumers to play an active role in creating a CE. This involves consumers taking action by engaging in "re-commerce", in which they buy-and-sell products with each other in a consumer-to-consumer

(C2C) exchange (Arman & Mark-Herbert, 2021). These behaviors, with both personal and environmental benefits, could be incited in furniture consumers using various "nudges" (Grilli & Curtis, 2021) – from effort-based interventions such as (1) simplifying the exchange process to (2) providing information on ecological impacts of furniture waste to (3) evoking social norms of being less wasteful and more eco-conscious – which may then motivate more people to become involved in the transition towards a more sustainable, circular furniture economy. Moving forward, understanding consumer attitudes and purchasing behaviors in regard to furniture is invaluable for addressing the challenges and barriers to creating a successful furniture transfer at companies and large institutions – a challenge undertaken in this report.

Increasing the longevity of a product is seen as a solution to reduce its impact on the environment (Chapman, 2015, 2016; Van Nes, 2016). Moreover, various scholars have recently recognized the importance of longevity not only in terms of product durability, but also with regards to the relationship between the user and product (Ackermann et al., 2018). While increasing a product's longevity might sound quite simple, it nonetheless requires a significant shift in people's behavior. The current relationship between consumers, producers and products – in the linear economic model – is characterized by what Walker (2011) defines as a "voracious appetite for novelty". In such a relationship, furniture is no longer a mere object of human desires, but is rather a subject in itself, what Dwiartama and Rosin (2014) would call an "actant". This means that the main features, such as aesthetic appeal, design and "identity" of the object, play a critical role in fostering emotional connections to consumers, consequently impacting the longevity of the relationship (Korsavong, 2014). It follows that, in such context, a joint effort is required in two different yet interlinked dimensions: on the one hand, furniture designers and producers are called to deliver products that respond to the criteria of durability; on the other

hand, consumers should cultivate practices of care, and thus develop an emotional bond or attachment to furniture. Practices of care should, ideally, in turn translate to actions like repairing or maintaining products, with the result of extending their lifetime (Choi et al., 2018).

As the UBC campus expands with new building developments, the need to fill in these spaces with furniture will only increase. The UBC Vancouver campus has a population of 72,000 (UBC, 2020), and is therefore a suitable case study (as a "Living Lab") to identify the potential for consumer recirculation of furniture. UBC Building Operations has estimated that, in 2018 alone, around 400 metric tons of furniture ended up in landfills (Kirk, 2019). To combat this issue, there have been attempts to facilitate institution-wide practices of interdepartmental furniture transfers, although the university has not implemented an institution-wide policy to date. During these attempts, it became evident that interdepartmental furniture reuse does not provide significant upfront financial returns, which has made it challenging for stakeholders to communicate the benefits of adopting an institution-wide furniture strategy to the university. Yet, merely focusing on the potential monetary value of reuse initiatives might prove limiting and could fail to account for a broader understanding of the context under consideration.

Studies on socio-ecological systems show that, when it comes to valuation of environmental services, individuals and communities recognize the existence of multiple value domains (Arias-Arévalo et al., 2017). Few people make purchasing choices based only on how things possess inherent worth or satisfy their preferences (intrinsic and instrumental values, respectively). Instead, people consider the appropriateness of how they relate with nature and with others, these values – linking people and ecosystems via tangible and intangible relationships to nature – are what have been coined "relational values" (Chan et al., 2016). Applied to the UBC context, this might look like a community or group of individuals that share

values of care and respect for their lived environment who decide to embrace a furniture reuse program to reduce their collective impact according to such concerns. Notably, relational values make people aware of the influence of their personal actions and choices on the larger social-ecological system, a connection that may be leveraged in designing this circular furniture project at UBC. Accounting for these elements will therefore be vital to deeply understand and enhance interdepartmental furniture transfers.

2. Research Questions

Our project asks the following research questions:

1. What is the journey of a piece of furniture in a successful transfer?
    - What are the best practices that support the successful transfer of furniture across or within departments in UBC?
    - What characteristics of furniture support its successful transfer and subsequent reuse?
2. How are furniture transfers valued at UBC by the different stakeholders involved?
    - What are the intangible benefits of a successful furniture transfer to participants and the university at large?
3. How can the frequency of successful furniture transfers be increased at UBC?

3. Methods

As mentioned above, we focus on exploring the network facilitating circularity in furniture use at UBC through transfers. We sought to understand the various structural and relational factors that facilitate or hinder furniture transfers, while also tracing the steps of a piece of furniture involved

in a successful transfer. We utilized a mixture of qualitative and quantitative methods for data collection and analysis.

Qualitatively, we conducted semi-structured interviews with individuals who have participated in the furniture transfer process (successful or otherwise). These interviews were a tool to explore, in detail, the experiences of stakeholders involved in furniture transfer. Eligible participants were identified with the support of our SEEDS partners, who put us in contact with a facilities planner at UBC who facilitates furniture transfer at UBC and has a wealth of knowledge on the process. We also used a snowball sampling method, harnessing the contacts of our participants to identify additional stakeholders who may have played a role in a furniture transfer or received transferred furniture.

Our interviews investigated the motivation for participating, details of the process and experiences of participants, cost of participation (for example the amount of time it took from the start of the process to the end), social influences or other incentives within their department or the university that may have influenced their participation, obstacles or challenges experienced in the furniture transfer process, and ways the process could be improved to broaden its reach and impact. Additionally, our interview questions probed into their perspective on the value of the furniture transfer process. We also explored the effect of factors like the quality and condition of furniture transferred and the opportunity to be involved in ensuring useful furniture didn't end up in a landfill on their notions of success with regards to their furniture transfer experience.

All participants were interviewed using Zoom and were informed that their participation was strictly confidential. Interviews were recorded and transcribed by members of the study team, with identifying information about the respondents removed.

Quantitatively, we developed a survey using Qualtrics® [SS1] to gain insight into the purchasing behavior of faculty and staff who buy furniture. This survey was distributed to faculty and administrative staff of sustainability-related research groups at UBC. This survey explored participants' knowledge of the university's management of furniture waste and their ideas on how their department and the university at large could promote or support a more circular use of office furniture.

We conducted a thematic analysis of our interview data. All team members conducted an initial review of transcripts for familiarization and identification of key themes, these themes were then collated in a code book. The final stages involved having a team meeting to discuss and synthesize themes for interpretation. For our survey data, we used descriptive statistical analysis.

4.0 Results

4.1 Survey

The data collected from our furniture survey was useful in gaining insight on furniture purchasing behaviors and the factors that are influencing purchasing decisions. As well, the survey informed us about the respondent's perspective of how the University handles surplus furniture and how they envision a furniture reuse program at UBC. In total, we received 20 responses from UBC staff and faculty across nine departments and half of the respondents were from the Institute of Resources, Environment and Sustainability (IRES).

To begin, we wanted to identify where and how staff members currently procure furniture. In general, people either bought new furniture, used furniture, or looked for free furniture. About 43% of the respondents would try to find free furniture, and 26% would buy new furniture. A small fraction (14%) would buy used furniture and the remainder of the

responses chose the ‘other’ option and specified that they are not the ones purchasing the furniture or they would bring in items from home. Next, we explored the stores or suppliers that respondents went to for their new or used office furniture. The option that had the highest count was UBC’s “Reuse-it!” program (25%), followed by IKEA (20%), and commercial-grade furniture suppliers such as Brooks Corning (16%).

Figure 1. Graph showing which store or supplier respondent’s prefer to go to.

Other options include Staples, the Buy Nothing project, Facebook Marketplace, and the thrift store as seen in Figure 1. An option for ‘other’ was listed on the survey, and 8 respondents selected this, however none of the respondents provided more information on what alternate suppliers or stores were used.

The next section of our survey looked at various factors that affect purchasing decisions, specifically the durability, affordability, recyclability, design aesthetics, and comfort/ergonomics of furniture. Affordability (68%) and comfort (63%) were the top two factors that were likely to influence purchasing behaviors. If the somewhat likely level was combined with likely, then the percentages would go up to 84% and 95% respectively. In terms of recyclability, less than half of

the respondents were likely or somewhat likely to consider this when getting new furniture. About 32% responded as being neutral and 21% were unlikely to consider recyclability. It is also important to note that recyclability has the highest number in the "unlikely" category, followed by durability as seen in Figure 2.

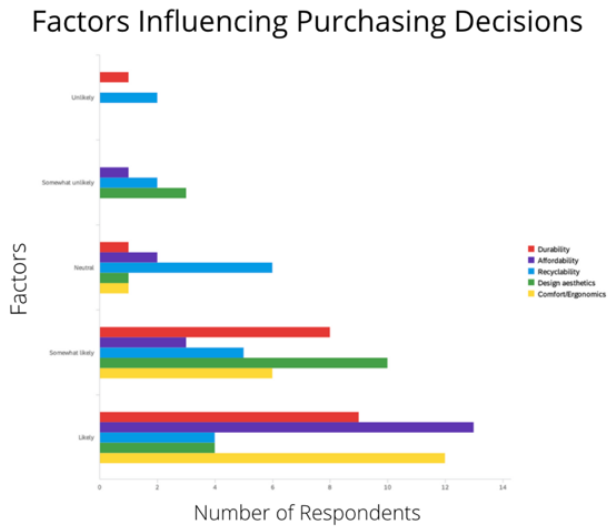

Figure 2. Graph showing the likelihood of various factors influencing purchasing decisions.

Furthermore, we provided the opportunity for respondents to include any additional factors that they consider when procuring office furniture. One respondent provided more information regarding the ergonomics factor because the average desk is built for a 5'10" person, the average height of a male individual in North America. Therefore, anyone shorter or taller is somewhat constrained in terms of their ability to obtain ergonomic furniture. Other factors that were listed were transportation or delivery concerns, stock availability, company reputation, and functionality.

Our survey also explored individual's perception of how the university currently handles surplus furniture and their opinion on how excess furniture should be handled. About 41% of the

respondents currently think that the university is mainly disposing of surplus furniture in landfills, and 39% think reuse is also occurring. Only 20% of the responses think extra furniture is being recycled. When asked how the university should handle surplus furniture, the majority of the responses shifted to 44% for recycle, 46% for reuse, and the remaining 10% checked off the dispose in landfill option. Next, we explored the familiarity of UBC's existing Reuse-it program and only a quarter of the respondents were not familiar with the program. The remaining 75% of the respondents either knew of the program or have participated in the program. Additionally, all of the respondents would donate or sell their surplus furniture to a reuse program, but only 70% of them would buy their furniture from a reuse program. The respondents who would not purchase furniture from a reuse program provided an explanation, with all of them stating that a reuse program should be free.

Lastly, we gathered input and recommendations to understand the barriers and drivers of a furniture reuse program at UBC. Some obstacles that were brought up include storage of unwanted items, suitability and customization of new furniture, convenience, pick-up and delivery services, and the lack of awareness of reuse programs. Then as a follow up question, we asked for recommendations to improve furniture reuse at UBC. One suggestion that was included involved having a central warehouse for departments and students to donate their used furniture. This storage facility could also be a location for people to shop and browse for furniture. In addition to this, having a website to help promote the reuse program as well as providing more information about the type and specific details (i.e., color) of furniture was of interest to participants. Another recommendation from the survey was to have delivery and pick-up services to help transport the furniture. This would improve the accessibility and convenience factors when individuals are looking to get furniture. Finally, raising awareness of the program was

another common suggestion. UBC could host a social event promoting furniture to be rehomed and reused. As well, having reminders in news items such as the UBC today newsletter and sending out regular or monthly updates of what is available for people was suggested to be beneficial to the success of this furniture reuse program.

4.2 Interviews

We conducted three in-depth interviews with UBC stakeholders involved in furniture transfers. These stakeholders had been involved in various aspects of the process, from facilitating furniture transfer to participating in the process.

Our conversation with a stakeholder involved in the facilitation of furniture transfer showed that the process involved three key steps as seen in **Figure 3.**

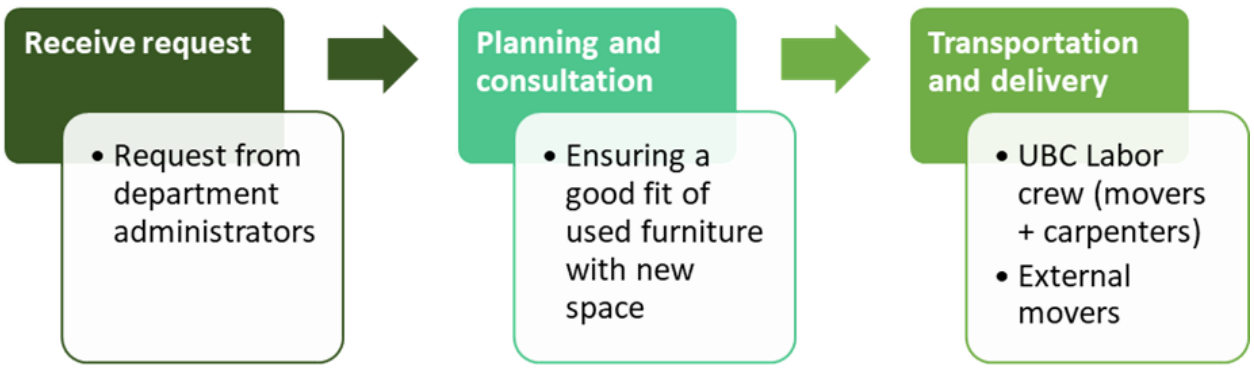

Figure 3. Steps involved in a successful furniture transfer.

Our conversations with stakeholders also highlighted the value of planning and consultation in the furniture transfer process. It was described as necessary to ensure transferred furniture would be a good fit for new users, thus making it a positive experience for everyone involved.

> *"There's no possible way to reuse furniture in material quantities without the planning component." - Respondent A*

The transportation and delivery component was also identified as very important and in some cases a major challenge. The ease of access of new furniture, with same day or same week deliveries made it necessary to have a relatively smooth transportation and delivery process to avoid turning off potential new users.

We identified a number of themes that describe circularity in furniture use at UBC and broadly categorized them as facilitators, motivation, and challenges:

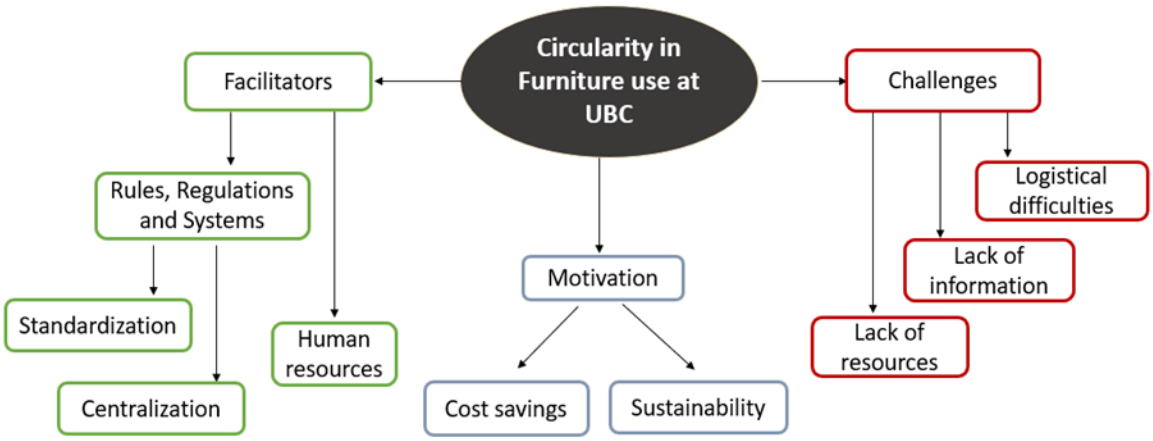

Figure 4. Themes describing circularity furniture use at UBC.

The stakeholders we interviewed described sustainability and cost savings as key motivations driving their involvement in the process. As evidenced in the following quote, a stakeholder

described the value people place on ensuring used furniture doesn't end up in the landfill. However, the cost savings was also a significant factor, often more so than the sustainability concerns given that departments often have to deal with a limited budget.

> *"We see the sharing of furniture as a good thing, that it's saving the planet, but it's also saving the department and other departments money." Respondent B*

They also identified a number of key challenges broadly described under the themes of logistical difficulties, lack of information and lack of resources. From the complexities around working with the UBC labor crew to move furniture around campus to the lack of clarity on how to pay for movers, our stakeholders described various logistical difficulties that made the furniture transfer process less convenient.

> *"To me one of the more daunting parts was figuring out how to book the movers, how you pay, who pays, the scheduling, when people need to get rid of it by a certain time and maybe the movers aren't available" - Respondent C*

There are limited human and other resources to facilitate seamless furniture transfer. Thus, the process is long and occasionally expensive. For example, as we described earlier in the steps to a successful furniture transfer (see **Figure 3**), there is a need for human resources to support the planning and consultation process, and a labor crew whose work description includes supporting the transportation and delivery of furniture pieces involved in transfers.

> *"It's not anyone's job description, because it's a new program." - Respondent A*

Lack of information was another core challenge, stakeholders described having limited access to information on what kinds of furniture are available for transfers across campus and the steps to accessing those furniture pieces.

The stakeholders also had important ideas on factors that could facilitate a more effective furniture transfer. We've described these under the themes of rules, regulations and systems and human resources.

In discussing rules and regulations, they described the value of having rules to guide the purchase of furniture. These rules would ensure that the furniture that comes to campus is high quality and ergonomic, making them more likely to be long lasting, surviving their first use, multiple moves and reuse. Standardization was also highlighted as valuable, a set of standards could be developed to ensure not just quality but a certain level of similarity, creating a system where furniture pieces could be easily transferred and would be functional for various users across various departments.

> *"The only way to end up with an inventory of good quality furniture suitable for reuse is to buy quality furniture at the first instance, and to buy things in a way that means you can mix them together and still have an end result that everyone can be happy with." - Respondent A*

The need for centralized systems to provide information and facilitate easy access to used furniture was also highlighted. This system could serve as a repository of information on available furniture pieces across campus, including pictures of the available furniture and how to access it. The system could also provide support for users to consult with an expert and ensure pieces would be a good fit for them. A system like this, however, will require human resources to run effectively and to facilitate seamless service delivery, making furniture transfers as convenient as the purchase of new furniture.

> *"There's certainly a lot of stuff floating around that could be captured if you had a big kind of centralized system for it" - Respondent C*

Human resources are a very key factor and their presence is core to the success of the furniture transfer process, from people who monitor the purchase of furniture and ensure they meet certain standards to those who provide consultation for people interested in accessing used furniture, and then those who do the work of moving furniture across campus. Having staff dedicated to each of these tasks is essential.

5.0 Discussion

The following section (5.0) will expand upon some of our key findings in greater detail, drawing connections between our findings and the literature on furniture circularity. The section will also begin to hint at what some of the report's key recommendations are. All of the report's key recommendations will then be listed in section 6.0.

5.1 Expanding the furniture transfer network

A. Commit resources

The existing informal furniture transfer network at UBC is primarily led by one staff member, who has voluntarily taken on this responsibility on top of their other duties. Given that no additional staff time or budget is assigned to the network, it is reasonable to conclude that the existing transfer network does not have a lot of resources committed to it. The result is that the process often takes a long time, and is not streamlined either for users or for the organizer. It is interesting to note that where there is a lack of structural support behind the promotion and organization of furniture reuse and exchange, an opportunity is created for consumers and individuals to form their own exchange networks (Arman & Mark-Herbert, 2021). Although Arman and Mark-Herbert imply that consumer-led networks are a positive outcome from a lack

of overarching leadership on reuse - and clearly, community organizing to prevent materials ending up in landfill is a great deal better than no action at all - in the context of the existing UBC furniture transfer network, having a lack of leadership, namely paid staff and resources committed to the furniture reuse network has negative implications for the overall reliability of the reuse loop (Arman & Mark-Herbert, 2021). With this in mind, there may be limits to what informal and consumer-based reuse networks for furniture can achieve without increased structural backing. Structural support in the form of additional financial and staffing resources may help to make the furniture transfer process more efficient and more streamlined for users and organizers alike. This may help to make regular furniture exchange more feasible and therefore more widespread at UBC. Further, it is possible that political support for circularity in the form of additional financial and human resource commitments for furniture transfers may serve as an example of circular practices at UBC that could be adapted for other material flows.

B. Increase information flows

An additional procedural issue with the existing furniture transfer network at UBC is a lack of clarity about how it works, a lack of awareness about the existence of the system, and a lack of information available to participants about steps in the process, particularly the removal of furniture. This acts as a barrier to widespread reuse of furniture at UBC as it prevents the process from being accessible and easily understood to a wider range of individuals and departments. Both in wider society and in the context of UBC, a distinct lack of awareness and information available on furniture exchange might partially explain why furniture flows are still predominantly linear, not circular (Silvius et al., 2021). People are either unaware the network exists or do not have sufficient information about the process to complete a transfer/s with ease. At UBC, information flows as they relate to the furniture reuse network can be considered as

leverage points, whereby improving the flow of information holds the potential to increase the sustainability of a system (Meadows, 2013). As such, enhancing the availability, accessibility and quality of information on the furniture transfer network may enable more widespread and longer-term practices of furniture exchange and reuse at UBC. Indeed, given the existing constraints on staff involved with the transfer scheme, it may not be possible to expand the network without the commitment of further resources.

C. Increase user-friendliness

It is apparent that the existing furniture transfer system at UBC has multiple shortcomings in terms of efficiency and ease of use. The process has many layers and can often take months. For the lead member of staff, it involves a disproportionately large amount of work relative to their pre-existing workload and compared with the small to non-existent amount of resources committed to it. As it stands, the flow of furniture is much more linear than it is circular (Silvius et al., 2021). Although this is likely in part because profit-driven furniture businesses would stand to lose a lot from a transition to a more circular economy of furniture, inefficiencies in existing furniture reuse networks - both in UBC and in society at large - could also be partially to blame for furniture flows still being linear. The informality of the network is what leads to the aforementioned issues of a lack of resources, time constraints and a lack of awareness surrounding the network. These, in turn, result in the network being somewhat unappealing to potential users, and to potential returning users. The inefficiency of the system means it is not always the most logical option for UBC staff seeking new furniture or looking to dispose of unwanted furniture, which may help to explain why furniture reuse is not more regular and further-reaching at UBC.

5.2 Formalizing the network

Since a lack of resources, lack of information and time constraints on the existing furniture transfer network are all arguably due to the network being an informal one, it therefore follows that formalizing the network could enable the furniture transfer to become more frequent and have a greater impact at UBC. It is worth noting that UBC does have an existing online platform (Reuse-it!) for the buying and selling of second-hand items, such as furniture, between departments. Although this is slightly more "formal" than the informal network being studied here, it still suffers from the same problems as the informal network, namely, a lack of clear information available, excessive costs, difficulties with removal and poor aesthetic of listed items. As such, it is not a sufficient alternative for the informal furniture reuse network as it stands. Additionally, transferring items and money between departments is not simple, and these processes are guided by existing university-wide rules at UBC that do not take informal furniture exchange into consideration.

While some community-level "self-organization" in UBC has created small reuse loops that result in less furniture going to landfill and less resources being consumed, the current ability for this network to make UBC more sustainable at a larger scale is somewhat constrained by an overall lack of institutional diversity in this process - both in terms of wider norms and rules around furniture transfer, and also in terms of actors involved such as departments, working groups, partner organizations and senior management at UBC (Ostrom et al., 1999). Identifying a set of rules and procedures for governing the furniture transfer, along with committing additional resources to the process may therefore serve as a useful initial step towards the formalization of furniture reuse at UBC. It's worth noting that rules and regulations may not always be necessary for furniture transfer networks, particularly in wider society. However, in the context of UBC

where processes like removal, procurement and financing are multilayered and are guided by existing rules that were created irrespective of furniture transfer, formalizing the existing transfer network by creating rules specifically with the transfer network might help to facilitate and normalize efficient office furniture exchange. Reuse-it! would also benefit from the standardization and enhancement of furniture procurement rules, especially to prevent furniture items advertised from remaining unsold for long periods of time.

5.3 Valuing the network

A. Monetary value

One aim of this research was to understand how furniture transfers at UBC are valued by those participating in the network. A strong motive for participating in transfer schemes was the potential for them to reduce expenditure in an already constrained budget, but it was also apparent that furniture reuse at UBC is supported by individuals wishing to behave "sustainably". Some individuals and departments felt a sense of frustration that a considerable amount of used furniture at UBC was ending up in landfill, which motivated them to participate in the reuse of furniture. From this, it is possible to conclude that the ways in which people value furniture, both in the resources taken to manufacture it and the carbon emissions resulting from the production and transportation of it, is not entirely monetary. Viewing reuse as a sustainable option might instead be based on other core values that individuals attach to resources, such as justice, care and virtue (Chan et al., 2016). However, as it stands, UBC staff still overwhelmingly value office furniture in terms of money, much more so than sustainability. This is not necessarily a bad thing, since ultimately the outcome is that furniture is prevented from ending up in landfill. What it does indicate though, is that the use of financial incentives - or disincentives - as a way of encouraging furniture reuse at UBC could help to make reuse more

widespread, further reducing waste and resource consumption (Bryerly et al., 2018; Grilli and Curtis, 2021). Further, while the need to conserve finances has driven participation in furniture transfer, arguably conservation of resources in the context of office furniture could be further motivated by cultivating lasting relationships between people and material objects which might, in turn, dispel "disposable mentalities", thus reducing the environmental impacts that result from furniture-related resource consumption (Chan et al., 2016). This is not necessarily an easy undertaking for leaders at UBC and may in fact require a paradigm shift away from a focus on budgets as drivers (or not) for sustainable behaviors, towards inspiring change based on the non-monetary values that individuals attach to resources (Meadows, 2013). Arguably, UBC has more capacity to change the system 'from within' than any other actors in this context. Perhaps taking more seriously the need to make furniture flows circular at UBC by committing resources, creating policy and formalizing the practice of furniture exchange could mark the first steps in the creation of an expansive furniture reuse network at UBC.

B. Ergonomic and aesthetic value

Standardizing the process of furniture transfer at UBC can be done in part by the introduction of rules and regulations. However, there is a more subtle cultural influence on the success - or not - of furniture reuse. For many people at UBC, ergonomic furniture is now so desirable that an absence of ergonomics can inhibit furniture exchange and reuse. Indeed, concerns about ergonomics are now so embedded in UBC culture that people are often not interested in reused items that are not ergonomic. It is evident that in UBC as well as in society, factors such as ergonomics are key features of individual/consumer relationships with furniture products (Korsavong, 2014). Further, along with monetary value, and to a lesser extent, sustainability, the ergonomic value of a piece/s of furniture will be a key determinant of whether many staff at

UBC opt to participate in any furniture reuse network. It is somewhat unsurprising, and indeed understandable, that in an era of relatively lengthy working hours and with the prevalence of desk-based work, staff see the comfort of the furniture they use as paramount. Given this, it may be counterproductive to the success of furniture reuse to overlook the significance of ergonomics. Instead, a harbinger of increased furniture reuse at UBC could be setting university-wide standards for ergonomics so that all furniture procured, that could later be exchanged, meets the majority of staff's baseline need for comfort and usability.

6.0 Recommendations

Our findings indicate a number of practical changes that UBC can make in order to facilitate more widespread furniture reuse on campus. Along with making a structural commitment to the circularity of furniture, the overarching aims of the university in the context of furniture reuse should be to formalize and centralize the existing network, which will naturally lead to an expansion of the network.

1. Merge and/or harmonize Reuse-it! with informal furniture transfer network

UBC's overall strategy for improving the furniture reuse should seek to build upon parts of the informal reuse network as well as Reuse-it!, perhaps by merging or harmonizing both projects, learning from the shortcomings of each and drawing on best practices from both.

The use of an online marketplace or website to advertise available furniture for reuse could also enhance the efficacy of furniture reuse at UBC. The existing online platform for furniture transfers at UBC, Reuse-It!, has been regarded by some users as a great "facilitator" of furniture exchanges, since it renders the process more seamless, but it still has a number of

problems. In order for Reuse-it! to function more effectively, an increasing number of users are needed, as it would make it more likely for furniture supply to meet the demand.

2. **Create at least one project coordinator/officer position**

The existing furniture transfer network is currently run by one staff member, unofficially and in addition to all of their other work. Creating a Furniture Reuse Project Coordinator position (or similar) and carving out a budget to run the project will help to make the furniture reuse network sustainable in the long run.

3. **Create a dedicated project budget**

In order to expand and sustain furniture reuse and circularity at UBC, a substantial financial investment will be needed from the university, which should be committed to cover both staffing costs and project budgets

Additional staffing budget could also be committed to UBC's removal service, particularly for hiring more skilled removal workers, so that individuals and departments looking to use this service to transfer second-hand furniture can access it in a timely fashion.

4. **Create or subsidize a removal service**

UBC should examine the potential for either *creating* a dedicated furniture reuse removal service and/or budget, or, alternatively, *subsidizing* a free or discounted removal service for users of the furniture reuse network. Currently, the transfer of used furniture between departments takes too long and can cost too much money. Creating a specific removal service (and policy) for reused furniture will help make furniture reuse a more appealing option than purchasing brand new furniture when there is suitable second-hand furniture available on campus.

5. **Allocate space on UBC campus for disused/unwanted furniture storage**

Having a warehouse (or similar), ideally in an accessible location on UBC campus, would solve the storage problem and would allow staff and students to browse and shop based on their needs. There is a lack of storage space at UBC, which means that unsold items from Reuse-it! Often end up in landfill. The same may be true for unwanted furniture items in the informal furniture transfer network.

6. **Standardize procurement guidelines**

UBC should seek to standardize procurement guidelines for all furniture purchasing. This means developing rules and regulations to ensure that only high-quality, durable, and ergonomic furniture is purchased for use at UBC in the first place. This will increase the ease of transfers, as departments and individuals will be assured about what types and quality of furniture they can expect to receive in a furniture transfer, and will remove existing concerns over size, functionality, comfort, and quality. This process will rely on leadership working with procurement staff and faculty members to decide on furniture purchasing requirements and rules.

7. **Financially incentivize exchange and simplify process for interdepartmental fund exchange**

UBC could provide financial incentives or subsidies to departments who are participating in exchanges by giving furniture away for free. Ideally, furniture transfer between departments would be free, but it is understandable in budget-constrained scenarios that departments may wish to recover money spent on furniture that they are giving away. Alternatively, or in addition, UBC could ensure that the process for exchanging funds between departments is made as simple as possible for the purpose of furniture transfer.

8. **Deliver marketing events and increase comms**

Furniture reuse may also become more widespread through increased awareness-raising and engagement. One way to achieve this could be hosting social "marketing" events throughout the year to help promote furniture reuse and the reuse program itself. The project of expanding the furniture transfer network should also include a robust communications plan.

9. **Create "How to" guides and circulate widely**

Every "how to" step of participating in furniture exchange should be made widely available to all staff teams at the university, especially guidance on removals and transferring funds between departments.

7.0 Future Research

Our study indicates that further research in the following areas is needed to support UBC in the enhancement of its furniture transfer network:

1. Examine best practices from other institutions and interview stakeholders responsible for procurement in order to assess how best to modify existing procurement guidelines to ensure that only furniture which is high quality, aesthetic and ergonomic is purchased.
2. Explore how interdepartmental money transfers for furniture could be facilitated more easily.
3. Investigate how UBC could engage with furniture buy-back programs, whereby the original retailer is responsible for repairing the furniture at its end of life
4. Seek to assess the specific financial implications and benefits of investing in a formal furniture transfer network, including how greater investment in better furniture, resources

(for staffing, removals and project budget) can lead to cost-savings in the longer-term. This analysis should consider how cost savings that are likely to be felt by individual departments, may not be reflected in reports that consider the broader UBC community and should be mindful that environmental benefits can be difficult to quantify as they do not show up in standard cost-benefit analyses or profit-loss statements.

7.0 Conclusion

This project investigated furniture transfers between and within departments at UBC. We tried to assess how furniture transfers were valued by stakeholders and to identify best practices to increase successful transfers in the future.

A preliminary literature review suggested that the furniture market is a central one when it comes to achieving a circularity model. However, there has currently been scarce effort by the furniture industry to embrace circularity, which has led many scholars to focus on individuals' behavior instead.

When examining furniture transfers at UBC, we found that the efforts undertaken by few individual actors operating on a voluntary basis were crucial, but not sufficient to trigger widespread change in the system. Lack of formal resources such as budget and time represented a significant constraint to the creation of a more seamless furniture transfer process. While the absence of a structural organization generated opportunities for the creation of informal networks of furniture transfers at UBC, without any formal support such networks found it extremely arduous to operate and thus likely produced fewer successful transfers.

Our findings showed that a lack of structural networks for furniture transfers also had a negative impact on individuals' awareness of informal systems in place for furniture transfers at UBC, thus rendering furniture transfers less accessible to other UBC community members. Even for those who had access to it, the informal network of furniture transfers was still extremely hard to navigate, due to the aforementioned major constraints, which made it easier and faster for individuals to purchase new furniture instead of seeking used furniture. For instance, people involved in furniture transfers often complained about the long waiting time to have an item transferred between departments, due to lack of paid staff. Others mentioned that items available for reuse were limited and often did not respond to their needs (ergonomics) or standards (aesthetics).

As emerged from our survey and interview results, to overcome such challenges existing networks must be formalized. Hence, we advanced some recommendations concerning the creation of a process of standardization and centralization for furniture transfers. Standardization would allow for better quality of furniture entering the system, which in turn facilitates reuse, while centralization would lead to a more seamless experience of furniture transfers.

Finally, in terms of values attributed by stakeholders to the furniture transfers network, we found that sustainability played a significant role, but financial concerns represented a major motivation for people to engage in furniture transfers. Given the relevance of economic considerations, future research should focus on the potential economic benefits of office furniture circularity, collecting quantitative data on cost savings thanks to furniture transfers.

While placing specific attention to economic concerns does not represent a negative element *per se*, we still believe that UBC should pursue a paradigm shift in how furniture transfers are valued. This could be encouraged by organizing awareness-raising activities on

campus or events to promote furniture reuse programs. By doing so, UBC will not only be able to increase the frequency of successful furniture transfers, but also take the first step towards a major system transformation, inspiring other institutions to do the same.

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