Figure 13. Stages of Internet development

Source: own study based on (Pawlak, Nierebiński 2011; Aghaei, Nematbakhsh and Farsani 2012).

process it in order to generate an individualized data package. In other words, Web 3.0 fulfills the role of an intelligent provider (artificial intelligence) of selected information packages according to the interests of the recipient. In the concept of the semantic web, various applications and websites are able to "communicate" in order to gather relevant information and take specific actions. For example, after browsing websites with specific content, when the user moves to other websites, previously searched data may still be referenced to, for example in the form of information banners. Web 3.0 finds its basis in the semantic information theory, in which information is an aggregate of various messages, e.g. about product attributes or events. They allow taking specific actions, building opinions or taking a position on the case (Stefanowicz 1987).

In the literature there are also polemics about the next stage of development of the Internet, namely Web 4.0, that is the idea of a pragmatic web. In the concept and discussions about Web 4.0, an individual is referred to as an agent who possesses the ability to identify different schemes and communication systems. One that collects data available on the web, after previous instructions from users about their information needs. Web 4.0, as a pragmatic web, is designed to provide meaningful information about the application nature for the user. The information obtained on the basis of data available in the web will be able to take a variety of forms, e.g. statistical analysis, tables, comparisons, reports, etc. The concept of Web 4.0 is based on a pragmatic information theory founded on the analysis and assessment of cognitive factors and the usefulness of various data available in the organization. In the pragmatic theory of information,

the access to and analysis of data provides the information necessary to make the right decisions (Gleick 2012).

The continuous development of the Internet and constantly evolving new technological solutions are related to changes in many areas of the functioning of individuals, organizations and institutions that govern the world. Access to information and a new type of communication also affect socio-cultural changes around the world. They consist in the access to knowledge, behavior of different nations, their preferences, possibilities, etc. Much of such information, coming from various markets, is transferred and implemented by individual units.

The source literature writes about the so-called revolution in the Information and Communication Technology (ICT) (Kelly 2001). According to the author, the breadth of cultural changes influences the fact that this term should be extended by another "c". The second decade of the 21st century is characterized by a technological, cultural and communication revolution (TCC) with a dynamic course, which is referred to as the world 3.0. It consists, among other things, of four main elements (Figure 14):

- Web 3.0, which is the technological basis in which the Internet is used as a platform for services (new solutions) consisting, on the one hand, in personalization and, on the other hand, co-creation of content by recipients. Web 3.0 is sometimes referred to as the democratization of communication, where the boundary between its recipient and creator is blurred (power is in the hands of users). Furthermore, the Web 3.0 concept intends to make greater use of new technologies to discover the thoughts, feelings and emotions of their users – what are their feelings in a given place and time (Mróz 2016). For this purpose, social media can be used, mainly networking sites and instant messengers, which enable users to highlight emotions accompanying them at a specific time and place (e.g. Facebook allows a person to indicate their mood using built-in options that show that at a particular moment of e.g. sharing specific information or places, they are excited, proud or angry).
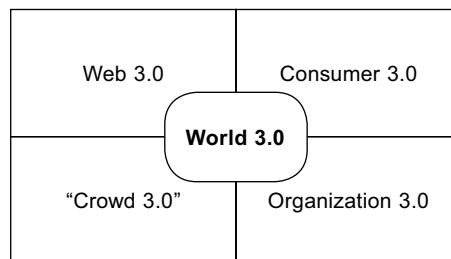

Figure 14. Elements of World 3.0

Source: own study based on (Ghemawat 2015).