



iOn
intelligent Online network

Foreword

There is little doubt that we have entered the knowledge economy where what organizations, institutions and communities know is becoming more important than the traditional sources of economic power – capital, land, plant and labor – which they command.

The value attributed by stock markets to companies in sectors such as software development and biotechnology far outweighs their tangible assets. Even in industries as traditional as manufacturing, companies are obtaining competitive advantage through technological know-how, product design skills, problem-solving expertise, personal creativity and the ability to innovate. Knowledge management is the discipline of capturing these knowledge-based competencies, storing and disseminating them for the benefit of the organization as a whole.

Much has been written about knowledge management. We have tried to utilize the power of Knowledge hidden amongst the members of a community, to provide a comprehensive tool for the development of Knowledge based economy. By harnessing the information present amongst its members we have tried to develop a framework for the growth of Knowledge powered communities.

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Contents

Foreword

1. Knowledge Management
2. Community
3. Information- Anytime, anywhere
4. iOn
 - Design
 - Architecture
 - Details
 - Sex
 - Lies
 - Videotape

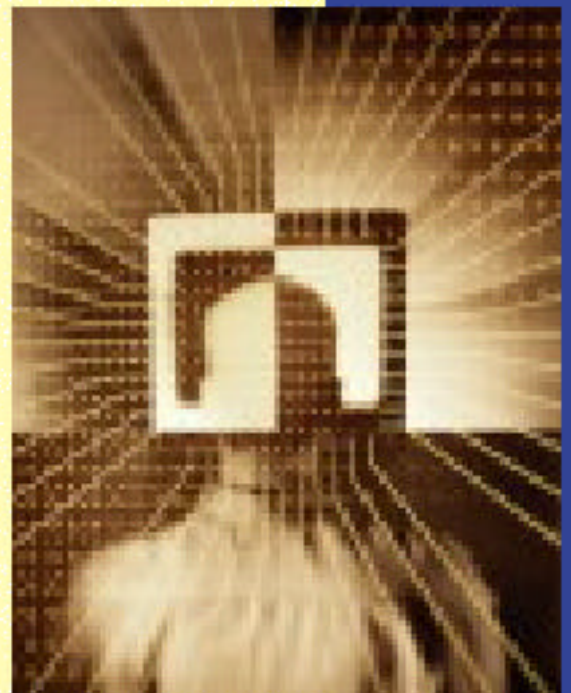
iOn

...*intelligent*

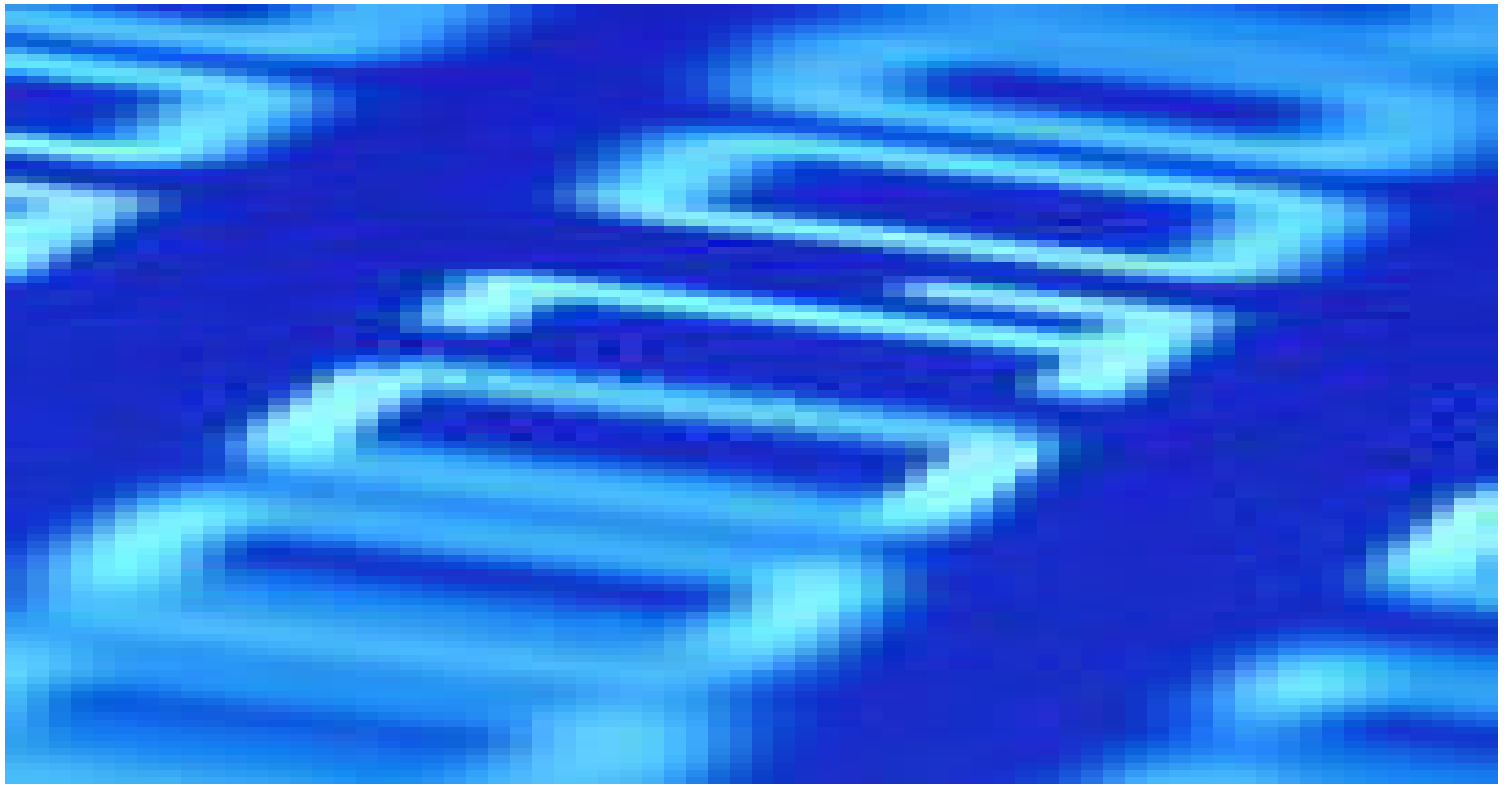
...*Online*

...*network*

Knowledge Management



- *Managing the Unknowable-*

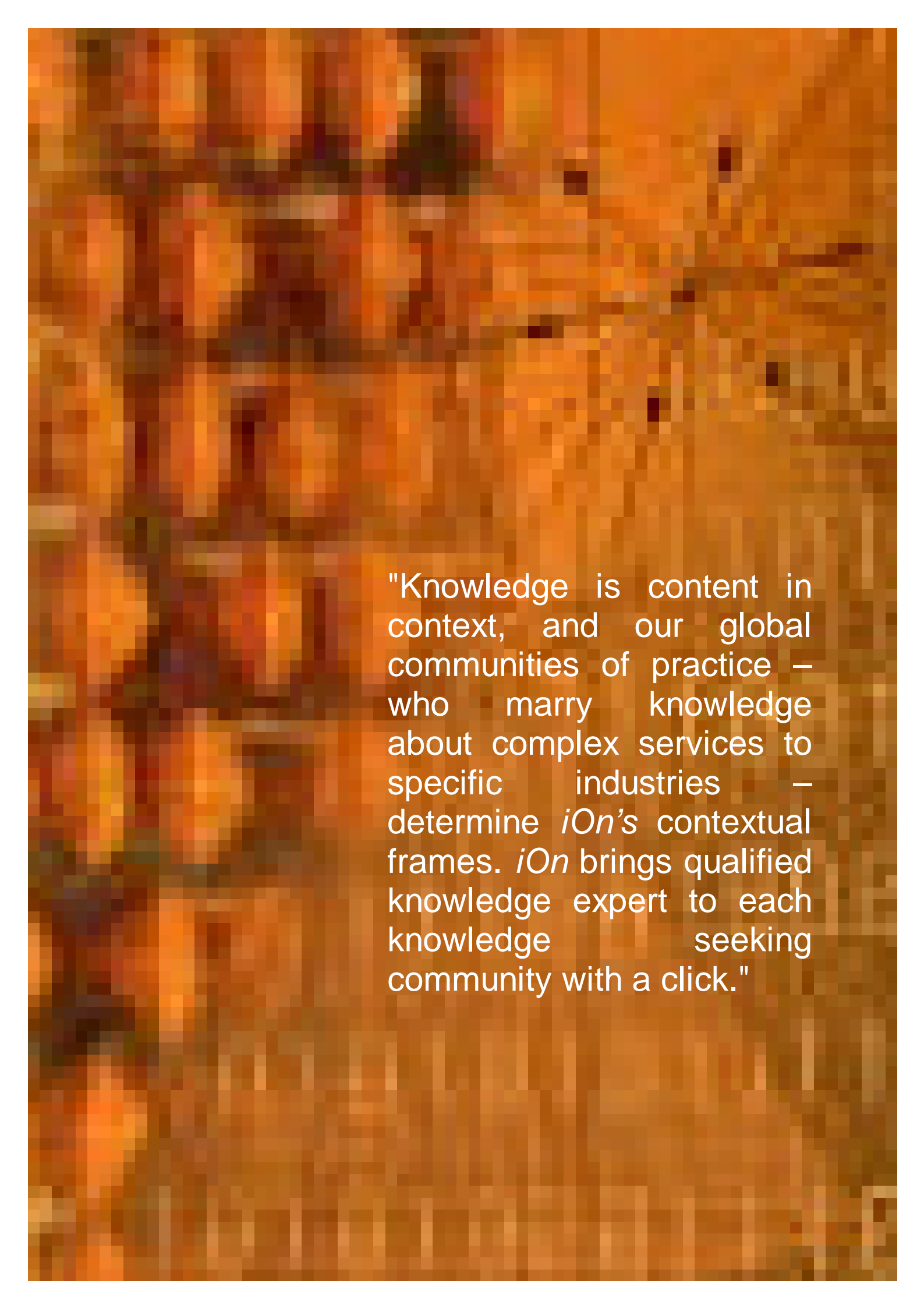


More than 50 years ago, at a time when modern computers didn't yet exist, George Vannevar Bush wrote about a multimedia digital library containing human collective knowledge, and filled with "trails" linking materials of the same topic [44]. At the end of World War II, Vannevar urged scientists to build such a knowledge store and make it useful, continuously extendible and more importantly, accessible for consultation. Today, the closest to the materialization of Vannevar's dream is the World-Wide-Web hypertext and multimedia document collection. However, the ease of use and accessibility of the knowledge described by Vannevar is yet to

be realized. Since the 1960s, extensive research has been accomplished in the information retrieval field, and free-text search was finally adopted by many text repository systems in the late 1980s. The advent of the World-Wide-Web in the 1990s helped text search become routine as millions of users use search engines daily to pinpoint resources on the Internet. However, resource discovery on the Internet is still frustrating and sometimes even useless when simple keyword searches can convey hundreds of thousands of documents as results. The dramatic drop in the price of storage devices and the advent of the World-Wide Web, an unprecedented information

disseminator, are promoting the proliferation of massive collections of multimedia resources, either text documents, or images, or other media. Never has it been easier than with the World-Wide-Web to publish all manners of digital documents and make them almost instantly available to everyone. However, given the monumental size of the collection, availability does not necessarily indicate universal accessibility or even visibility of the published artifacts. It is

"Ask the experienced rather than the learned." -
Arabic proverb



"Knowledge is content in context, and our global communities of practice — who marry knowledge about complex services to specific industries — determine *iOn's* contextual frames. *iOn* brings qualified knowledge expert to each knowledge seeking community with a click."

an extremely difficult task to find pertinent documents (text, images, or other media) in this agglomerate. Finding relevant digital documents in a large collection is known as Resource Discovery. In a recent report on the future of database research written by prominent authorities in database research, it has been foretold that the Web and other on-line data stores will hold the majority of published human knowledge. Despite the richness of this massive knowledge collection, the report underlines the challenges still ahead for the research community to produce methods for sorting out through this collection. The authors comment on the lack of considerable contribution from the database research community in the development of striking methods for the management and effective exploitation of the resources available on the Web.

Across a wide variety of fields, data are being collected and accumulated at a dramatic pace. There is an urgent need for a new generation of computational techniques and tools to assist humans in extracting useful information



(Knowledge) from the rapidly growing volumes of data, these tools and techniques are the subject of the emerging field of Knowledge Management and Information sharing. We view this Knowledge Management and Information Sharing process as a set of various *activities* and *interfaces* for making sense of the data. At the core of this process is the application of complex data-processing methods to allow efficient indexing of information. These *activities* aim at providing proficient methods of access, storage, classification, searching and sorting of the underlying information.

"Experience is often what you get when you were expecting something else." - *Author unknown*

iOn

...*i*ntelligent

...*O*nline

...*n*etwork

Community



*interaction and knowledge sharing across
geographic and temporal barriers*

‘The successful marketspace will invite consumers into a communal experience and let them meet people as well as buy products...it will make shopping a transaction involving not just goods and services but also experience. It will not forsake community for commerce’.
Rayport and Sviokla, Harvard.

On-line community is seen as a means of intensifying and advancing existing trends in mass customization and narrowcasting. Thus in describing the evolutionary paths of on-line community development, they argue that the highest stage of development is the 'infomediary', where there is perfect symmetry between user interests, profiles, and the interests of vendors. This is where the most sophisticated mass customization can exist, where transaction costs are negligible, geography is insignificant, intermediaries disappear, where consumers are fully informed and can maximize the value of their personal information. In short, this is the 'frictionless capitalism' described by Bill Gates in *The Road Ahead*. At this point, we stand at the

threshold of the perfect market and the fully realized individual who is a 'market segment of one'. The iOn interpenetrates the community, communication, commerce and marketing in such a harmonious manner that each of them are practically indistinguishable.

The uses of on-line community in contemporary models of Internet commerce suggest the need for critical work by academics that deals with the complex specifics of discourses, practices, institutions and economics that shape the Internet. Too much academic work ignores the most important forces shaping on-line culture, leaves large areas of debate uncontested and doesn't really speak to groups actively involved in new media who could constitute potential

allies. We at iOn believe that corporate sponsored communities and their representation in models of e-commerce open up a number of challenges and opportunities for academics as teachers, knowledge producers and 'specific intellectuals'.

iOn is a project commitment to constructing information technologies that democratize on-line community formation and knowledge production utilizing the expertise of the community members. It is an ambition, which seek means of bridging the resources produced by both groups. After all, the World Wide Web, along with many other Internet protocols, was created by academics who needed tools for collaboration and communication within dispersed disciplinary

communities. It seems fitting that academics should work to develop these technologies in ways that benefit a broader constituency of people

Advantages:

Member generated as implemented in iOn is particularly valuable for several reasons:

- It attracts new members
- The investment people make in their writings and relationships foster strong member loyalty. This inhibits what the authors call 'churning' (or to use the terms commonly employed in business texts, it raises 'switching costs' and enables 'lock-in'.)
- It enables more subtle ways of interweaving marketing and advertising, media form and content, communication and community formation than exist in traditional mass media.
- It allows for sophisticated forms of customization, which in turn creates another barrier to people switching to a different virtual community.
- It provides detailed and inexpensive demographic information on people's interests, habits, and buying practices, and reduces vendor search costs.





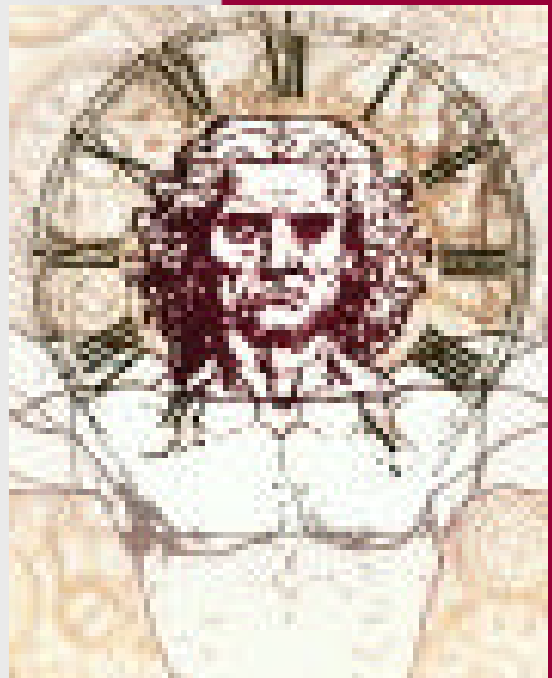
Internet is
so big, so
powerful
and
pointless
that for
some
people it is
a complete
substitute
for life.

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*Andrew
Brown*



***Knowledge:
Anytime
Anywhere***





Access to Knowledge and information online, 24 hrs a day from anywhere

In bringing experts in diverse fields to the knowledge seekers; the iOn acts as a hub for the congregation of knowledge workers. The award winning architecture ensures multiple access mechanisms making the system easily accessible and intuitive to use. The iOn provides users with a platform to conveniently access its invaluable Knowledgebase from anywhere in the world around the clock and FREE of cost.

The system, having been implemented worldwide, guarantees the presence of experts to handle queries posted by knowledge seekers. The intelligence in the architecture then

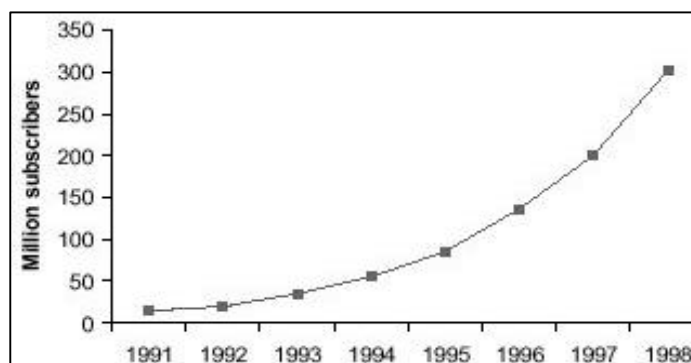
pushes the queries from the *seekers* to retrieve the solution in the minimal amount of time. The beauty of the system lies in the fact that as more and more solutions are retrieved from the experts, these are indexed and classified into an invaluable information repository to enable the system to handle future queries automatically, even in the absence of the experts. This ensures solutions to users' queries around the clock, irrespective of geographical location or time zone.

The system guarantees mobility in operation by providing an interface through the users' mobile device such as the ubiquitous mobile phone and Personal Digital Assistant. These mobile devices are highly usable devices. It is always at

hand, immediately ready to use without time-consuming boot sequences, and readily connected – free of typically desktop computer hassles such as modem configurations and messy wires! The usability and acceptance of mobile devices is clearly illustrated by their penetration of in all age, social and professional segments. For example, research shows that the total number of mobile phone users worldwide is over 300 million.

This is double the number of Internet users, which itself is a figure that has been growing exponentially. It is estimated that in the year 2005 there will be about 1 billion mobile phone subscribers worldwide. It is evident that a mobile device in every pocket is a realizable prospect in the foreseeable future. It is fast becoming a preferred method of communication: an integral part of everyday life.

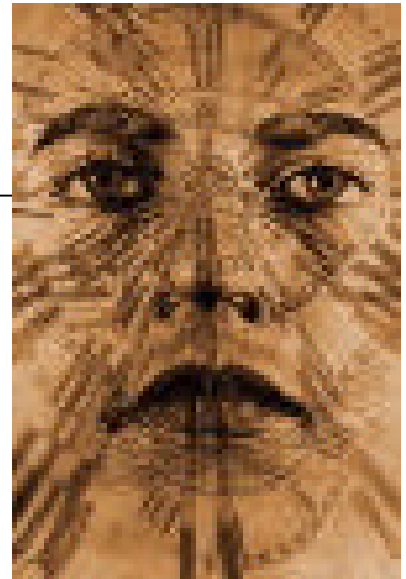
Keeping this in mind, the iOn is the result of a solution crafted to



enable efficient and rapid growth of an online community, with access to the information they need anytime, anywhere. The iOn blends the latest technologies, evoking a mechanism to attract more users to the system, in turn ensuring a steady growth of the community.

This translates into the iOn becoming the de facto choice for knowledge seekers online, a one-stop destination for the solution to queries, and to empower the dissemination of knowledge.

In addition to the Mobile Media Mode (MMM) interface, the iOn incorporates the more traditional client-server interface to allow community members to connect directly from their desktop and access the invaluable resources of the system with a single click. The system also incorporates a World Wide Web (WWW) interface allowing community members to access the system through any web browser making it platform independent and hence ceases to limit access to the system from any specific operating system.



The iOn specification pulls together existing technologies and defines new standards to provide subscribers with:

- Fast, efficient access to essential information from a wireless transceiver
- Peace of mind that all transactions are conducted are completely secure
- An easy to use interface metaphor that meets the needs of the user within the restrictions of a constrained network and device.

iOn
...intelligent
...Online
...network



- *Empowering distributed Knowledge* -



With the advent of Internet revolution, there has been a massive increase of information available on electronic networks. This profusion of resources on the World-Wide-Web gave rise to considerable interest in the development of virtual communities. Legacy information retrieval techniques have been applied to the information and knowledge collection on the Internet, and panoply of search engines and tools have been proposed and implemented. However, the effectiveness of these tools is not satisfactory. None of them is capable of discovering knowledge from the Internet. The Web is still evolving at an alarming rate. In a recent report on the future of database research known as the Asilomar Report, it has been predicted that in ten years from now, the majority of human information will be available on the World-Wide-Web.

At the same time, our economy is slowly, but surely changing from a product-based economy to a knowledge-based economy. Knowledge Management has become the biggest focus of organizations,

governments and society at large. In his paper 'On the management of Knowledge', Karl M. Wig defines Knowledge as the insights, understandings, and practical know-how that all individuals possess - the fundamental resource needed to function intelligently. Over time, knowledge is also manifested in other forms such as books, technology, practices, and traditions - within organizations and society in general. These transformations result in cumulated expertise and, when used appropriately, increased effectiveness. Knowledge is one, if not the principal factor that makes personal, organizational, and societal intelligent behavior possible. This huge potential for knowledge management and its significant impact on society leads, as a logical step, to our development of an online intelligent knowledge-sharing network.

By designing and implementing an intelligent online network, we are spearheading the formation of a network of knowledgeable people not only in Singapore, but all inter-networked parts of the world. The

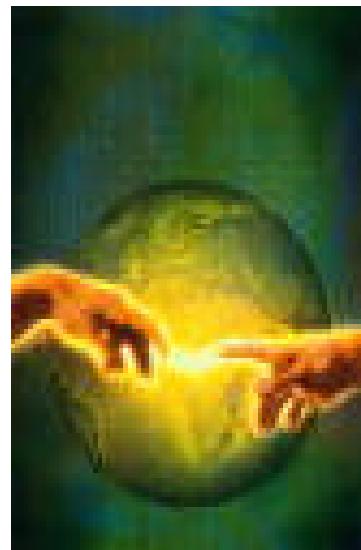
driving force is to promote the symbiotic sharing of knowledge between experts and novices by capitalizing on the widespread usage and extent of networks.

Thus the network is at the crossroads of these emerging paradigms, bridging the gap between the effective consolidation and provision of knowledge using the latest state-of-art technologies. Thus, the motivation is to create a comprehensive knowledge base, and a forum where there exists a quick, easy and efficient sharing of knowledge between users. At the same time, it blends the various state-of-art communication infrastructure technologies, advanced networking and next generation protocols resulting in a comprehensive distributed knowledge-base application.

Method for Knowledge Sharing and satisfaction of Individual and Corporate need

Keeping the requirement of Knowledge Sharing in Corporations as well as individual in mind the system aims at development of a unique framework to gather information from *knowledge experts* and provide this information to *knowledge seekers*. Its should be mentioned here that *Knowledge Seekers* refer to the group of people or individual who use the system to obtain information or a solution while *Knowledge experts* refer to the group of competent people or users who provide the information and the solution to the Knowledge Seekers. The framework operates as a junction for the union of Knowledge Seekers and Knowledge experts thus being a hub for Information Sharing and indexing in a unique method. The grandeur of the framework is the fact that the process of Information gathering results in the gradual development of the Knowledge-base which is used as a reference for future queries and information retrieval, thus decreasing the requirement for online

Knowledge experts. The system also encapsulates a multi-tier backend-processing system providing valuable Natural Language based query and efficient indexing and classification of information in the central data repository which is not only transparent to the user but also provide faster data query and retrieval mechanism. The artificial intelligence embedded into the system in form of different algorithms developed for data retrieval from the central repository and also for the dispatch of *Mobile agents* to the different Knowledge Experts in search of information shows the paramount efficiency of the system. These mechanism and framework for the union of Knowledge Expert and Knowledge seekers have been detailed in the later part of this document.



*Bridging
Knowledge experts
and the Knowledge
seekers.*

iOn
...intelligent
...Online
...network



