

Cross-disciplinary Collaborations for the Creation of Fashionable Wearables

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Structured Abstract

Purpose: Fashionable wearables (FW) are one of the emerging product category which brought up new design and product development processes as well as new collaborations between institutions and a new consumer segment. FW are defined as products combining aesthetics and style with functional technology (Seymour, 2009). They possess complex textiles, yarns, hardware, and software as well as collaborative methods and environments comparing an ordinary garment. Fashion is an old and complex system of institutions (Kawamura, 2018) focusing on the material and cultural production of goods. It nestles phases from the design and production to distribution, diffusion, reception, adoption, and consumption of garments and accessories (Kawamura). With technological developments occurring in time (e.g. inorganic materials, social media), institutions have encountered unique challenges in those phases for creating fashionable wearables as emerging materials, methods, functions, products, and new consumer segments. A smart version of Levi's denim jacket Jacquard designed by collaboration of Google and Levi's and Hermes edition of Apple Watch designed by the collaboration of Apple and Hermes are prominent examples. Since FW are complex products, they need a multidisciplinary design process that requires the participation of fashion and technology stakeholders. However, being such a recent category challenges these stakeholders. To overcome these challenges this paper unveils the roles, experiences, expectations and challenges of fashion and technology experts participated in FW design.

Originality/Value: FW market is niche, and abandonment rates are high (Ledger, 2014; Gagliardi et al., 2020). Regarding this problem, there have been several studies highlighting the necessity of collaboration of fashion and technology stakeholders (Juhlin, 2015; Silina and Haddadi, 2015; Mihaleva and Koh 2016; Heinzel et al., 2019). However, to the best of our knowledge, the literature lacks a detailed

source of information covering experiences of fashion and technology experts who collaborated in the design of FWs.

Methodology: We conducted semi-structured interviews with 20 experts. The inclusion criterion was having 2-20 years of experience in FW or smart textiles and fashion and technology collaborations. Some of the participants own international brands or businesses. They also include star designers, who collaborated with international technology and fashion brands. Interviews were structured under four themes: (1) Experts' role in FW projects (what roles they perform in the process) (2) their industrial and project-specific experiences (what kind of projects they attended, which partners participated, what difficulties they faced, and how they solved these problems) (3) their expectations of collaborating with either fashion or technology industries (4) their evaluation of the current state of FW (how they perceive the current products and projects and what they expect in the future).

Findings: We present our results as fourteen suggestions under 3 main themes. The first theme establishes that; FW is about an emerging collaborative managerial effort that is open efficient and balanced. This theme is illustrated by 5 sub-themes: (1) Technology approach dominates current products so, fashion should be more prominent. (2) Fashion and technology professionals have different attitudes towards user involvement. Technology is user-centered but fashion is distant to the user involvement, so this should be balanced. (3) Efficient tools and environments are required to avoid the communication gap. (4) There are two design approaches to the projects as fashion-driven and technology-driven. Projects are initiated by either fashion or technology but more parallel initiations should be applied. (5) Involving users to the process requires systematic recruitment. Participation of users who can comprehend FW -which is an avant-garde product category- in ideation, design, and testing is challenging.

The second theme is about the role of fashion in FWs as being idealist and visionary. Vision and idealism roles are attributed to fashion. Because fashion has roles as storytelling, meaning creation, and communication. Sub-themes illustrate that (1) Collaboration between fashion and technology can facilitate the wider adoption of FW. (2) Current product examples have not reached their potential. They are still pre-matured. (3) FW have the potential to revolutionize the fashion and technology industries. Because they can change dynamics to more ethical, sustainable conditions. (4) The design should be independent of the pressure of financial supporters to be able to provide fruitful environments. (5) Keeping up with the industry's time requirements is difficult. Fashion forwards too fast but technology does not develop quick so the pace should change. (6) Every project is unique. Therefore, every project requires specific approaches to be applied.

The third theme states that: Design and production of FW is a realistic system. There are power relations and diversity to be managed. Sub-themes illustrate that: (1) Larger teams imagined with an inherited

hierarchy of stakeholders are required. This means fashion designers and technology developers should lead the process. (2) Transparency in staff recruitment and decent management as strategies are necessary. Although fashion designers and technology developers are leaders, conflicts should be managed by professional recruiters or project managers. (3) Fashion impact should be more prominent. Technology eventually can do anything so; fashion experts should imagine and force technology experts to make it possible.

References

- Bai, Y., T. M. Choi, J. Tan, R. W. Au, and Y. Zang. (2014). "Consumer-Perceived Symbolic Meaning of Fashion Design and Art Collaboration (FDAC)." *The Design Journal* 17 (1).
- Brucks, M., Zeithaml, V.A., Naylor, G., (2000). Price and brand name as indicators of quality dimensions for consumer durables. *J. Acad. Market Sci.* 28, 359– 374.
- Choi, J. Kim, S, (2016). Is the smartwatch an IT product or a fashion product? A study on factors affecting the intention to use smartwatches. *Computers in Human Behavior.* vol. 63, p.777-786.
- Corella, S., F. Canterino, M. Guerci, and A. B. Shani. (2016). "Organizational Learning Mechanisms and Creative Climate: Insights from an Italian Fashion Design Companies." *Creativity and Innovation Management* 25 (2).
- Crane, D. (2001). *Fashion and Its Social Agenda.* University of Chicago Press.
- Erdem, T. Keane, M, P. (1996.) *Decision-Making under Uncertainty: Capturing Dynamic Brand Choice Processes in Turbulent Consumer Goods Markets.* *Marketing Science* Vol. 15, No. 1, pp. 1-20 1996
- Fisher, E. (2015). *Riverkeeper's Annual Fishermen's Ball.* <https://www.riverkeeper.org>
- Gagliardi, N. R. Berglund, M.E. Duvall, J. Dunne, L.E. (2020) *The Ideator and the Idea: Exploring Wearable Technology Concepts and Their Sources,* *Fashion Practice*, 12:1, 102-125
- Google. (2016). *Google ATAP.* Available From: atap.google.com/jacquard/
- Goworek, H., P. Perry, and A. Kent. (2016). "The Relationship between Design and Marketing in the Fashion Industry." *Journal of Fashion Marketing and Management* 20 (3)
- Juhlin, O. Zhang, Y, (2015). *Digitizing fashion: software for wearable devices.*
- Johnson, E. (2002). *Product Design Collaboration: Capturing Cost Supply Chain Value in the Apparel Industry, Achieving Supply Chain Excellence through Technology.* San Francisco, CA: Montgomery Research Inc.
- Jung, Y. Kim, S. Choi, B. (2016) *Consumer Valuation of the Wearables: The case of smartwatches.* *Computers in Human Behavior* 63 (2016) 899-905.
- Heinzel, T. (2019) *Attempts, Failures, Trials and Errors. Notes on an exhibition of failed prototypes and rejected projects.,* *The Design Journal*, 22:sup1, 1941-1956.
- Kawamura, Y. (2018), *Fashion-ology,* Oxford, Berg.

- Kensing, F. Greenbaum, J. (2012). Heritage: Having a say. In *Routledge International Handbook of Participatory Design*. pp. 21–36. New York: Routledge.
- Ledger, D. McCaffrey, D. (2014). *Inside Wearables – How the science of human behaviour change offers the secret to long-term engagement*. Endeavour Partners LLC.
- Wang, L. Shen, B. Liu, X. (2017) The Value of Design Collaboration in the Fashion Business: A Literature Review, *The Design Journal*, 20:6, 795-820.
- McCann, J. Hurford, R. Martin, A. (2005). A Design Process for the Development of Innovative Smart Clothing that Address End-User Needs from Technical, Functional, Aesthetic and Cultural View Points. IEEE 2005. International Symposium on Wearable Computers.
- Miles, M, B. Huberman, A, M. (1994), *Qualitative Data Analysis*, 2nd Ed. Sage. California.
- Mihaleva, G. Koh, C. (2016). Evolution of Fashion Designing the Era of High-Tech Culture. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*. vol. 10 no. 7. p.2322-2326.
- Moedas, C. A. (2006). “Integrating Design and Retail in the Clothing Value Chain.” *International Journal of Operations and Production Management* 26 (4): 412–428.
- Motti, V. G. Caine, K, (2014). Human Factors Considerations in the Design of Wearable Devices. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting 2014*. p.1820-1824.
- Parsons, J. L. (2015). “Historical Patents as Inspiration for Digital Textile and Apparel Design.” *Clothing and Textiles Research Journal* 33 (4): 280–296.
- Silina, Y. Haddadi, H. (2015). “New Directions in Jewelry”: a Close Look at Emerging Trends & Developments in Jewelry-like Wearable Devices. ISWC. Osaka, Japan.
- van Dongen, Pauline, Ron Wakkary, Oscar Tomico, and Stephen Wensveen. (2019). “Towards a Postphenomenological Approach to Wearable Technology Through Design Journeys”. *Textile Intersections*. London, UK
- Whittle, J. (2014). How Much Participation is Enough? A Comparison of Six Participatory Design Projects in Terms of Outcomes. PDC 2014. Windhoek, Namibia.
- Wu, J. Kang, J. Y. M. Damminga, C. Kim H. Y. and Johnson, K.K.P. (2014). “MC 2.0: Testing an Apparel Co-Design Experience Model.” *Journal of Fashion Marketing and Management* 19 (1): 69–86.

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