The automotive industry is going through a digitalization journey. While it still manufactures physical cars, software is becoming progressively present and important. This development causes socio-technical tensions as existing processes meet software. For instance, a two-minute change of a piece of software may require months to be deployed in a car because it is embedded in and dependent on the car’s physical components. Compared to the physical components, the software does not need to be tested for aspects such as dampness or crashworthiness.

By identifying specific socio-technical tensions, this thesis brings attention to the links that connect the organization with the product it is producing. A challenge for organizations facing digitalization is to recognize the importance of required links that facilitate innovation, and to establish new ones to cope with continuous changes in our digitalized world. The thesis presents a process model, Digitalization Dynamics, which illustrates how a change triggers a socio-technical tension that in turn influences the establishment of new links or reinforces existing ones. Depending on what links exist, possibilities for innovation open up or are limited.

The digitalization dynamics process model can be used as a tool for managers in organizations exposed to continuous changes and help managers to anticipate what types and categories of links that need to exist to speed up the process and keep up with competitors. The model is a contribution to the research area of digital innovation.