Knowledge market

5.1 A knowledge market is a mechanism for distributing knowledge resources. There are two views on knowledge and how knowledge markets can function. One view uses a legal construct of intellectual property to make knowledge a typical scarce resource, so the traditional commodity market mechanism can be applied directly to distribute it. An alternative model is based on treating knowledge as a public good and hence encouraging free sharing of knowledge. This is often referred to as attention economy. Currently there is no consensus among researchers on relative merits of these two approaches.

History

A knowledge economy include the concept of exchanging knowledge-based products and services. However, as discussed by Stewart (1996) knowledge is very different from physical products. For example, it can be in more than one place at one time, selling it does not diminish the supply, buyers only purchase it once, and once sold, it cannot be recalled. Further, knowledge begets more knowledge in a never-ending cycle. Understanding of knowledge markets is beginning to emerge. As would be expected, they are very different in form from traditional markets.

Knowledge markets have been variously described by Stewart (1996) and Simard (2000) as a mechanism for enabling, supporting, and facilitating the mobilization, sharing, or exchange of information and knowledge among providers and users.

This transactional approach assumes that knowledge-based products or services are available for distribution, that someone wants to use them, and that the primary focus of the market is to connect the two.

This perspective is appropriate when the market has limited or no interest or control over either the production or use of the content being exchanged, as is the case for most traditional markets. A provider-user perspective is also appropriate for emerging social networking "ideagoras" (Tapscott and Williams, 2006), in which the primary function of the market is to match existing solutions with problems and problems with those who can find solutions.

From a production perspective, processes for creating wealth through the use of intellectual capital are explained by Nonaka (1991) and Leonard (1998). At the marketing end of the spectrum, a number of authors, including Bishop (1996), May (2000), and Tapscott et al. (2000) describe the architecture and processes necessary to succeed in a digital economy.

Knowledge markets may also be sequential in nature. Simard (2006) describes a cyclic end-to-end knowledge-market model comprising nine stages that embed, advance, or extract value into knowledge products and services along a knowledge services value chain. The first five stages are internal to a knowledge organization (production and transfer) while the last four stages are external (intermediaries, clients, and citizens). Because the value chain cyclic, it can be used to model either a supply (post-production evaluation) or a demand (pre-production evaluation) approach to knowledge markets.

Knowledge services

Knowledge services is an emerging concept that integrates knowledge management, a knowledge organization, and knowledge markets. Knowledge services are programs that provide content-based (data, information, knowledge) organizational outputs (e.g., advice, answers, facilitation), to meet external user wants or needs. Knowledge services are delivered through knowledge markets.

St. Clair and Reich (2002) describe internal knowledge services as a management approach that integrates information management, knowledge management, and strategic learning into an enterprise-wide function.[14] Kalakota and Robinson (2003) and Thomas (2005) developed service-oriented architectures for the private sector. Their focus was to transform traditional retail businesses by developing enterprise-wide platforms that support customer services. RocSearch (2006) takes a broader external view, referring to a nascent knowledge services industry that goes beyond traditional cost and time leveraging advantages of the traditional consulting sector.

Simard et al. (2007) developed a holistic systems model of knowledge services for government S&T organizations.The model begins with generating new content and ends with sector outcomes and individual benefits. The model is independent of content, issues, or organizations.It is designed at a departmental level, but is scalable both upwards and downwards. The primary driver is a department's legal mandate; a secondary driver is the needs of clients and residents. The model can function from either a supply or demand approach to knowledge markets. There are two levels of resolution - performance measurement, and classifying service-related activities.

There are four types of knowledge services: generate content, develop products, provide assistance, and share solutions. 24 Knowledge services are modeled as a circular value chain comprising nine stages that embed, advance, or extract value

from knowledge-based products and services. The stages are: generate, transform, manage, use internally, transfer, enhance, use professionally, use personally, and evaluate.

(Simard, 2007) described a rich to reach service delivery spectrum that is segmented into categories of recipients, with associated levels of distribution, interactions, content complexity, and channels. The categories, from rich to reach, are: unique (once only), complex (science), technical (engineering), specialized (professional), simplified (popular), and mandatory (everyone).

From the perspective of knowledge markets, Mcgee and Prusak (1993) note that people barter for information, use it as an instrument of power, or trade it for information of greater value. Davenport and Prusak (1998) used a knowledge marketplace analogy to describe the exchange of knowledge among individuals and groups. However, Shapiro and Varian (1999) indicate that information markets will not resemble textbook competitive markets with many suppliers offering similar products but lacking the ability to influence prices. Simard (2006) described knowledge markets as a group of related circular knowledge-service value chains that function collectively as a sector, to embed, advance, and extract value to yield sector outcomes and individual benefits.

Fee-based knowledge markets commoditize knowledge by being based on traditional market mechanisms that work well for traditional goods. The buyer posts a request, normally in the form of a question and sets a price for the valid answer. Alternatively, the suppliers of knowledge (answerers) can post their bids to have the question answered.

Experts-Exchange was the first fee-based knowledge markets using a virtual currency. It provided a marketplace where buyers could offer payment to have their questions answered.

NineSigma and Innocentive are web-based open innovation marketplaces. Firms post scientific problems and choose rewards.

Google Answers was another implementation of this idea. This service allowed its users to offer bounties to expert researchers for answering their questions. The Google site was closed in 2006. Two months later, fifty former Google Answers Researchers launched paid research/Q&A site Uclue. Google also acquired Q&A website Vark.com, to shut it down a year later.

Mahalo Answers a product extension of the people powered search engine Mahalo.com, launched on December 15, 2008. Mahalo Answers users may ask questions for free or provide a monetary reward, or tip, in the form of Mahalo Dollars, the site's proprietary currency.

Free knowledge markets use an alternative model treating knowledge as a public good.

Quora, Stack Overflow, Ask Metafilter, Yahoo Answers, Windows Live QnA, Wikipedia's Reference Desk, 3form Free Knowledge Exchange, Knowledge iN, and several other websites currently use the free knowledge exchange model. None of these offer more than an increase in reputation as payment for researchers.

ChaCha.com and Answerly.com both offer subsidized knowledge markets where researchers are paid to generate answers despite the service remaining free to the question asker. Amazon.com's NowNow previously offered a subsidized knowledge market for questions asked through mobile phones and as an experimental feature in the company's ebook reader, the Amazon Kindle. The NowNow service was discontinued November 21, 2008 after an extended private beta period.[

5.2 Knowledge policy

Policies are the paradigms of government and all bureaucracies. Policies provide a context of rules and methods to guide how large organizations meet their responsibilities. Organizational knowledge policies describe the institutional aspects of knowledge creation, management, and use within the context of an organization's mandate or business model. Social knowledge policies balance between progress in the knowledge economy to promote global competitiveness with social values, such as equity, unity, and the well-being of citizens.

Knowledge policies

Knowledge policies are becoming an increasingly important element of the Information Society and the knowledge economy. Such policies provide institutional foundations for creating, managing, and using organizational knowledge as well as social foundations for balancing global competitiveness with social order and cultural values. Knowledge policies can be viewed from a number of perspectives: the necessary linkage to technological evolution, relative rates of

technological and institutional change, as a control or regulatory process, obstacles posed by cyberspace, and as an organizational policy instrument.

From a technological perspective, Thomas Jefferson (1816) noted that laws and institutions must keep pace with progress of the human mind. Institutions must advance as new discoveries are made, new truths are discovered, and as opinions and circumstances change. Fast-forwarding to the late 20th century, Martin (1985) stated that any society with a high level of automation must frame its laws and safeguards so that computers can police other computers. Tim Berners-Lee (2000) noted that both policy and technology must be designed with an understanding of the implications of each other. Finally, Sparr (2001) points out that rules will emerge in cyberspace because even on the frontier, pioneers need property rights, standards, and rules of fair play to protect them from pirates. Government is the only entity that can enforce such rules, but they could be developed by others.

From a rate of change point of view, McGee and Prusak (1993) note that when an organization changes its culture, information policies are among the last thing to change. From a market perspective, Martin (1996) points out that although cyberspace mechanisms change very rapidly, laws change very slowly, and that some businesses will use this gap for competitive advantage. Similarly, Sparr (2001) observes that governments have the interest and means to govern new areas of technology, but that old laws generally don't cover emerging technologies and new laws take time to create.

A number of authors have indicated that it will be very difficult to monitor and regulate cyberspace. Negroponte (1997) uses a metaphor of limiting the freedom of bit radiation is like the Romans attempting to stop Christianity, even though early data broadcasters may be eaten by Washington lions. Brown (1997) questions whether it will even be possible for governments to monitor compliance with regulations in the fact of exponentially increasing encrypted traffic within private networks. As cybernetic environments become central to commercial activity, monitoring electronic markets will become increasingly problematic. From a corporate point of view, Flynn (1956) notes that employee use of corporate computer resources poses liability risks and jeopardizes security and that no organization can afford to engage in electronic communications and e-commerce unprepared.

A key attribute of cyberspace is that it is a virtual rather than a real place. Thus, a growing share of social and commercial electronic activity does not have a national physical location (Cozel (1997)), raising a key question of whether legislatures can

even set national policies or coordinate international policies. Similarly, Berners-Lee (2000) explains that key criterion of <u>Trademark law</u> – separation in location or market – does not work for World-Wide Web <u>domain names</u> because the Internet crosses all geographic boundaries and has no concept of a market area.

From an organizational perspective, Simard (2000) states that "if traditional policies are applied directly [to a digital environment], the <u>Canadian Forest Service</u> could become marginalized in a dynamic knowledge-based economy." Consequently, the CFS developed and implemented an Access to Knowledge Policy that "fosters the migration of the CFS towards providing free, open access to its knowledge assets, while recognizing the need for cost recovery and the need to impose restrictions on access in some cases" (Simard, 2005). The policy comprises a framework of objectives, guiding principles, staff responsibilities, and policy directives. The directives include: ownership and use; roles, rights, and responsibilities; levels of access and accessibility; service to clients; and cost of access.