

# Applying Human Centered Design in the development of digital tools for disaster response

The objective of the thesis is to analyze how Human-Centered Design (HCD) can be applied in the development of digital tools for humanitarian response. In order to achieve this, the research aims to (A) understand the factors that enable and hinder the implementation of HCD, to (B) translate these into required elements for HCD implementation, to (C) understand the needs for HCD in the development of response technology and to (D) make a proposal for the implementation of a human-centered product development process for 510.

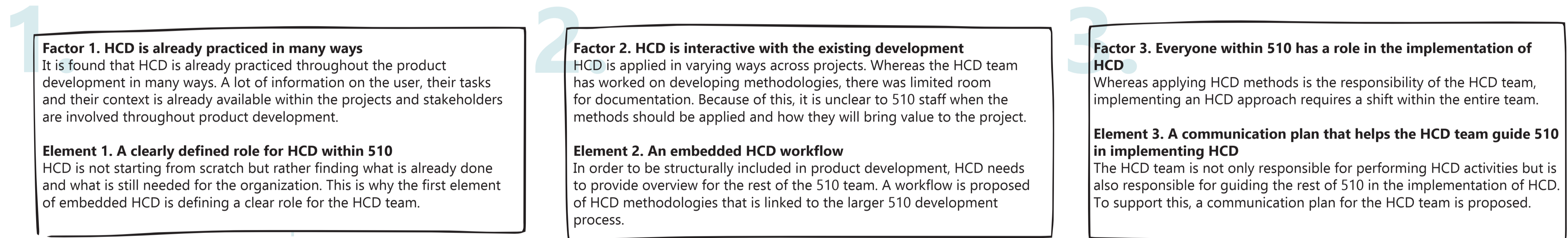
The context of disaster response is incredibly complex due to its chaotic nature and the large number of variabilities per disaster. This complexity makes it difficult for developers of digital tools for disaster response to understand the context of the products they develop. However, a lack of understanding of the use context can result in the development of ill-suited products that do not fulfill the user needs.

HCD is a method to generate a better understanding of the user and the use context through the perspective of the user. It is an approach that is rooted in the belief that the people who face the problems are the starting point when developing a solution.



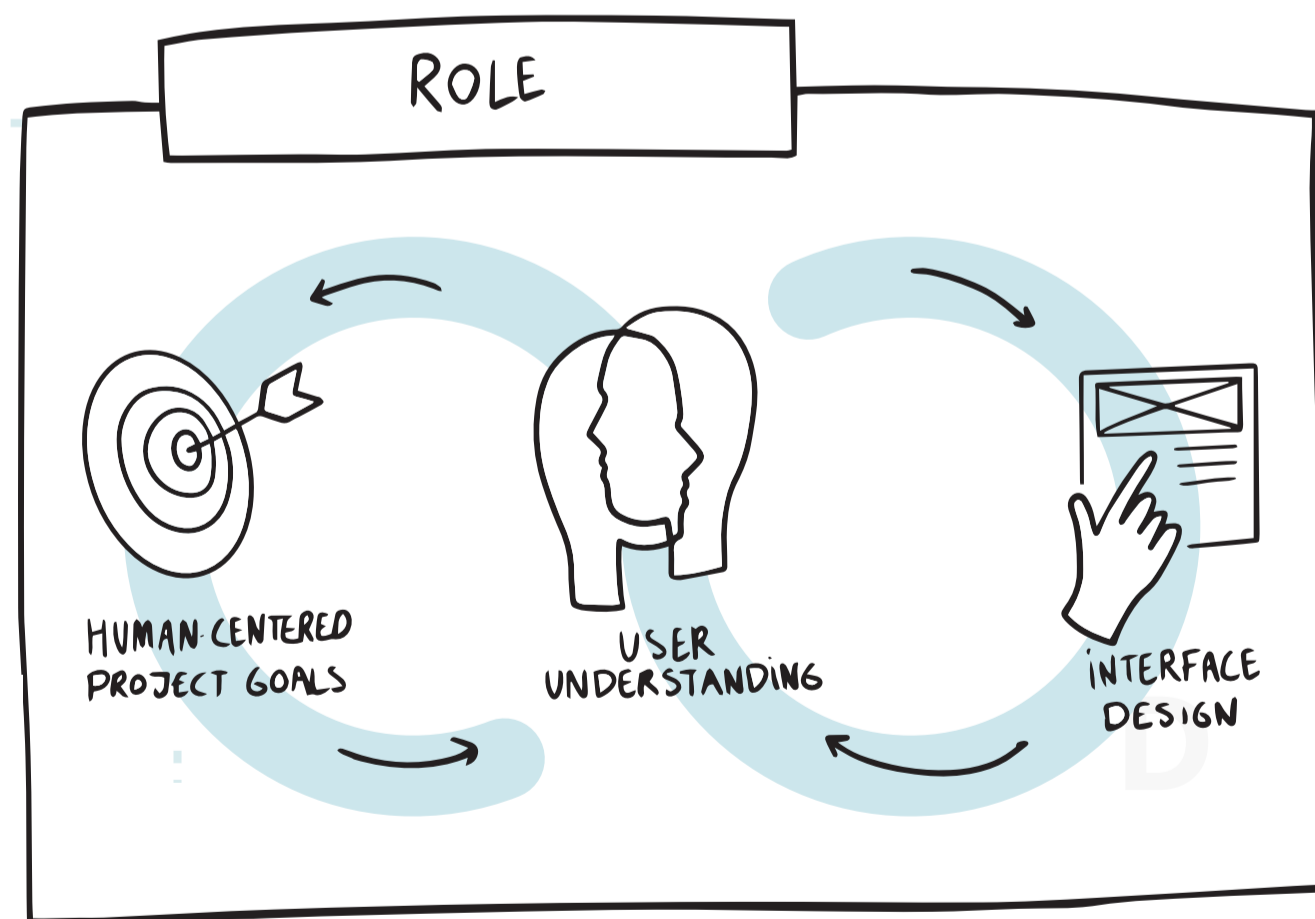
510 is a Netherlands Red Cross initiative that develops accessible digital tools for humanitarian response across the world. 510 aims to incorporate a HCD approach to their product development.

From the research, three factors on the implementation of HCD are defined. The three lessons are translated into three elements of embedded HCD

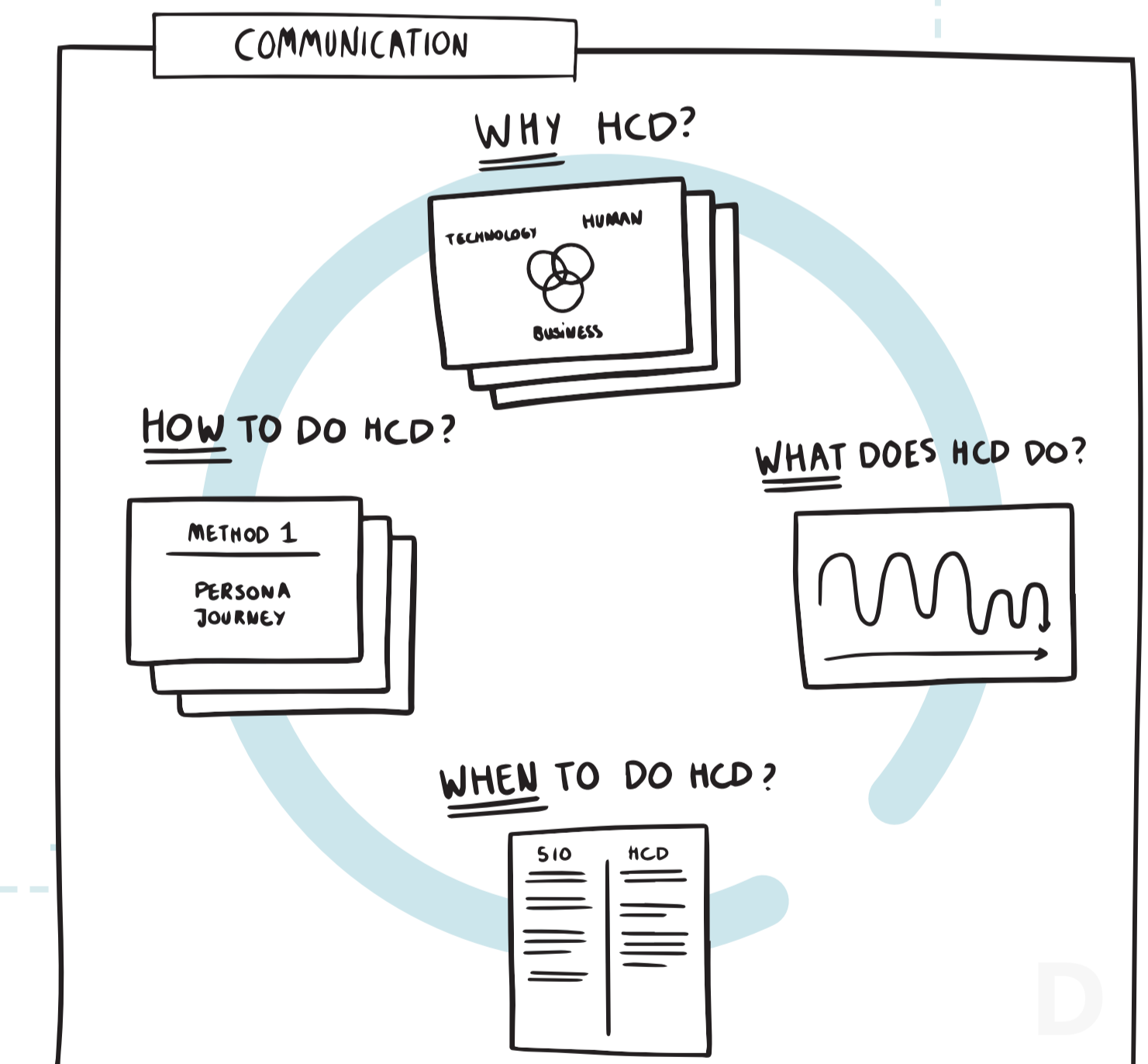


The needs for HCD in 510 are found

Identified needs for HCD in the development of digital tools for humanitarian response are supporting the formulation of human-centered project goals, generating an understanding of the user and their direct context and the design of usable and suitable products.



WORK FLOW							
HCD role	HCD method	Project exploration	Proposal writing	Feasibility study	Database/ model building	Product development	Implementation support evaluation
Human-centered project goals	Strategy sheets		1 <sup>st</sup> FILL	2 <sup>nd</sup> FILL	3 <sup>rd</sup> FILL		USER PROJECT GOALS
User understanding	Persona journey Codesign	OLD DATA NEW DATA	1 <sup>st</sup> FILL 1 <sup>st</sup> CODESIGN	2 <sup>nd</sup> FILL 2 <sup>nd</sup> CODESIGN	3 <sup>rd</sup> FILL 3 <sup>rd</sup> CODESIGN		PJ
Interface design	User testing Prototyping			1 <sup>st</sup> PROTOTYPE	2 <sup>nd</sup> PROTOTYPE	3 <sup>rd</sup> PROTOTYPE	FEEDBACK



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