CHAPTER 2

REVIEW OF RELATED LITERATURE
2.1 Introduction

The review of literature is an important exercise of any research work. It is an essential component of the present investigation, which gives necessary input to the researcher to design the research study on a selected topic. The present chapter begins with an overview of previous researches carried out pertinent to the present study and followed by general theoretical concept on "Information System and Services of Fashion Design Technology with special reference to India".

The efforts to identify the study conducted at national and international level bear little fruits, as there is no substantial literature available in the area of fashion design technology.

The literature search covers LISA, Emerald, ProQuest, and Ebsco databases along with various research papers published in learned journals, and also vast amount of literature published in various subject areas other than Fashion Design Technology (FDT). Keeping in view the available published literature an attempt is made to review and co-relate with the study. The entire literature search is divided in to five major facets and the literature is classified and rendered accordingly. The five facets are

1. National and International Scenario on Fashion Design Information System Study;
2. Information System and Services on other subject areas;
3. Information Technology Application for Library Services;
4. Infrastructure facility for Information System and Services, and;

5. Information System and Access to Databases.

2.1.1 National and International Scenario on Fashion Design Information System Study

Frings, Gini Stephens (1996)\textsuperscript{1} mentioned in his study on "Fashion Research and Analysis" that every designers and merchandisers in the fashion industry involved with fashion research before work on each new line or collections begins. Market research consultants also study and report on demographics and consumer buying habits. Design services and fashion publications also need experts in fashion research and forecasting every merchandises category. The study discusses the important role research plays in fashion and fashion related activities. The study concludes with listing the design resources like historic and ethnic costumes, folk influences, vintage clothing shops, museums, libraries and bookstores, the arts, the fabrics and travels.

Saptharishi, L.V (1998)\textsuperscript{2} presented to the plenary inaugural session during formation of ‘International Foundation of Fashion Technology Institutes’ (IFFTI) recognised the role the Resource Centres of NIFT played in institutional training programmes, and also mentioned in his address that the information centres supports the industry and its entrepreneurs. He states that the integral collections of various information sources are of immense value for research and development activities of the institute and the industry. The author enlisted the future
programmes of the resource centres in the light of the changing technological advancement.

"Fashion and Beyond" Volume 2, issue no.3 and 4 (2004)\(^3\) an in-house publication of NIFT used the concept "consortia" a unique concept developed for Dsyn @ 04, at a design meet of the world held at NIFT New Delhi. In this meet the companies of the world were invited to participate as a part of Consortium. There were around 165 teams each comprising designers, a textile companies, apparel manufacturers and many working together first time in the history of Fashion Designing Technology. It was a cluster of all related segments of the fashion designing discussed and deliberated the value they can add if they form the co-ordination in each stages in development of fashion business in the era of information technology.

IFFTI (2004)\(^4\) 6\(^{th}\) annual conference discussed the "Integration of Value Chain: Destination India". Fashion and Beyond published that the during the changed scenario of information technology, the integration of fashion and fashion related activities can yield huge profits to the participating companies and the value to be propagated without confining to the geographical boundaries.

2.1.2 Allied Information System and Services

Schneider (1977)\(^5\) describes the establishment of the International Cancer Research Data Bank Program in 1974. A centralised system was chosen to ensure speedy receipt and dissemination with minimal disturbances. Major program components include: Special
Listings of Current Cancer Research; the on-line CANCER LINE service and its data bases; 3 cancer information dissemination and analysis centres producing CANCER GRAMS (a current awareness material for cancer treatment).

Stephens (1978)\(^6\) presents in his study that, an information system involving patient-retained records in Botswana. The 12-month project leading up to the development of the information system was designed to minimise record keeping procedures and maximise usable data generation. 3 major constraints affected system design: (1) almost all primary care is delivered by registered nurses who are supported by paramedical workers and supervisory regional health teams; (2) services are predominantly rural in areas with no telecommunications and inadequate road transport; and (3) the population itself is very mobile.

Slapnicka (1979)\(^7\) discussed in his paper on COSTEI: Central Office for Scientific, Technical and Economic Information and the State Technical Library in Prague, appointed Czech national agency for the implementation of the International Specialized Information System for Scientific Research Works. In 1978, they conducted a survey to explore the use of the system during the previous 5 years. The results of the survey, reflecting the opinions of the largest Czechoslovak centres are presented, including views on the present state of the services which provide information on registered scientific research and development reports of both member and non-member countries, and on the facilities and technical equipment available to information centres in Czechoslovakia. The survey has underlined the necessity of further close
cooperation of users with the branch information centres and the appointed national agency.

Oswitch (1979) developed a family of models during one year study of the impact of on-line information services on UK library and information systems, is used to introduce information system dynamics; a computer-based simulation technique for exploring the structure and processes of complex social systems. Modelling information system dynamics should improve communication between planners, librarians, information producers and users and hence result in more effective information services.

Uchida (1979) presented the Japan Information Centre of Science and Technology (JICST) that the information processing system consists of the data base production system, authority file management system, bibliographic retrieval system, and printed issue compiling system. The bibliographic retrieval system, based on the JICST Online Information System (JOIS-1) has been available through leased lines since 1976 and also through a dial-up line. It covers the following data bases: the JICST files, CA Condensates, MEDLARS and TOXLINE. The on-line output in Japanese kanji is also available. A JOIS-11 system is being developed.

Levinson (1979) cautioned that access to health care services may prove to be a life and death situation for clients, and especially for the poor. Addresses access and linkage between health and social service agencies. Illustrations are drawn from experiences of the Delphi Information and Referral Project.
Romoneko and Todeschini (1980) describes the development of the International Nuclear Information System (INIS) bibliographic data base covering the world's nuclear science literature; the network arrangements by which the data base and associated services are made available; and the consequences of the system's decentralised operating philosophy.

Taylor (1982) present his view of a team approach, is used to design an information and referral system that brings together citizens with problem/needs and the providers of social services who are able to give assistance. The human system design for the information referral function was initiated first. The software system designs being developed from the concepts and elements of the human system design.

Dunning (1982) outlines the INSIS: Institutional Integrated Services Information System programme of the European Community which aims to endow the staff of the Community Institutions and Member State legislative and executive bodies with advanced information and communications systems, and to encourage the community information industry and the telecommunications administrations to introduce enhanced and new equipment and services. A brief history of INSIS is given, and the key concepts underlying INSIS as well as a selection of the main results from studies are presented. Some pilot projects, which are underway or under consideration, are described in outline. Emphasis is placed on the need to introduce information systems which are acceptable to the user, and on the vital significance of
standards for the achievement of a common market with concomitant user and supplier benefits.

Penna (1982)\textsuperscript{14} discusses the origin, establishment, and development of the National System of Library and Information Services in Venezuela, which is the First Latin American country to have made the political, administrative, and financial decisions necessary to create such a system. Describes the work of its various components, which are: the system of Library Services and Humanistic Information, which includes the National Library, Public Libraries, and School Libraries; the System of Scientific and Technological Information Services, which includes University Libraries and Special Libraries; the System of Archives; and the System of Statistics and Data Processing.

Jakubicek (1982)\textsuperscript{15} presents bibliographical and information services (BIS), although considered a valuable part of library activities in regions, are not promoted systematically in Czechoslovakia. Among the reasons for the lack of their provision is inadequately qualified staff, finances and inadequate cooperation within the library network. For the realisation of the concept of BIS as system within any one region it would be necessary to concentrate on the following areas: management of the BIS system; the provision of adequate tools (such as lists of information sources, reference material and catalogues); survey of all types of services provided at present; establishment of the material and technical needs; promotion of the services and activities; and division of the tasks of building the BIS system into stages.
Vlasak (1985) surveys the development and present state of the building up of on-line information services based on cooperation of the member states of the International Centre for Scientific and Technical Information (ICSTI) in Moscow. The main aim of this system is mutual accessibility of databases between individual ICSTI member states. Czechoslovakia has played a prominent role both in the original project and in further expert work of the last two years.

Kalousek and Vlasak (1985) gives a critical evaluation of work done hitherto in this field, concerning research, development and introduction of on-line systems applied in the technical and technological node of the system, the so called Central Technological base. Outlines the main principles, which govern the provision of these services.

Solov'eva and Idrisova (1985) mention the main characteristic of the current development of library and information services is centralisation, the main aim of which is to increase the effectiveness of all material resources, to improve the standard of the services provided and to decrease duplication of library tasks. Reports on the current state of centralisation of the USSR network of special libraries and on the development of an Automatic State System of Scientific and Technical Information (ASSSTI), which is supposed to incorporate 78 already available automatic information systems. The future development of the State System of Scientific and Technical Information will be characterised by a complex centralisation process including all basic trends of library work as opposed to the present centralisation of individual technological processes.
Lantz (1986) highlights that for number of years Birmingham Polytechnic Library has been producing regular information on the effectiveness of its Technical Services Section. Until recently the data were collected and analysed manually, but now analyses are carried out using a combination of microcomputers and the Polytechnic's minicomputers. With the advent of automated systems, there is considerable demand for the development of management information systems to provide assistance in planning and decision-making. Examines a relatively sophisticated manual system, explores the deficiencies of the present system and makes suggestions for the future development of fully automated management information systems within libraries.

Rulf (1987) describe the development of information systems in all branches of the national economy, as called for by Directive No 21/85, must be based on consideration of the specific features of the individual economy branches. The local services branch of the national economy (i.e. local manufacturing cooperatives and service establishments) has a specific organisational structure because these establishments report directly to local authorities. Discusses the work of the Information Centre of the Research Institute of the Local Services Economy which employs 16 staff and which has a stock of 13,000 items and 300 periodicals. Among the services provided by the centre are: answering of enquiries, compilation of bibliographies, and the commissioning.

Rosenbaum (1987) say that in the period up to 1990, three on-line data bank centres are being developed at the Zentralinstitut fur Information und Dokumentation (Central Institute of Information and
Documentation) in Berlin, in Frankfurt/Order and in Dresden. A terminal network is being constructed with about 1,000 access points in factory libraries and institutes. East Germany has about 40 non-bibliographic and 120 bibliographic databases. The data bank centres will provide access to international services for data banks in large libraries and factories and for local and personal data banks. The network will provide information, analysis, global comparisons, Dialogue services, machine translation, indexing and library processes. Many pilot projects on technological improvements are carried out in cooperation with other common countries.

Yaikova (1987)\textsuperscript{22} discusses the development of the Integrated System of Scientific and Technical Agricultural Information which includes 929 libraries active in: farming (684 units); food industry (98); dairy industry (32); farm engineering (14) and technical services (101). Outlines the main responsibilities of the Central Scientific and Technical Library of the Lenin Order All-Union Academy of Agricultural Sciences which include the development of the integrated information stock (including domestic as well as foreign publications) and the setting up of an integrated automatic information database. Explains the role, within the system of libraries of research institutes and of agricultural libraries which have a total stock of 98.3 million items and which serve 2.8 million readers who present 102.3 million loan requests per year. Describes the coordination of the system, its further development and the information services available.

Ramachndran (1989)\textsuperscript{23} Surveys the institutions in India offering patent information services; gives a list of authorities receiving
patent office publications free of charge and describes the Indian patent information system in terms of its collection of primary and secondary sources, publications, information services.

Haihua and Others (1989)\textsuperscript{24} contended that the Chinese Academy of Sciences has 140 research institutes of basic sciences and high-tech development with 50,000 scientists and 30,000 support staff. The information system of the academy comprises one documentation and information centre in Beijing, 4 regional information centres and libraries, 140 libraries and information divisions of research institutes, 10 regional information ordination commissions and 17 information networks of professional disciplines through the Chinese People's Republic. This system comprises both library and information centre functions and bears the responsibility of collection, storage, processing and provision of information. Describes the structure and services of the system and how new information technology is used to provide information access.

Haarala (1991)\textsuperscript{25} mention the contradiction between the unfavourable objective conditions in Finland regarding population, language, distances etc., and the country's economic and social ambitions can be resolved by the adoption of up-to-date technological means of computers and telecommunication, in library and information as in other fields. The country's involvement in international projects implies efficient cooperation and division of labour among Finnish Information Institutions. The most important participants in international and national cooperation on information-related issues and their achievements are discussed.
Miller (1991)\textsuperscript{26} reports that M/s NOTIS Systems, Inc. has developed a product: the Multiple Database Access System (MDAS), that allows a library to mount databases on a local computer. Databases can be searched in exactly the same manner as the NOTIS on-line public access catalogue (OPAC): by author; title; subject; and/or keyword with all Boolean and positional operators. The product also automatically links database records to the library's holdings so that the end user immediately knows whether or not the library with the ability to offer any library user access to commercial data bases at no direct charge and (for the library) at a fixed cost. Most sites update monthly. Data bases currently available for the use with MDAS include MEDLINE, ERIC, Compendex Plus, the H.W. Wilson indexes, ABIINFORM, PsyclInfo, Current Contents, and Information Access Indexes will become available according to demand.

Matousova (1992)\textsuperscript{27} presents the view of information services to the general public used to be provided by the former Library Network and the System of Scientific, Technical and Economic Information. In order to bring the these services under the management of the state administrative bodies the government commission of the Czech Republic for the state information system has set up a public Information Services Working Group (ISWG) consisting of representatives of leading information institutions, including the National Library, National Information Centre, State Archives, and the State Technical Library. Discusses the work of the ISWG the main objective of which is to develop a new concept of public information services within the framework of the State Information System (SIM).
Komolafe (1994)\textsuperscript{28} mentioned that World Health Organization review of the literature published in 1990 fails to mention Nigeria or library services. Demonstrates, using Nigeria a case study, that effective library and information services are central to any efficient health care delivery system. Reviews the available Nigerian literature on the subject emphasizing tertiary level training and research. Describes ongoing efforts at all levels to evolve a National Health Management Information System. Argues that practising librarians need to update and upgrade their skills and knowledge respectively in order to make them active and effective participants in the drive to ensure good health for all Nigerians.

Parkhurst (1994)\textsuperscript{29} argues the contribution to an issue devoted to Librarians on the Internet: impact on reference services. Describes how the libraries of the 6 campuses of the University and Community College System of Nevada (UCCSN), in collaboration with UCCSN System Computing Services, have developed and implemented a service that provides local and remote networked information resources to faculty, students, and citizens of Nevada through a single point of access. The service, called the Nevada Academic Libraries Information System (NALIS), uses the existing telecommunications infrastructure on the campuses and builds on the library automation programmes already present in the libraries.

White and Dodge (1996)\textsuperscript{30} undertaken a research project, under way at the University of Wales, College of Cardiff, into constructing a comprehensive database on the delivery of public services in Wales. The database is specially referenced at appropriate scales and
implemented in a geographic information system. Gives an overview of the project by structuring discussion around the general data model adopted. Discusses principal data entities, highlighting the techniques employed in the collection, organization and analysis of the many data layers created during the project.

Shtarkov (1996) described in his study that due to the result of the current economic reform, living conditions in the individual regions of Russia vary, considerably. Consequently, it has become essential to set up an effective system of information and analytical services to support the decision-making processes of regional government organs. Discusses in detail: the main objectives of the system; its characteristics, structure and running; the types of information to be collected, stored and disseminated; and the principles of the actual setting up process.

Zakharov (1996) viewed that the Library of the Russian Academy of Sciences, which recognises fully the importance of stock conservation and preservation, has decided to set up database of literature devoted to these subject areas. Discusses the setting upon the automated, full text database which consist of identification of information sources; a pilot feasibility study of the database software; data input in Russian and English; thesaurus development; and development of an indexing policy.

Jakac-Bizjak (1997) presented a paper in the IFLA conference held in Ljubljana, April 1997, entitled 'the role of libraries in economic development'. The National and University Library in Slovenia will take the initiative in creating business information services and
systems, meeting the information needs of small and medium sized companies which happen to be the most vital part of national economies, at least in small countries. A three level plan has been drawn up: identification of business information needs through a user survey; cooperation with institutions, furthering the development of the previously mentioned companies; and co-operation with libraries (public and academic) as well as with private information providers.

Venkatappaiah (1999) stresses the need to formulate a policy for public library services in India, in view of recent developments emerging in the librarianship field. Presents a draft of such a state policy covering various areas of service, support to literacy and education, preservation of cultural heritage, reading materials, human resources, finances, private and aided libraries, comprehensive library legislation and restructuring of existing library acts.

Arnold, Vicky and others (2000) presented that the accounting profession enters new assurance markets, many decisions as to the best manner in which such services can be provided must be addressed. For instance, the traditional audit/attest-reporting model may not provide adequate information to justify the cost of assurance services in some situations. Alternatively, potential clients may turn to other assurance providers who are willing to provide better quality services and/or more informative assurance reporting. The study examines the impact of a two-tier reporting model on the market demand for assurance services on software product reliability. One tier uses the traditional binary report common with audit/attest services where a standard report notes whether a software product achieves a minimum standard, while the
other tier of reporting provides for a graded assessment of multiple levels of quality. The results indicate that when a graded report that differentiates high-quality vendors from moderate- or low-quality vendors is available (1) high-quality vendors are willing to pay for the report, (2) buyers are willing to pay a premium for the reduced risk associated with a high-quality opinion, and (3) high-quality vendors are able to drive other vendors with inferior products out of the market. When only a binary report is available, the market is more confused and chaotic. Vendors are not able to signal quality clearly; the high-quality vendor is not able to dominate the market; there is less vendor demand tiff the assurance report; buyers are unable to determine their desired product and make less total profit. These results have several implications for the accounting profession and researchers as they work on the design of new assurance service models.

O'Donnell, Ed. And others (2000) mentioned in study that both the evolution toward online continuous auditing and new assurance services for information systems reliability have helped fuel changes in the audit/attest process. These changes have already been of concern in dealing with large organizations using complex information systems to process their accounting and business information. As a result, these changes have necessitated a change in focus from traditional accounting control processes to increasingly complex information-systems-based control processes for advanced technology applications. With the resulting increased complexity in the internal control assessment process, the move toward group decision-making in the major accountancy firms is expected to accelerate-particularly for the control-assessment process. The research documented in this paper focuses on the impact of group
decision making on decision quality within the internal control-assessment process for information systems environments. The results indicate that improved decision quality does result from group decision-making and that these improvements arise even if group members do much of the initial assessment work individually before the group convenes for face-to-face discussions. The use of preliminary individual assessments does, however, appear to result in a common information-sampling bias. This is the phenomenon whereby group decisions become focused on information known by most or all group members, and information known by only one group member has a higher probability of not being introduced and recognized by the group.

Carnaghan, Carla (2000) expresses his opinion on the paper "An analysis of the group dynamics surrounding internal control assessment in information systems audit and assurance domains," by E. O'Donnell, V. Arnold and S. G. Sutton. The study makes a valuable contribution to an issue that has significance for the efficient and effective provision of information systems assurance services. It has been stated that a part of the rationale for the study as deriving from the fact that "the increased complexity of the information systems internal control evaluation dictates that decision making be made by groups. Presumably part of the reason groups are utilized is that each member of the group can provide some particular expertise that is not possessed by others in the group. An alternative explanation for the use of groups in this context is that large tasks can be divided into subtasks, which are then delegated to individual group members. In either case, group members do not contribute the same information to the decision being made. The group members in the study appear to have roughly equivalent domain
knowledge and are provided the same knowledge of the problem. As a consequence, a key aspect of the setting of interest is not replicated in the experiment. Given, there were no apparent time constraints, it might have been interesting to try to measure the extent to which the group decision-making time was changed by having individuals make decisions first before participating in the group process in comparison to the traditional group decision process.

Menon, Nirup M. and others (2000)\textsuperscript{38} a research paper analyses on the impact of information technology (IT) in a healthcare setting using longitudinal sample of hospital data from 1976 to 1994. The writers classify production inputs into labour and capital categories. Capital is classified into three components-medical IT capitals, medical capital, and IT capital-and labour is classified into two components, medical labour and IT labour. Results provide evidence that IT contributes positively to the production of services in the healthcare industry.

Adman, Peter and Warren, Lorraine (2000)\textsuperscript{39} examines a practical adaptation of the ETHICS methodology used in redesigning an information technology (IT) support service in an academic setting. The purpose of the project was to design appropriate organizational structures and functions and an accompanying information system (IS), to increase the effectiveness of the existing service. A participative sociotechnical approach was adopted for the entire design process which was carried out by the practitioners themselves. The staff’s views were elicited during informal participatory group sessions as well as in one-to-one informal discussions. While ETHICS was the overall guiding methodology for the
design, quick ethics was used as a complementary means of analysing the requirements of the new information system. This paper describes the methodology used and the design process; it reflects on the adaptation and its match with the ETHICS methodology, exploring the claimed association with the viable systems methodology and concludes with suggestions for further research.

Smith, Stephen A. and Agrawal, Narendra (2000)\textsuperscript{40} points out that customers for retail merchandise can often be satisfied with one of several items. Accounting for demand substitution in defining customer service influences the choice of items to stock and the optimal inventory level for each item stocked. Further, when certain items are not stocked, the resulting substitutions increase the demand for other items, which also affects the optimal stock levels. In this paper, they develop a probabilistic demand model for items in an assortment that captures the effects of substitution and a methodology for selecting item inventory levels so as to maximize total expected profit, subject to given resource constraints. Illustrative examples are solved to provide insights concerning the behaviour of the optimal inventory policies, using the negative binomial demand distribution, which has performed well in fitting retail sales data.

Bordoni and Colagrassi (2000)\textsuperscript{41} proposes a unified library network and information system based on innovative technologies for the distribution of the largest number of advanced services to an increasing number of users. Explains the functions which characterise a unified network, describing the different levels of interoperability and application co-operation services needed to realise the library's unified information
system. Considers the basic elements of the network architecture from the functional point of view taking them from the distribution system's architectures. Discusses some of the advanced systems comprising the library's unified network, including the information filtering system, the digital library, and distance learning and educational services.

Lyytinen, Kalle and Youngjin Yoo (2002) explored that a nomadic information environment is a heterogeneous assemblage of interconnected technological, and social, and organizational elements that enable the physical and social mobility of computing and communication services between organizational actors both within and across organizational borders. Authors analyse such environments based on their prevalent features of mobility, digital convergence, and mass scale, along with their mutual interdependencies. By using a framework that organizes research topics in nomadic information environments at the individual, team, organizational, and interorganizational levels and is comprised of both service and infrastructure development, they assess the opportunities and challenges for information system research. These deal with the design, use, adoption, and impacts of nomadic information environments. Authors conclude by discussing research challenges posed by nomadic information environments for information systems research skills and methods. These deal with the need to invent novel research methods and shift the research focus, the necessity to question the divide between the technical and the social, and the need to better integrate developmental and behavioural (empirical) research models.

Hundling, Jens and Weske, Mathias (2003) argue that both business analysts and information systems engineers attribute a great
potential to web services as a vehicle to simplify the interoperability of services offered by different organizations in electronic business scenarios. In this paper, the Service Oriented Architecture is explained as the foundation of this new technology. The main implications and benefits of this architecture and the new possibilities offered are discussed. Since standards play an increasingly important role in this new technology era, new and upcoming standards for an implementation of this architecture are summarized; these combined standards are known as Web services technology. The real potential for Web services is facilitating business processes, a recently specified framework for defining and executing business processes in a Web services environment is presented. Rather than solely discussing the strategic benefits of Web services, this paper also tries to point out current technological deficiencies and recent approaches to overcome them.

Alkadi, Ihssan and others (2003) address the effects of Information Technology on the business world. Technology is increasingly playing a crucial role in the success of organizations in the information age. The impact of Information Technology on business has been enormous. Computers and the information they process and store have permeated every aspect of the business world. The fundamental role of Information Technology is to enable businesses to find new ways to drive down the costs of products, processes, and improve performance. The authors use examples from five different companies/industries to show the different and dramatic effects that IT can have on a business. The television industry is using high-speed Internet to send digital dailies from location to directors and producers in Hollywood. The use of this technology eliminates the old method of dubbing tapes and then sending
them via FedEx back to L.A. General Motors has used aggressive outsourcing and web-based services to increase production time. Where it used to take up to four years to get a vehicle on the market, it now takes less than two. With new management and a greater focus on quality and customer satisfaction, an aircraft company has seen its $15 million in debt turn into $243 million in revenues. These increased revenues were attained by using new software to help it get better organized. AT&T, the once Titan of the phone industry, utilized IT to get out of debt. Specifically, AT&T used web-services to allow all of its different systems to communicate. By using new software to translate three different business processes into one usable code, Cybex International used IT to fix its supply-chain mess.

Reijers, Hajo A and others (2003)\textsuperscript{45} point out that in manufacturing, the interaction between the design of a product and the process to manufacture this product, is studied in detail. They substantiated with the example that, material requirements planning (MRP) as part of current enterprise resource planning (ERP) systems, which is mainly driven by the bill of material (BOM). For information-intensive products such as insurances, and many other services, the workflow process typically evolves or is redesigned without careful consideration of the structure and characteristics of the product. In this paper, they present a method named product-based workflow design (PBWD). PBWD takes the product specification and three design criteria as a starting point, after which formal models and techniques are used to derive a favorable new design of the workflow process. The ExSpect tool is used to support PBWD. Finally, using a real case study, they demonstrate that a full evaluation of the search space for a workflow
design may be feasible depending on the chosen design criteria and the specific nature of the product specifications.

Nandhakumar, Joe and Montealegre, Ramiro (2003)\textsuperscript{46} introduces a series of articles on social and organizational aspects of Internet-based information systems (IS). Significance of Internet-based IS in organization; investigation of intranet control activities and their effect on user's perceptions of empowerment; benefits of using internet.

Detlor, Brian (2003)\textsuperscript{47} a case study investigates various ways in which different internet-based information systems (IS) are used by organizational participants. Borrowing theoretical insights on information behaviour accumulated over 50 years of information studies research, a conceptual framework is presented to help understand and assess the social and organizational impacts of internet-based IS. The framework describes the use of internet-based IS as a dynamic cycle of information needs–seeking–use activity situated in the context of a firm's information environment. Research questions pertain to the process of how individuals in organizations seek and use information from internet-based IS to satisfy information needs. In terms of information needs, this involves understanding the problem situations that lead participants to use internet-based IS, as well as the characteristics of those problems beyond subject matter. With respect to information seeking, this involves analysing how information from internet-based systems is displayed and formatted to signal their potential usefulness. In terms of information use, this involves how information obtained from internet-based systems is used in practice to resolve or redefine problems. Both quantitative and qualitative research methods are used. Data collection involves web...
tracking to identify significant episodes of internet-based IS activity, as well as one-on-one interviews to explore the context behind these episodes. Results suggest that it is possible and valuable to identify scenarios of internet-based IS use dominant in an organizational work setting. Doing so can help to identify ways to improve the situated use of internet-based IS that the information needs-seeking-use cycle in firms.

Argote, Linda and others (2003) presents that special issue of 'Management Science' builds on and complements previous research on knowledge management. Consistent with the mission of 'Management Science,' the special issue provides an interdisciplinary treatment of knowledge management. The papers appearing in this special issue represent different disciplines, including organizational behaviour and theory, information systems, psychology, sociology, economics, and strategy. The paper describes work at different levels of analysis ranging from the small group to the organizational to the interorganizational levels. They are based on archival, survey, laboratory, qualitative, and simulation methods. Moreover, the field studies focus on firms in different industries, such as pharmaceuticals, semiconductors, computers, and financial services. This special issue is rooted in empirical work, and was coordinated with a conference at Carnegie Mellon University in September 2001.

Martin, Andrew (2003) say that the development of high quality technical systems is an ongoing important element of information systems success. This paper investigates the current practice of information technology project configuration from a management viewpoint. It is based on a series of semi-structured interviews across a
range of medium to large organizations in UK, including both users and providers of IT services. It finds that project requirements, strategic IT policies, risk management, pragmatic considerations, the managed exploitation of experience and the managed adoption of new technologies drive individual project configuration. The paper proposes a new integrated model that explicitly identifies the drivers of project configuration management. It illustrates the model using a published case study and generates directions for further research and implications for practitioners.

Rodrigues, A.J. and Govinda, S. (2003)\textsuperscript{50} studied and presented that, the University of Mauritius completed the setting up of a modern Local area network in September 1996. Having successfully implemented traditional services such as e-mail, Internet browsing and sharing of resources, the University developed and implemented an Integrated Management Information System in order to support an increasingly dynamic academic and administrative environment. This paper describes the various processes involved in the building of an Integrated MIS for a University in a small developing country that faces serious economic challenges. A background of the motivations for introducing a computerized MIS is provided followed by the decision-making process of whether to build an in-house MIS or to procure one. The paper also explains the methodology used and the systems that have been developed and integrated in a prioritised and phased manner using economic principles.

Al-Gahtani, Said S. (2003)\textsuperscript{51} in his work investigate how perceived attributes of computer technology influence its rate of adoption
in the workplace. In order to achieve this, the diffusion of innovation literature was reviewed looking for a set of common attributes that could be responsible for the largest rate of adoption. The literature suggests that Rogers' five attributes of innovation namely, relative advantage, compatibility, complexity, trial ability, and observability explain up to 87% of the innovation rate of adoption. About 1200 knowledge workers in 56 public and private medium and large organizations across Saudi Arabia of different managerial levels and spanning a wide spectrum of industries and services have participated in this study. The findings highlight the role and direction of these factors toward computer technology adoption in developing countries. This should help decision makers in this part of the world cultivate the positively correlating factors to enhance computer technology adoption while trying to reduce the effects of the negative factors. Authors contend that the findings are also valuable for practitioners from western cultures in applying computer-based information systems solutions to developing countries.

Lim, Billy and Wen, H. Joseph (2003) discusses the Software reuse and systems interoperability have been primary goals of many IT organizations, especially those that rely heavily on computer networks. Object-oriented technology has been utilized to accomplish these goals with relative success over the years; but there are many hurdles that technology could not overcome. One of them is due to lack of standards. An object developed in one vendor's technology cannot easily communicate with another's. Another difficulty is that the majority of software applications reside behind firewalls -- security barriers that restrict communication between networks. Web services, self-describing services that can easily be consumed over the web, is the latest trend in
the industry to address the problems identified. Web services enable a group of related applications to be programmatically invoked over the Internet. They are rapidly emerging as important building blocks for business integration. Companies are finding important Web service applications and enterprise application integration solutions. This article reviews the technical underpinnings of Web services and discusses their business opportunities and potential benefits. It also assesses the challenges and implementation difficulties of the technology.

Witten, Karen and others (2003)\textsuperscript{53} describe the development of an area-based index of location access to community services, facilities and amenities. The index enables comparisons to be made across urban neighbourhoods and provides a starting-point from which to identify relationships between opportunity structures in the local environment and residents' health and well-being. The index is based on six domains: recreational amenities, public transport and communication, shopping and banking facilities, educational services, health services, and social and cultural services. The inclusion of specific resources was determined by their relevance to the daily lives of parents/caregivers of young children. However, the methodology has applicability to diverse population groups. Construction of the index, using geographical information systems, and its potential use for locality-based policy and planning are discussed.

Anderson, Geoffrey and Moreno-Sanchez, Rafael (2003)\textsuperscript{54} identified that Geographic Information Systems (GIS) are moving from isolated, standalone, monolithic, proprietary systems working in a client-server architecture to smaller web-based applications and components offering specific geo-processing functionality and transparently
exchanging data among them. Interoperability is at the core of this new web services model. Compliance with Open Specifications (OS) enables interoperability. Web-GIS software's high costs, complexity and special requirements have prevented many organizations from deploying their data and geo-processing capabilities over the World Wide Web. There are no-cost Open Source Software (OSS) alternatives to proprietary software for operating systems, web servers, and Relational Database Management Systems. The writers tested the potential of the combined use of OS and OSS to create web-based spatial information solutions. They present in detail the steps taken in creating a prototype system to support land use planning in Mexico with web-based geo-processing capabilities currently not present in commercial web-GIS products. The writers show that the process is straightforward and accessible to a broad audience of geographic information scientists and developers. They conclude that OS and OSS allow the development of web-based spatial information solutions that are low-cost, simple to implement, compatible with existing information technology infrastructure, and have the potential of interoperating with other systems and applications in the future.

Peak, Dan and Guynes, C. Steve (2003)\textsuperscript{55} say that in 1998, the Information Technology Division (ITD) of Omaha Public Power District (OPPD) jointly developed an IT Alignment Planning Model with their Energy Services Unit. The model helped identify areas of information concern, resulted in the prioritised development of IT strategies, and served as a pilot for the corporate-wide implementation of the IT Alignment Planning process. The IT Alignment Planning process was then applied to the five OPPD business units, giving management a view of Information Concerns and possible solutions. By tying he
planning process directly to each business unit's Critical Success Factors (CSFs) in their strategic plans, IT Alignment Planning presented a strategic view of information and IT systems, products, and services across the corporation. The process also provided input into strategic and tactical planning processes, and considered the effects of competition on the objective of improving information quality for IT clients.

Keng Siau (2003) mentioned that global business constantly faces radical transformations stemming from advances in information technology (IT). The concept of gaining competitive advantages by linking information systems across organizations (e.g., supply chain integration) has taken on an overtone of dogma in many business circles. Such electronic linkages are known as Interorganizational Systems (IOS). Lately, the growing importance and easy accessibility of the Internet have propelled IOS to new height. Undoubtedly, IOS have a great impact on organizational performance and industry structure. However, IT such as the Internet is readily available to enjoy newer and better technology that enables them to offer comparable services in a short time and possibly at a lower cost. Late adopters can also learn from the experience of innovators and thus avoid problems and hiccups along the way. How, then can organizations achieve competitive advantages from IOS. This paper exams a number of successful IOS such as the SABRE reservations system from American Airlines, the Apollo reservations system from United Airlines, the ASAP Express from Baxter Healthcare Corporation, and the Wal-Mart Supply Chain system. These are some of the rare few that have managed to sustain competitive advantages as other companies installed similar electronic capabilities. The factors that contribute to the success of these systems are discussed.
The paper also looks at the impact of the Internet on IOS and the strategies for IOS in the Internet era.

Juhnyoung Lee and Park, Myung S. (2003) studied the technologies for Web services facilitate the creation of business process solutions in an efficient, standard way. However, the automation of process integration with Web service technologies requires the automation of discovery and composition of Web services. The paper focuses on two problems of the Web service-based business process integration: (1) the discovery of Web services based on the capabilities and properties of published services, and (2) the composition of business processes based on the business requirements of submitted requests. Authors propose a solution to these problems, which comprises multiple matching algorithms, a micro-level matching algorithm, which matches the capabilities of services with activities in a process request, and macro-level matching algorithms, which are used to compose a business process by identifying services that satisfy the business requirements and constraints of the request. The solution from the macro-level matching algorithms is optimal in terms of meeting a certain business objective, e.g., minimizing the cost or execution time, or maximizing the total utility value of business properties of interest. Numerical examples are illustrated to show how to select the best Web service candidate for a chosen business process through the use of proposed macro-level matching algorithms. Furthermore, they show how existing Web service standards can be used and extended to specify the capabilities of services and the business requirements of requests.
Hung, Patrick C.K. and Tan, Joseph (2003) argues that one legitimate purpose of the health data integration (HDI) initiative is to provide a platform for improving healthcare treatment services, for example, providing a doctor with access to patient medical records from databases maintained by different healthcare provider organizations and clinics while investigating the health condition of the patient. More recently, however, the emphasis on health data management in health services has shifted from treatment to prevention via the use of HDI services. Along this perspective, HDI services integrate the datasets from various isolated health and social databases into integrated views for policy-makers, practitioners, and researchers, who will often use these resulting views to conduct additional analyses for various uses. As the purpose of such emerging HDI services to aggregate the datasets in previously isolated databases for a variety of such uses in a loosely coupled environment, this dynamic nature makes HDI a challenging domain for aggregation issues. Consequently, they argue that identifying and specifying these aggregation issues more formally to generate a rigorous security policy in HDI will better prevent unauthorized users from accessing aggregates.

Singh, Rahul and others (2003) presented that focuses on the flow of problem specific knowledge to partner organizations over highly integrated information systems. Role of the info-mediary organizations; integration of the processes of organizations engaged in electronic business in the knowledge-based economy; delivery of value proposition to the customer.
Qureshi, Sajda (2003) presents an overview of several articles which address the ways in which information technology is being used in order to enable social and economic development, published in the September 2003 issue of Information Technology for Development. The first article is an examination of the diffusion of Information and Communication Technology in developing countries through careful analysis of economic indicators. The indicators of Information and Communication Technology analysed are Internet hosts, Internet users, personal computers and mobile phones. The next two papers in this issue consider two different ways in which Geographical Information Systems are used to address specific development objectives. Development is not restricted to developing countries but also includes developed countries with populations that are marginalized and could benefit from information technology. The second paper by examines the use of a Geographical Information Systems for the provision of health services to the African American population. The integration of both spatial and non-spatial datasets in a Geographical Information Systems enables spatial distribution of asthma hospitalisation data to be correlated with socio-economic features. This research provides insight into the extent to which a Geographical Information Systems can be used to target socio-economic factors effecting health. The third paper suggests that there is a need for integrating disparate knowledge based systems around Geographical Information Systems applications to prevent land degradation. The final paper takes the concept of participation a step further and examines the role of Group Support Systems for development.
Moody, Kavin W. (2003) mentioned in his study that one of the perennial top issues in surveys of IT management concerns is IT alignment. It always seems to be in the top-ten, but cyclically rises to number-one at times of economic decline. When the economy turns down, information services departments are called upon to redouble their vigilance on spending and to focus their attention on projects and initiatives that are in line with the near-term objectives of the overall business. The enterprises that have developed collaborative management processes between the business and information services organizations do this best and with the least amount of disruption. In fact, it seems that there has been tremendous progress in the past ten or fifteen years in terms of leadership and management practices on the part of both business and information services organizations that have contributed to a dramatic improvement in the handling of downward economic adjustments. Upward economic change, on the other hand, poses more perplexing challenges.

Bhargava, Hemant K. and Sundaresan, Shankar (2003) demonstrates that quality-contingent pricing is a useful mechanism for mitigating the negative effects of quality uncertainty in e-commerce and information technology services. Under contingency pricing of an information good or service, the firm preannounce a rebate for poor performance. Consumers determine performance probabilities using publicly available historical performance data, and the firm may have additional private information with respect to its future probability distribution. Examining the monopoly case, authors explicate the critical role of private information and differences in belief between the firm and market in the choice of pricing scheme. Contingent pricing is useful when
the market underestimates the firm's performance; then it is optimal for the firm to offer a full-price rebate for misperformance, with a correspondingly higher price for meeting the performance standard. They study the competitive value of contingency pricing in a duopoly setting where the firms differ in their probabilities of meeting the performance standard, but are identical in other respects. Contingency pricing is a dominant strategy for a firm when the market underestimates the firm's performance. Whereas both firms would earn equal profits if they were constrained to standard pricing, the superior firm earns greater profits under contingency pricing by setting lower expected prices. Authors show that contingency pricing is efficient as well, and consumer surplus increases because more consumers buy from the superior firm.

Barnes, David and others (2003) reports the initial stages of a research project investigating how UK-based organizations undertaking electronic commerce are seeking competitive advantage through the management of their e-operations. It is widely held that success in e-business is dependent upon harnessing the increased connectivity of the internet in order to improve efficiency and effectiveness in managing business processes that produce and deliver goods and services. This requires the integration of operations management and information systems both within the organization and with supply chain partners. Results from a cross-case analysis of seven companies (three manufacturers and four financial service companies) are reported. These indicate that: (1) e-commerce investments are mainly driven by a fear of being left behind by competitors rather than a desire to improve business process performance; (2) e-commerce investments tend to automate rather than redesign existing processes; (3) e-operations are
run as a discrete set of processes, with little or no integration between e-
operations information systems and those of the bricks-and-mortar
operations; (4) there is a lack of formal performance measures for e-
commerce investments; (5) legacy systems and a lack of industry
standards are major encumbrances to information systems integration.

Smith, Michael Alan (2004) distinguishes portals from all
other types of information systems and a General Portal Model for
identifying and organizing the basic services portals provide. The
potential of the web portal market and its technology has attracted some
of the biggest computer and software firms. It has inspired the mutation
of search engines and the establishment of new vendors. Yet the meaning
of portal is not well defined and its use, even within the industry, remains
problematic. Originally coined to describe Web-based applications that
provide organized access to the resources of the Internet through search
engines and lists of Web sites, the term portal has been applied to systems
that differ widely in capabilities and complexity, from static Web pages
providing links to resources on a given topic to inter-organizational
systems providing access to multiple heterogeneous data sources and
applications. Portal is defined as an infrastructure providing secure,
customisable, personalised integrated access to dynamic content from a
variety of sources.

Townes, John M. and others (2004) investigated the
emergency department syndromic surveillance, may provide early
warning of disease outbreaks due to bio-terrorism or natural phenomena.
The purpose of this investigation was to explore how an electronic
emergency department information system could be used as a data source
for respiratory syndrome surveillance. The process of data collection, entry, and transmission is described, and then a subset of data elements with potential epidemiological value is selected. The quality of the data contained in the system was evaluated by conducting a retrospective analysis of emergency department visits recorded in the system during 2001 and by reviewing clinical charts of cases with respiratory diagnoses. Diagnosis codes, discharge disposition, and demographic data were relatively complete; additional clinical data were not. Diagnosis codes were rapidly and reliably recorded. Data available in the system allows a description of emergency department visits for respiratory syndrome in terms of age, gender, location, severity of illness, and distribution in time. Encrypted data were transmitted every four hours to the health department without added work for emergency department personnel. Although significant obstacles remain, electronic emergency department information systems such as this may provide rapid, reliable data for syndromes surveillance.

Chari, Kaushal and Seshadri, Saravanan (2004)\textsuperscript{66} reports "driven by emerging opportunities in the marketplace, e-commerce organizations must rapidly and continuously roll out new products and services to support evolving business models. Organizations implementing an enterprise-wide application infrastructure to meet immediate business needs often pursue unplanned and ad hoc application systems integration--an undisciplined approach that too often leads to large isolated monolithic application systems involving proprietary architectures, business semantics, and technologies. The resulting brittle infrastructure is unable to adapt to changes as readily as it should. Adopting a standards-based approach to applications integration is
difficult for several reasons. First, standards and specifications are often incompatible, incomplete, or involve overlapping scopes that are not mutually exclusive. This complicates the process of selecting a set of standards covering all aspects of integration for an organization's multiple applications.

Strader, Troy J. and Ramaswami, Sridhar N. (2004) studied that in the past few years, investors have had another channel option besides the traditional sales channel—the online, or Internet, channel—for getting financial news and information and buying and selling through such online brokerage firms as Ameritrade Corp. While there is little argument that the presence of the online channel has affected the customer policies of traditional financial service firms, this article took a consumer perspective, examining individual consumer perceptions of the two channels. Individual investors worldwide appear to be most concerned about convenience, control, ease of use, return potential, financial education, the costs of transactions, and risk management. The Internet has produced significant changes in how financial products are bought and sold worldwide and consequently in the role and importance of traditional intermediaries, including agents and stockbrokers. The online channel gives investors the opportunity to significantly reduce the cost of conducting their personal financial transactions.

Looney, Clayton A. and others (2004) discusses differences between mobile e-commerce (MEC) and the traditional wired Web architecture. It offers an in-depth analysis of the various business models that have emerged in the MEC environment. It also presents a classification scheme, examines the relative strengths and weaknesses of
the models, and discusses developing trends and their implications for MEC in the brokerage industry. The emergence of MEC promises to supercharge and extend the capabilities of mobile brokerage service, acting as the catalyst for further innovation. Although MEC proves advantageous in terms of ubiquity and localization, the wireless architecture presents a number of unique challenges. In the conventional wired web environment, devices, applications, and networks are well developed and standardized. The wired web architecture is comprised of four main components: web servers, network transport, applications, and devices. Web servers facilitate requests for documents, which are transmitted using the network transport.

Shi, Xi and others (2004)\textsuperscript{69} explores whether disconfirmation theory can explain satisfaction formation processes in library users. Both library users' needs and expectations are investigated as disconfirmation standards. Overall library user satisfaction is predicted to be a function of two independent sources—satisfaction with the information product received and satisfaction with the information system and library services used to retrieve the information product. Both sources are hypothesized to contribute independently to satisfaction in library users.

Zahay, Debra and Griffin, Abbie (2004)\textsuperscript{70} mentions that learning about customers takes place through relevant dialogues with those customers, also known as customer relationship management (CRM). As relationships develop, information about the customer is gathered in the firm's customer information systems (CIS): the content, processes, and assets associated with gathering and moving customer information throughout the firm. This research develops a measure of CIS...
management capabilities based on learning organization theory and measured by the ability to get, store, move, and use information throughout the business unit. This measure is then used to analyse customer learning processes and associated performance in the context of marketing strategic decision making. This study of 209 business services firms finds that generic marketing strategy positioning (low-cost and differentiation) and the marketing tactics of personalization and customisation are related to CIS development. Customer information systems development in turn is associated with higher levels of customer-based performance, which in turn is associated with increased business growth. Since the strongest association with customer-based performance is strategy selection, the long-term benefits of the knowledge gained from the CIS may be in the ability to assist in measuring customer-based performance, rather than in the ability to immediately contribute to performance. Finally, for these firms, customization and personalization are not directly associated with performance and thus may not be necessary to support every firm's marketing strategy.

Murtaza, Mirza B. and Shah, Jaymeen R. (2004) describe the Partner Relationship Management (PRM) is an information strategy that employs a set of applications focused on directly impacting an enterprise and its business partners' sales and services. Web services employ a distributed computing architecture that consists of many different computers that communicate over the Internet to form one system. The communication standards and protocols used in web services are universally accepted. These web services can be requested by client applications: Web based, windows, or mobile devices. This article presents an overview of PRM and web services, and discusses...
potential for improving partner relationship processes through the use of web services.

Hibberd, Betty Jo and Evatt, Allison (2004) suggests that information mapping based on a business's goals and objectives can help shift information manager's strategic perspective and increase his or her perceived value. Definition of information mapping; explanation on why it is importance to map information flow; steps involved in information mapping process.

Chen, Kuanchin and others (2004) explored that delivering the right Internet service to the right person has been a major challenge to E-commerce strategies. Developers of E-commerce and online services have constantly faced the issue of scarce design guidelines to model their customers' online behavioural patterns. This has called for new research on the characteristics of Internet users so that appropriate E-commerce website design strategies can be developed. This study attempts to investigate the possibility of the non-detrimental effects of Internet dependency and proposes an instrument to measure both positive and negative Internet dependency. The authors further assess the effects of these two types of dependency on several online activities to delineate the characteristics of Internet users. This article is concluded with the managerial implications of the findings and the suggested E-commerce website design guidelines.

Sipior, Janice C. and others (2004) describe that the wealth of information concerning a consumer's Internet use and preferences can, with relative ease, be gathered and disseminated. Sometimes, a consumer
may willingly give personal information to enhance the browsing experience at a favourite web site. Other times, Internet monitoring programs may be surreptitiously gathering this information so it can be used to commit identify theft. In another instance, information willingly given to one site is sold to a third party that uses it to promote its own web services. The ethics of these first two scenarios is clear: the first is good and the second is bad. The third, however, is not so clear. The consumer may feel that private information has been violated while industry may feel it is doing well by better serving the consumer. These are just a small sampling of the range of ethical situations data collection on the Internet creates. This article identifies the ways Internet information about consumers is collected and examines the ethical issues created by the collection process and its consequences.

Hong, Junjie and others (2004) examines the current status and future prospects of Chinese manufacturers' usage of external logistics services as well as difference between users and non-users based on a survey of the industry in 2002. The results reveal that users and non-users differ significantly in some firm-specific characteristics, such as industry type, production mode, and account size. Many manufacturers employ a "mix" strategy to reduce risks associated with this transitional economy through temporary purchase from multiple providers. There is an increasing trend for firms to outsource logistics services in China, especially in the area of logistics information system management and logistics system design. Major dissatisfaction in the market is caused by rate level, on-time delivery performance, and number of service offerings.
2.1.3 Information Technology Application for Library Services

Information Outlook (2004)\textsuperscript{76} presents some advice on customer service and satisfaction. Determination of values under which an institution will operate; risk-taking in recruiting potential employees; application in library services.

Hawks, Carol Pitts (1994)\textsuperscript{77} examines knowledge-based systems or expert systems in the areas of technical services and collection management. Purposes of expert systems; uses; appropriate domains; components; knowledge acquisition; methods; development issues; applications in library services are presented.

2.1.4 Infrastructure for Information System and Services

Hackbarth, Klaus D. and others (2004)\textsuperscript{78} mentioned that the evolution of the Digital Video Broadcasting Standard (DVB-S) and its application over satellites is one of the most significant technological developments in wireless communications. DVB-S platforms are not only media to broadcast TV programs to a large number of viewers rather their characteristic of combining MPEG-2 TV and Internet Protocol services into the same transport stream allows DVB-S to construct a flexible service integrated networking infrastructure, able to connect distribution nodes, service providers and end users to each other. With distribution nodes providing connectivity to end users via various types of access networks, time-varying traffic will be generated, so a fixed and static allocation of bandwidth between nodes does not permit optimum satellite spectral efficiency. Real-time dynamic management of the bandwidth is
mandatory in order to enhance the capability of DVB-S platforms as a networking infrastructure, allowing optimised provision of heterogeneous traffic types in respect to the available spectrum.

Branches of China's State Administration of Taxation deploys comprehensive enterprise solutions from Nortel Networks (2004) presents information on the upgrades that several branches of the State Administration of Taxation of China made to their networking infrastructures. Software chosen to upgrade their networks; benefits given by the upgrades to the tax management of the branches; reasons for upgrading their systems are evaluated.

Wang, Huaiqing and Chen, Wang (2003) argues that today's software often has countless intricate interdependencies on modern operating systems, other enterprise applications and the high-speed networking infrastructure. It is within such highly integrated information technology environments that software security is becoming a focal point for designing, developing and deploying software applications. The study outlines various classes of security-related risks and threats that need to be considered during the design phase of the software development process. The universe of software risks and threats is divided into three categories based on their target of attack: application layer, platform layer and network layer. By taking into consideration security risks and threats and their impact on the quality of the target system, software architects and designers need to select protection mechanisms, the application of appropriate security technologies and approaches to provide necessary safeguards. The study provides today's security professionals with an understanding of the context in which their
technologies relate to the entire software system and provide for software security design requirements to be fully analysed.

Abler, Randal T. and others (2003) an undergraduate engineering internetworking learning environment that presents both internetworking principles and laboratory experimentation is described. The learning environment uses the source code availability of the Linux operating system as a case study of the implementation issues and ramifications of internet networking infrastructures. Laboratory use of experimentation with internetworking equipment and software allows interaction with internetworking principles and fundamentals as well as implementation and performance issues. The objectives of this environment include providing a comprehensive mechanism whereby students are exposed to fundamentals and principles that may readily be applied to experimental-based Internet-work research and Internet-work product development. A follow-on capstone design environment is also briefly described.

Oprysko, Modest M. (2003) introduces a series of articles on the communication technologies in IBM that are contributing to the increased and efficient movement of data. Paper on relevant work on semiconductor processes; core technology and associated design enablement; papers on networking infrastructure are described.

Finin, Tim and others (2002) outlined that the pervasive computing environments of the near future will involve the interactions, coordination and cooperation of numerous, casually accessible, and often invisible computing devices. These devices, whether carried on our
person or embedded in our homes, businesses and classrooms, will connect via wireless and wired links to one another and to the global networking infrastructure. The result will be a networking milieu with a new level of openness. The localized and dynamic nature of their interactions raises many new issues that draw on and challenge the disciplines of agents, distributed systems, and security. This paper describes recent work by the ubiquity research group, which addresses some of these issues.

Marples, Dave and Moyer, Stan (2002) introduces several articles dealing with in-home networking. Emergence of a standard which is intended to be a low-speed networking infrastructure for use in very price-sensitive environment; examples of networking; obstacles before achieving a networking equivalent; presentation of the digital manual concept are formulated.

Berghel, Hal (2001) in his article focuses on the Y2K e-commerce problem. Y2K will prove to be one of the most interesting years in history, as it is known as the landmark year in capitalism. Y2K saw the foundation of the IT economy crumble at the same time it helped produce the largest budget surplus in history of the U.S. There are five key ingredients to e-commerce: a diffuse, digital networking infrastructure; a means for delivering and rendering acceptable cyber media content; a mechanism for handling transactions in a secure environment. A financial infrastructure to handle the accounting and invoicing for transactions; a viable business plan. In real sense, e-commerce has its origins in the bulletin boards of the 1970s. The two most popular, early forms of communication in this period were email
and bulletin boards. The one dark spot on the horizon is that the problem that caused the Y2K e-commerce meltdown is still with an over reliance on technology to overcome weaknesses of a bad business model.

Riezenman, Michael J. (2001)\(^8^6\) analyse the solutions to address the Internet protocol traffic problem. How the networking infrastructure should be developed; discussion on wavelength-division multiplexing systems in commercial operation; purpose of the multiplayer communications network; way to avoid the problems of the client-server model. Evolution of the IP Protocol Stack; four Network model details; Digital Wrapper Technology.

Hyeong-Ah, Choi and Subramaniam, Suresh (2001)\(^8^7\) editorial. Part I. asserts the importance of optical communication networks employing wavelength division multiplexing (WDM) in networking infrastructure. Survivability techniques for Internet protocol over WDM networks; assignment of routes and wavelengths to service and restoration paths in WDM networks are enumerated.

Whelan, Carol Scott and Frantz, Carl (1997)\(^8^8\) outlines the findings of a qualitative and primarily formative evaluation of one state's Networking Infrastructures for Education Pilot Program to help develop a statewide educational technology network. Background of the study; its method; findings and recommendations of the research; discussion of the study; conclusions are briefed.

Patel, Baiju V. and Bidikian, C. C. (1996)\(^8^9\) states that the integration of diverse types of traffic streams on a single transport networking infrastructure, has been the driving force behind the
increasing use of asynchronous transfer mode (ATM) networks. Shaping of traffic at its source, a prominent control solution; traffic characteristics; results of a simulation model; the maximum burst duration and size are presented.

Advanced fiber/copper network enriches University of Victoria (1996)\textsuperscript{90} features the computer networking infrastructure of the University of Victoria in Canada. Fiber/copper telecommunications fibre optic base; applications including C/C++, Pascal and Java scripts are discussed.

Grzelak, Stephen A. and others (1996)\textsuperscript{91} mentioned that the deployment of two-way broadband hybrid fibre-coax (HFC) local access networks will enable a wide variety of new communication services for consumers and small businesses. Interactive television, video-on-demand, video telephony, and other services focused on TV and Video have attracted much attention. Broadband local access networks also offer compelling data-oriented services that support computers and other devices in homes and small businesses. This paper gives an overview of these new residential data services and applications, the technical challenges involved in their delivery, and architectures and key components of the required networking infrastructure.

Ethernet no-network (1995)\textsuperscript{92} the article reports on a low cost alternative to an Ethernet network where full networking infrastructure is not necessary such as in small workgroups. Etherlite supports a daisy chain of up to 32 nodes across 100 metres. It runs on telephone cable and plugs into the parallel port of any IBM compatible
PC. Networking functionality includes E-mail, file transfer, chat and printer sharing. There is a pass through parallel port for local printing which supports the 1284 bi-directional standard. The system works with all major peer-to-peer networks applications including Windows for Workgroups, Personal Netware.

Deitch, Rodney (1994)\textsuperscript{93} focuses on the British Department of Health's expansion of day surgery. Health Minister Virginia Bottomley's opening of a day surgery unit at Frimley Park Hospital National Health Service (NHS) Trust; installation of a networking infrastructure to support all NHS electronic-mail and other electronic communications in England; speculations on Bottomley's successor outlined in the article.

Veroy, Boris and Zwass, Vladimir (1988)\textsuperscript{94} presented long-term evolution of management information systems toward distributed processing, accompanied of late by the development of inter-organizational systems, has posed increasing demands on the networking infrastructure. Within this framework, point-to-point data communication over a network composed of various media remains the most frequent communication mode. With a large base of network infrastructure in place, the need for incremental capacity increased due to new users who join existing networks has become a recurring problem. Accommodation of new users without downgrading the quality of service that has been provided to existing users requires network capacity expansion. A method is presented for computing the least-cost expansion of link capacities on a point-to-point path in a network, subject to the constraint on the grade of
service. A polynomial-time numerical algorithm is provided, along with the results of computer experiments.

CNT be-buts storage networking infrastructure platform (2004) reports on the launching of CNT's UltraNet Multi-service Director (UMD)-16, a new generation storage networking infrastructure platform. The UMD-16 is the first model to be released in the UMD family of SAN Director products. CNT's UMD delivers unmatched performance capabilities, scalability, flexibility, and serviceability to ensure investment protection for customers. According to Gary Pilafas, enterprise architect at United Airlines, UMD will be the 'Director of all Directors.' He added that as a large organization, it is crucial for them to have an ultra-scalable and flexible infrastructure that is prepared to handle significant growth; the UMD has this ability with a 5Tb back plane and the ability to scale to 512 ports. The enhanced functionality to create logical domains is also a technology that can help simplify the management of our SAN. CNT's UltraNet Multi-service Director, now available to customers through IBM and IBM Business Partners, offers superior scalability in ports, protocols and speeds, a flexible upgrade path from 1 Gbps up to 10 Gbps, and the ability to seamlessly integrate a variety of services as required by the enterprise. The UMD family of products is designed to meet customers' current and future storage networking requirements. The UMD-16 is the first model to be released in the family and supports up to 256 non-blocking ports of FICON and/or Fibre Channel.

Doyle, T.C. (2004) this article evaluates several companies in the computer industry, based on the VARBusiness' 2004 Annual
International Business Machines Corp. (IBM), which won eight of the 18 product categories, soared in 2004. In addition to the impressive performance of IBM, there were other noteworthy showings in the study, which analyses partner satisfaction from four different angles: product innovation, support, partnership and loyalty. As it did in 2003, Samsung not only won its category, display technology, and swept its rivals, but it also registered the single highest total score in the entire ARC study. Samsung's T. H. Kim, president of the vendor's information technology division that governs the printer and display group, tells VARBusiness that his company's decision three years ago to focus on the channel has paid off well in the past two years. One reason: the big money he has approved for partner education, branding and support activities. Another big winner in the 2004 ARC is Cisco Systems Inc. The company won in networking infrastructure solutions, security management software and business-class wireless local area networks. Though some vendors are amazingly consistent with the level of quality they provide in terms of product innovation, support and partnership, others vary in what they offer.

Hatlestad, Luc (2004) focuses on the rating posted by various computer companies in the U.S. at the 2004 Annual Report Card's (ARC) networking infrastructure solutions category. For now, the ARC rankings in this sector are confined to Cisco, 3Com, Nortel, Enterasys and Hewlett-Packard (HP). Cisco offers a broad enough product set and a complete enough solution to make people not want to switch away from them. But these rankings do not always match up with market-share numbers. Case in point: in August, HP announced that its ProCurve Ethernet switches had ascended to the number 2 position worldwide in

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terms of number of switch-port shipments. Meanwhile, 3Com, ranked first in many criteria, including quality of technical support, communication, solution-provider program and over-all partnering. But 3Com received middle-of-the-pack scores in most of the other areas, and its ongoing financial struggles may limit its ability to stay near the top. The same goes for Nortel, which combined continuing internal turmoil with mostly low scores, tying with 3Com for second place overall. Enterasys showed strength and posted solid numbers in several criteria, including post sales support, sales partnering and managing channel conflict.

Peade, Robert (2004) presents information on fast changing technological environment in fiber optic industry. However, a nagging question keeps one haunting that how long is it going to be before somebody brings forth another really awesome technology. Before the burst of the telecom bubble, barely a week went by without somebody introducing something radically different. With optimism for the future, the innovative spirit of optical telecom is beginning to re-emerge. New networking infrastructures are moving from the planning and marketing phases to actual implementation.

Davis, Jessica (2004) presents information on the networking infrastructure provided by HomePlug, a standard set by the HomePlug Power line Alliance powered by Intellon. Plan of Packard Bell to incorporate HomePlug technology into the power supplies for its desktop computer platforms; features of HomePlug 1.0; comparison of the traditional networking infrastructure with wireless networks.
Sandler, Neal and others (2004) mentioned in their article that business deals that sparked the technology industry in Israel. After a long drought, a shower of deals is reviving Israel's Silicon wad—the collective term for the 12 high-tech industrial parks scattered around the country. On Aug. 25, 2004, Cisco Systems paid $200 million for P-Cube, a Tel Aviv developer of network-traffic-management hardware co-founded by Giora Yaron. This is Cisco's second Israel deal in three months, bumping its roster of holdings in the country up to seven. The country is chock-full of start-ups developing cutting-edge software, medical devices, and networking infrastructure for the Web. Israeli venture-capital funds, meanwhile, are restocking their coffers: Industry experts predict local outfits will raise over $1 billion this year, with most of the funds coming from American and European institutional investors.

Sipex introduces PDIC for DVD records (2004) Sipex Corp. has introduced the SP8043, a photo detector integrated circuit (IC) specially engineered for use in home entertainment DVD recorders, in the U.S. The SP8043 has been chosen by Philips Optical Storage as one of the core components in the optical pick-up head that delivers DVD media content to the widely adopted Nexperia ATA PI DVD Recording Engine. Key features include dual wavelength of 650 and 780 nanometers, 55 megahertz data channel bandwidth, selectable gain and Power Down Mode and 16-pin clear mould flat pack package. The optical storage product family offers complete electronic solutions that enable faster read speeds and smaller footprints in the pick up heads of DVD-R/W, DVD-RAM, and CDRW systems. This family includes photo-detector IC, laser diode drivers, and advanced power control IC. Utilizing extremely high-performance Bipolar CMOS processing, the products of Sipex lead or
match all competitors in key parameters such as bandwidth, settling times and output noise. Meanwhile, Sipex is a semiconductor company that designs, manufactures and markets high-performance, value-added analogue integrated circuits. It serves the broad analogue signal processing market with power management, interface, and optical storage circuits for use in computing, communications, and networking infrastructure.

Sipex unveils photo detectors IC for 16X DVR-Writable drives (2004) Sipex Corp. has unveiled a photo detector integrated circuit (IC) supporting 16x DVD-writable drives in Milpitas, California. The SP8057 includes a special purpose channel utilized to monitor disc data during the low-power read-verify portion of high-speed write operations. The DVD-writer segment is expected to more than double year-to-year and the 16x-write segment represents the pinnacle of DVD-write performance. The SP8057 is priced at $1.35 in 100,000 piece quantities. An evaluation board is also available to assist in the evaluation of the SP8057. Datasheets and additional information on the SP8057 and other Sipex product offerings may be found on the company web site. The company's optical storage product family offers complete electronic solutions that enable faster read speeds. The family includes photo detectors IC, laser diode drivers, and advanced power control IC. Meanwhile, Sipex Corp. is a semiconductor company that designs, manufactures and markets high performance, value-added analogue IC. The company serves the broad analogue signal processing market with interface, power management and optical storage IC for use in automotive, portable products, computing, communications and networking infrastructure markets.
Loshin, David (2004)\textsuperscript{103} mentioned in his article a consortium of industry organizations has been consolidating protocols, roles and responsibilities related to collaborative high-end computing, all aggregated under the heading grid computing. Grid computing provides for collaborative sharing of distributed resources through a series of protocols for registering services, service/resource management, multiprocessing coordination and authentication and security for participants belonging to virtual organizations. The intention was to collect and standardize the protocols to better enable more organizations to exploit shared resources. The result is the ability to better affect both intra- and inter-organizational sharing and collaboration, which could better use available resources in a predictable way. Another benefit is the ability to transform a collection of desktop machine into a virtual parallel supercomputer. This is a great development that in some ways reduces the barrier to entry for companies to use the kinds of parallel platforms. Similar architectural platforms that were very expensive in the late 1980s and early 1990s can be had for the cost of a number of workstations, some networking infrastructure, some open-source software and a couple of system and software engineers to tie it all together. Moreover, grid computing services vendors are adapting the technology to potential business value in a rapid pace.

2.1.5 Information System and Access to Databases

Richards, Paul (2003)\textsuperscript{104} examines the impact of regulatory intervention in the pricing of access to directory information databases across the EU. Disputes over the terms of access have resulted in
conflicting outcomes. Pricing solutions include: usage based pricing; a cost partition according to the number of records taken; pricing by the volume of sales to end-users; or simply free access to the database. The paper argues first, that databases have the essential characteristics of public goods, which precludes unfettered competition in their provision. Secondly, there is no pricing solution, which will simultaneously achieve economic efficiency, stimulate downstream competition, maintain reasonable intellectual property rights, and cover the costs of the provider of the database itself. Trade-offs therefore need to be made.

Papastavrou, Stavros and Samaras, George (2000) proposes a framework for Web-based distributed access to database systems based on Java-based mobile agents. Short introduction to Java, mobile agents, and mobile aglets; evaluation of Apple-based approaches to web access distributed databases; adaptation and effectiveness of the proposed database management systems (DBMS) framework outlined.

Edwards, Kirstie and others (1997) evaluates the design of a user interface which aims to optimise access to library resources for the physically handicapped. Advantages to accessibility of library databases via the Internet; recommendations made concerning physical structure of access to databases; how the study was conducted; challenges faced by the motor impaired.

Dheeriya, P.L. (1996) provide a brief description of the various ways in which the international business faculty can gain access to databases, reports and other resources on the Internet. The objective of this paper is to provide a low cost, efficient way of retrieving data, which
can be used for international business research. This paper will be important to international business researchers (both academicians and practitioners) and students. By helping build the infrastructure for accessing information for research, this paper indirectly contributes to existing research.

Jaramillo, George R. and Squire, Jan S. (1990) describes the uncover database, a part of the Serials Access Control System management subsystem designed by Colorado Alliance of Research Libraries (CARL). Components of CARL; library catalogues; article indexes and access; information databases; data entry of information.

DoD Contractors to Discuss Government Access to Databases (1989) reports on the conference Computer-Aided Acquisition and Logistic Support Concurrent Engineering II: Government Access to Contractor Databases and Analysis Results on September 19 to 21, 1989 in Arlington, Virginia. Programs and activities; Sponsor; Contact information and access to distributed databases.

Motro, Amihai (1987) mentioned in his paper that important advantage of a database system is that it provides each application with a custom view of the data. The issue addressed in this paper is how to provide such custom views to applications that access multiple databases. The paper describes a formal method that generates such super views, in an interactive process of schema editing operations. A mapping of the super view into the individual databases is derived from the editing process, and is stored together with the super view as a virtual database. When this database is interrogated, the mapping is used to
decompose each query into a set of queries against the individual databases, and recompose the answers to form an answer to the original query. As this process is transparent to the user, virtual databases may be regarded as a more general type of databases. A prototype database system, that allows users to construct virtual databases and interrogate them, has been developed.

To conclude, there are little attempts of studies made on fashion design technology information and the value, fashion information can play in the national development and it is recognised of late. There are huge number of studies carried out on information system and services in various subject disciplines. Literature review indicates that the attempts are also made on information technology application for library services concentrating on infrastructure requirements to achieve the desired goal. The literature search yielded the fruits that the studies are undertaken to highlight how the integrated efforts can pave the way for access to remote and distributed databases for optimisation of information services to the user community.
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