Lifecycle characteristics of Meta products

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Problem: With the development and maturation of ubiquitous technologies and their enabling technologies, such as RFID tags, small size sensors (or more generally, product embedded information devices), a new generation of products so-called meta products has been introduced to the market. The product is no more seen as a single entity but rather as dedicated networks of products, services, people and environment fed by information flows made possible by the web and ubiquitous technologies. Among other innovative features, Meta products allow monitoring new parameters of the product life and of its environment, through the real-time collection of information about its behavior and experiences. Information collected about the usage may lead to re-design the on-market products. Further, products can be extended or adjusted through up and down-grade mechanisms enabled by services. This leads therefore to the extension of the lifecycle stages and their characteristics. This novel perception of products creates new opportunities to deal the complexity of the lifecycle management enabled through the feedback and feed forward mechanisms. The extended characteristics of Meta products are not yet considered by actual PLM approaches and systems.

Project: Within this work, it is requested to study the extended characteristics of Meta products and reveal correlations between product changes (evolution) and potential impacts on lifecycle stages (manufacturing, design, recycling, etc).

Plan:
Step 1: Study the evolution of products from single entities to Meta products
Step 2: Study PLM principles and approaches
Step 3: Define a cartography of Meta Products lifecycle characteristics
Step 4: Identify relationships between product changes and impacts on the lifecycle stages, namely on design
Step 5: Application scenario of e-vehicles