AC 2010-568: THE ENGINEERING INDEX: THE PAST AND THE PRESENT

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The Engineering Index: The Past and the Present

Abstract

The purpose of this paper is to present a historical account of the many innovations introduced in this publication since its creation in 1884. This is a commemorative article for the 125th anniversary of one of the most important bibliographic sources for engineering and technology information. The paper is divided into five sections: J.B. Johnson: an Engineer, Scholar, Pioneer in Informatics and Humanist; The First Years up to the 1950's; The Sixties and Seventies; The 1980's through 2009; and The Ei Village and its Creator John Regazzi. Each section describes major changes, improvements, management and editorial decisions introduced. It also presents some information on the people that have made *The Engineering Index* (Compendex) a valuable resource such as J.B. Johnson, Bill M Woods, John E. Creps, and John Regazzi.

Introduction

The prominence of *The Engineering Index* as a technical and scientific information service has being recognized through the years. In 1976, Mildren[1] described it as "the major transdisciplinary index in the world's engineering literature." There are no doubts that this publication has been used for the last 125 years by engineers and technical staff all over the world, people that in one way or another have contributed to the development of today's modern society. Therefore, Ei is an intrinsic part of the history of technology. The history of *The Engineering Index* has been presented by several authors at different times. The most prominent have been the works of Hannum[2], Bissell[3], Landau[4], and Woods[5] which combined cover details from 1884 to 1984. More recently, Youngman[6] wrote about how the role of librarians has changed as reflected by the changes in the *The Engineering Index* as occurred, and Lafferty and Porter[7] in 2005 did a comprehensive review of Compendex. This article does not pretend to be a critical historical presentation of this publication; the intent is to present in one shot some interesting human and technical aspects of this publication that the author has found fascinating when preparing an exhibit to commemorate the 125th anniversary of Ei.

J.B. Johnson: an Engineer, Scholar, Pioneer in Informatics and Humanist

It is not easy to picture how life in academia was at the end of the nineteenth century without the basic comforts of modern society. The truth is that it was a time of many creative ideas that put in place the foundation for the development of new technological progress. J.B. Johnson was one of those creative people, but what set him apart was that he not only mastered the technology of his profession but also discovered the need for better organization of the technical literature. Out of his interest for doing things better, the idea of an index for the engineering literature was born.

Norman F. Koch[8], in his short biography of J. B. Johnson, best describes the beginning of *The Engineering Index*:

> "The Index of Current Engineering Literature" was started by professor Johnson because he found the need of such an index while doing research work. It originated in an outline of a few of his own engineering journals. This suggested a more complete index which

was then put out as part of the “Journal of the Association of Engineering Societies.” The work became too great to be handled by the editor of this journal and the “Index of Current Engineering Literature” was developed as a separate publication.

It is in F. E. Turneaure’s[9] 1902 article where we can glance at J. B. Johnson's own words about this new publication which make him a pioneer in creating information services:

> When I was elected professor in 1883, I felt my greatest lack lay in my ignorance of engineering literature. I once began to reinforce myself in these directions by going to the libraries and indexing the chief sources of such literature... in a book which I called "Index Rerun." At this time I was a member of the Board of Managers of the Association of Engineering Societies, representing the Engineers Club of St. Louis. At a Board meeting of the Association in 1883, I describe the work that I was doing for myself and offered to do it, somewhat more elaborately and free of charge, for the journal of the Association, if the Board would agree to publish it. This Board consented to do and the Index was begun... all indexing was done by professional engineers of more or less practical experience. The theory of the Index from the start has been:
>
> 1. to index only articles of permanent value.
> 2. to give such a short, concise, but adequate description of the article as would enable to determine whether or not it would be worth his while to obtain or consult the article.

J. B. Johnson had a very productive career as an engineer and his many publications testify to its scholarly production. Not only was Johnson a productive engineer, a writer, a good teacher and administrator, but also through F. E. Turneaure[9] we can see a very strong interest in the humanities. Here the creator of *The Engineering Index* expresses his opinion about his students need for learning:

> I beseech you, therefore, while yet students, to try to broaden your interests, extend your horizons now into other fields, even but for a bird’s-eye view, and profit, so far as possible, by the atmosphere of universal knowledge which you can breathe here through the entire period of your college course. Try to find a chum who is in another department; go to literary societies; haunt the library; attend the available lectures in literature, science, and art; attend the meetings of the Science Club; and in every way possible, with a peep here and a word there, improve to the utmost these marvelous opportunities which will never come to you again. Think not of tasks, call no assignments by such a name. Call them opportunities, and cultivate a hunger and thirst for all kinds of humanistic knowledge outside your particular world of dead matter, for you will never again have such an opportunity, and you will be always thankful that you made good use of this, your one chance in lifetime.

Indeed, he is a remarkable individual for his time. Professor Johnson, in his short career, published 52 articles and authored or co-authored 11 books and technical reports. Some of them such as *The Theory and Practice of Modern Framed Structures. Designed for the Use of Schools, and for Engineers in Professional Practice* were standard text books for an entire generation of engineering students.

Biographical sketch of J.B. Johnson:

Born on a farm near Marlboro, Stark Co, Ohio on June 11, 1850.
Attended Howard College in Kokomo, IN and Holbrook Normal School in Lebanon, IN.
Taught school in Indiana and Arkansas, 1868-1872.
Attended the University of Michigan, Civil Engineering program, 1874-1878.
Received a Civil Engineering degree at the University of Michigan, 1878.
Worked in the Survey Project of the Great Lakes, 1878-1881.
Mississippi River Commission, Assistant engineer, 1881-1883.
Professor of Civil Engineering, Washington University, St Louis, 1883-1899[9].
"During the years spent in this position he gained a world-wide reputation by his valuable contributions to engineering literature and his active work in connection with engineering and scientific societies."
Researcher, Forestry Division of the U.S. Department of Agriculture, 1892-1895.
Dean, College of Engineering, University of Wisconsin, Madison, 1899-1902.
Accidental death at his summer house in Michigan, June 23, 1902.

The First Years up to the 1950's

The early years of Ei are characterized first by a group of volunteer editors putting together the index until it was integrated as a regular publication. Second, the founding of professional societies such as American Society of Mechanical Engineers, ASME (1880); the American Institute of Electrical Engineers, AIEE (1884); The Institution of Electrical Engineers, IEE (1871); as well as the creation of the Association of Engineering Societies, AES (1880) and of the Engineering Societies Library, ESL (1913) were important factors that influenced professional activities of engineering faculty at the end of the 1890's and early 1900's. In 1904 and 1907, another two major scientific indexes, *Physics Abstracts* and *Chemical Abstracts* were initiated. During the period (1884-1959) covered in this section the occurrences of WWI, the economic depression of the 1930's, WWII, the post WWII economic and technical advances they all made significant impact in the development of Ei. Here are some of the most interesting events for this period (as presented by Hannum's[2]):

- "Index Notes" was first published in the October 1884 issue of the Journal of the Association of Engineering Societies. Abstracts to the entries were included a few years later.

- "Index Notes" From 1884 to 1891 were compiled into Volume 1 as the *Descriptive Index of Current Engineering Literature* which is the official first volume of *The Engineering Index,* published by the Association of Engineering Societies.

- In 1895, *The Engineering Magazine* published Volume 2 of the "Index Notes" covering the years 1892-1895 under the title: *The Engineering Index*.

- From 1906 (Volume 5) *The Engineering Index* was published annually in one volume.

- In 1919, the American Society for Mechanical Engineers (ASME) purchased *The Engineering Index*. It also started document services through the Engineering Societies Library.

- In 1928, a daily and weekly Card Services was introduced. Over 50,000 cards were produced in 1928 and in 1929.

Records published from 1884 to 1927[3]	
1884-1891	11,000 notes and cross references
1892-1895	6,000 entries from 62 journals
1896-1900	40,000 entries from 200 journals
1901-1905	50,000 entries from 250 journals
1906-1927	96,034 abstracts
From 1884 to 1927 it has accumulated 203,034 records.	

The following points were discussed in Bissell's[3] article:

- In 1929, an alphabetical author index and Library of Congress system of Subject Headings were introduced. Also the index began publishing two volumes annually.

- The world-wide economic problems of the early 1930's produced a reduction in the number of abstracts published and in the number of subscriptions.

- In 1934, the corporate entity Engineering Index Inc. was formed.

- From 1934 to mid 1950's the average number of records published was about 25,000 per year.

- With the advent of the *space era*, the *The Engineering Index* participated fully in the dissemination of technical information accelerated by the Spunik launch.

- In 1954, the one-millionth abstract was published.

- In 1960, a grant proposal was presented to the National Science Foundation (NSF) to improve services. That year 33,000 records were produced.

The Sixties and Seventies

This period is characterized as a time of experimentation with information retrieval systems. In the early 1960's, the transistorized computer was developed, ARPANET was created, and

NASA-RECON became operational. In the early 1970's, the first large machine-readable databases were introduced. OCLC, MEDLINE, ERIC, NTIS and SMART were some of the bibliographic systems available. Some of the initial database vendors were Lockheed (DIALOG) and Systems Development Service (ORBIT), followed later by Bibliographic Retrieval Systems (SEARCH).[10] It was a time of continuing improvement in hardware, networking, and software design for retrieval systems. A great number of new products were put it on the market. Ei went from investigating computer-based systems to developing of the Compendex online database. A chronological list of interesting events follow (as presented by Bissell's[3]):

- Engineering Index Inc, moved in 1961 from its original location in New York City to modern "air-conditioned quarters" at the United Engineering Center adjacent to the Engineering Societies Library, also in NYC.

- With initial funding through an NSF grant, *The Engineering Index Monthly* initiated its publication in 1962.

- In 1963, 43,000 records with abstracts were published.

- In 1963, Engineering Index Inc. received a grant from the Engineering Foundation "to determine the feasibility of new, possible computer-based, systems for handling technical information."

- In 1965, a pilot project for a computer-based indexing and abstracting service covering: plastics and electrical/electronics began operation. This was possible through a grant made by the National Science Foundation.

- In 1967, a magnetic tapes service called Current Information Tapes for Engineers (CITE) was started. It includes the two sections mentioned above.

- In 1968, Bill Woods presented six recommendations for improved operations at Engineering Index Inc. for consideration and action by the board of directors.

- In 1968, the modern entity Engineering Index Inc. consists of three divisions: Editorial Services, Development and Production, and Marketing and Business Services.

- In 1968, the electrical/electronics section was discontinued as part of an agreement with the Institute of Electrical and Electronics Engineering (IEEE) to avoid duplication of efforts.

- In 1969, another pilot project, the Computerized Engineering Index (Compendex) was introduced as a monthly magnetic tape information service. CITE was phased out at the end of that year.

By 1970, Compendex in magnetic tapes was fully functional providing access to the 5,000 monthly records of the *Index Monthly*.

In 1970, Ei presented the microfilm edition of *The Engineering Index Annual*[11]. The first three files were:
File A – The period 1884 through 1927
File B – The period 1928 through 1958
File C – The period 1959 through 1969

In 1971, over 85,000 abstracts and bibliographic records of engineering information were made available by Engineering Index, Inc. This represents an addition of 17,400 items, or a 20 percent gain, over the previous year.

In 1971, one of the Engineering Information[12] service brochure describes the services offered in this way: "The services offered include printed indexes and abstracts (including both bound and card versions, machine-readable magnetic tapes, a computer search-and-printout service, and a microfilm edition of Engineering Index."

John E. Creeps described the Ei network of services established by 1972 this way: "The network referred to is generally unstructured, but an array of specialized services does exist and there is communication between the members or "nodes" and often a given service organization will function as the referral point to users needing the services provided within the network." Creps and Carrigy[11].

Also, the emphasis of the roles or functions of Ei operations are identified as:
In-House abstracting
Interdisciplinary indexing
Vocabulary development
Interorganizational cooperation
Ei will provide a *search service* of its computerized data bank
Ei will provide subsets or smaller information packages for interested clients. Creps and Carrigy.[11]

In 1973, Compendex became available through online commercial vendors such as Lockheed DIALOG and ORBIT.

Bill M. Woods, Engineering Index, Inc. Executive Director since March 1968 resigned on March 25, 1973 due to ill health. He was replaced by John E. Creps. Bill M. Woods died on May 1, 1974.

Bill Woods catapulted Ei into the era of modern digital information. Woods obituary[13] is a testimony of his accomplishments:

> During his five-year tenure of office, Ei experienced a thirty-five per cent increase in the amount of engineering information published as well as a significant gain in prominence, both as a national and international organization.
>
> For Ei internally, Mr. Woods saw the implementation of his study which directed an Ei management reorganization and a computerization of the Ei production system. The

> results of these endeavors are still improving the timeliness of Ei Services, making provision for new and improved services, and will facilitate greater coverage of technical literature in the near future. Further, he presided over the institution of the computer-readable version (Compendex) of the Ei information base.

In 1974, an energy information service[14] was introduced. "In 1974, Engineering Index, Inc., having determined that there was a need for a separate abstracting service in the field of energy, sought funds from NSF for partial support of its effort to establish and market an energy information service consisting of monthly printed and magnetic tape abstract publications."

In 1975, the Ei Card Service was discontinued.[14] "Superseding this long-time (since 1928) Ei service was the selective access by Compendex, the machine-readable version of Engineering Index master data base. The card-a-lert classification system and corresponding code numbers continued to appear in the Compendex format."

In 1975, *The Engineering Index* published its two-millionth abstract.

An article in 1975 demonstrated the capabilities of Ei's research on information retrieval. "Relative Effectiveness of Titles, Abstracts, and Subject Headings for Machine Retrieval from the Compendex Services," by Jerry R. Byrne.[15]

In 1976, *A Brief Guide to Dialog Searching* was produced by Lockheed Information Systems. A concise presentation of the essential elements of the Dialog and the data bases accessible through it is provided. In addition to Compendex, another thirty-two databases are introduced.

In 1976, the American Institute of Physics, in cooperation with Engineering Index, Inc., developed methods by which both organizations could reduce costs by eliminating duplication of keyboarding and indexing. A successful interchange of indexed abstracts on tape was completed between these two organizations.

By 1977, *The Engineering Index* coverage reached another peak:

> The coverage of the Engineering Index data base includes more than 3,000 technical publications in all principal languages of the world. Included among the publications monitored are regular professional and industrial journals, as well as the proceedings, transactions, and special publications of engineering societies, scientific and technical associations, universities, laboratories and research institutions, government agencies, and industrial organizations. Approximately 30% of the titles covered represent papers from conferences, colloquia, and symposia. Technical reports, books, and monographs are also considered for inclusion. During 1977, more than 95,000 abstracts and citations were published. Grattidge and Creps.[16]

In an article published in the journal *Production Engineering*, November 1978 issue[17], the professional engineers of the time recognized the state-of-the-art of this publication:

> …the latest developments in the use of computers to provide better flow of technology through the engineering community are surveyed here. Much of the effort goes into literature searches, and there are countless data bases put together by specialized groups

> that can be accessed through on-line retrieval. Lockheed's Dialog with 80 data bases and SDC's Orbit.... A typical data base on Dialog is Compendex, a machine-readable version of the Engineering Index.....

In 1978, Ei Inc completed a study about the use and access of engineering numerical data; identified current shortcomings when dealing with data information and proposed online interactive technologies.

The 1980's through 2009

Some of the events in the last thirty years of this publication are: changes in the organizational structure of the company; the deployment of new products such as Ei Engineering Meetings, Engineering Index in CD-ROM, and Dialog OnDisc Ei Page One; a move to Castle Point, Hoboken, NJ in 1992; the creation of Engineering Information Village; and the acquisition of Ei by Elsevier Publishing Co in 1998. At the office in the 1980's, the personal computer in the form of microcomputers or minicomputers increased in numbers and the use of word processing software spread and some graphic capabilities emerged.[10] It is the beginning of a new era in information technology.

It is a challenge try to describe in one or two paragraphs the changes that occurred during the last twenty years in: computer hardware and software developments, communication and networks, electronics, nanotechnology, the dominant role of the web as a base for communicating technical information, the Google enterprise, and graphics and visualization technology, just to mention a few. For example, in the mid and late 1990’s, some areas of research were: electronic publishing; scholarly use of the web; solutions for solving problems with web-opacs; the emerging of the digital libraries; e-journals and e-books; data visualization; data mining, knowledge management; advances in global information infrastructure, and metadata creation.

The new century has accelerated the pace of change. Institutional repositories for preserving and displaying the scholarly/artistry production of the university community has become a new role for libraries; DSpace, Fedora and other publishing software have become part of the language of information technology. Digital libraries design and operation created a new set of technical expertise needed by professionals in the field. The concept of globalization in terms of economic cooperation and technical sharing together with recent financial crisis is impacting how information is disseminated. Countries such as China and India are becoming major state holders in the technical fields. The number of mini electronic devices (iPod, notebooks, and many others) are creating a new set of standards for the acquisition of knowledge, and unfortunately the cost of acquiring technical information has persistently become a problem during all these years. *The Engineering Index* adapted to new information technologies and new market strategies during these last thirty years. The following is a collection of events for this period:

The Engineering Index Inc. changed its name in 1981 to Engineering Information Inc. Engineering Information Inc, was founded as a publisher of information on *engineering research* and later expanded into a full-service engineering information organization.

July 1982. Ei Engineering Meetings database is introduced. It contained articles from approximately 2,000 yearly proceedings.

In 1985, Engineering Index in CD-ROM was released.

In the mid 1980's, search engines for bibliographic databases became more sophisticated.

A series of database seminars sponsored by Engineering Information (EI), Derwent, and Predicasts started in October 1985. The seminars demonstrated how the online services of the sponsors can be used together as an integrated information package for engineering.

March 1986. Compendex is made available on CD-ROM:[18]

> ...developed through a cooperative venture with Digital Equipment Corp. (DEC), are three subject subsets of the company's Compendex database: Aerospace Engineering, Chemical Engineering and Electrical & Computer Engineering. Initial distribution consists of more than 100,000 records in each subset added to the Compendex database between July 1983 and June 1985.

July 1986. STN International introduced Compendex to its line of databases.

In July 1987, Engineering Information Inc. introduced a Document Delivery Service for articles and conference papers cited in its Compendex and Engineering Meetings databases.

In May 1988, Dialog Information Services became the first host to offer Ei's Compendex Plus database to the public.

In October 1988, Orbit Search Service added Compendex Plus to its online databases.

June 1989. Ei developed a Compact Disc edition of Compendex Plus with Dialog Information Services Inc.

1992. Ei Compendex Plus is set up in institutions and university computer networks.

June 1992. Engineering Information Inc. relocated from New York City to the Stevens Institute of Technology in Castle Point, Hoboken, NJ, on the third floor of SC Williams Library.

July 1992. EI and Dialog Information Services Inc. created Article Express International, a document supply resource for disseminating engineering and technical literature.

September 1992. Dialog Information Services Inc. added Dialog OnDisc Ei Page One to its line of CD-ROM products.

July 1993. Ei introduced *Ei Concise*, a new database designed specifically for general colleges, technical schools, and public libraries.

September 1993. Access to Ei Compendex Plus was enhanced with the production of weekly online updates.

In 1994 Ei was restructured from a non-for-profit to a for-profit organization.

June 1995. Ei published a revised, 2nd edition to its Ei Thesaurus. It contains over 8,300 descriptors and about 9,100 terms for a total of approximately 17,400 access points.

In the fall of 1995, the *Engineering Information Village* was launched[9], making Compendex available over the World Wide Web. Ei Village offered a graphical and organized pathway to engineering information on the Internet. "In addition to the traditional indexing and abstracting, links to world-wide-web sites, access to engineering technical experts, and document delivery service make *Engineering Information Village* a very comprehensive information resource."

February 1996. Ei added a number of unique features to its recently introduced Ei Village[20]. "Village is constructed around 11 centers designed to help make locating global information faster, more interesting and more productive."

March 1996. Ei began providing direct web access to Compendex via the World Wide Web. It used Cuadra Associates' STAR Web Interface gateway to gain access to the Internet.

June 1996. Ei created new licensing agreements for access to its databases with a fixed-price basis.

July 1996. Ei announces version 2.0 of Engineering Information Village.

July 1997. Engineering Information introduced Ei Village for the German-speaking European community by an agreement signed with FIZ Karlsruhe GmbH.

In September 1997, InfoTrac (a low cost popular online database) announced access to Ei Compendex.

September 1997. The Community of Science (COS) announced the availability of an engineering research database on the World Wide Web called the Ei Compendex.

On January 30, 1998, Elsevier Publishing Co. purchased Ei. Engineering Information Inc. became a division of Elsevier. http://www.ei.org/

In March of 1998, Engineering Information Inc., introduced its software, Engineering Information Village, to China as well as Ei Compendex Web.

2003 - Ei enabled its customers to access data sources via one single Web interface.[21] "Subscribers to Ei's platform, Engineering Village 2, are now able to license INSPEC in addition to Ei's own database Compendex and the other engineering data sources that are provided as part of this platform."

In 2003, Carol Tenopir[22] proclaimed the end of the information interface with methaphors ("...the metaphoric interface illustrated the entire range of resources offered by the system. Moving the mouse to click on a bookshelf or a government building would bring up lists of specific resources to search. The author found these interfaces intuitive and strangely comforting.") – such interface was used by Ei Village for nearly a decade.

Scopus, a potential competitor of Compendex, was launched in November 2004 as "the world's largest abstract and indexing database" by the same Elsevier Publishing Co.[23]

Another competitor to Compendex, Google Scholar, was launched in November 2004. Google Scholar is a freely-accessible search engine that automatically mines data information from the full text of scholarly literature from an undisclosed number of publishing formats and disciplines.

2004 – Endeavor Information Systems and Elsevier Engineering Information announced a partnership:[24] "Endeavor Information Systems and Elsevier Engineering Information announced a partnership to develop an XML gateway from Endeavor's ENCompass for Resource Access *federated search system* to content sources hosted on EngineeringVillage 2. Researchers using ENCompass for Resource Access can now access the Compendex, Inspec, and U.S. National Technical Information Service databases."

May 2006 - Ei made available Ei Patents on the Engineering Village 2 platform.

Fall 2006 - Engineering Village Day Pass is introduced, it provides access to Compendex on Engineering Village for a 24 hour period.

February 2007. Dialog announced an additional backfile *The Engineering Index*. The new Ei backfile adds more than 1.7 million records, which covers 1884 to 1969.

December 2009 - Engineering Village discovery platform provides access to the following databases: Compendex, Engineering Index Backfile, Inspec, Inspec Archive, NTIS, Referex, Patents from USPTO and esp@cenet, Ei Patents, EnCompassLIT, EnCompassPAT, GEOBASE, Chimica, CBNB, PaperChem, and GeoRef. Engineering Village provides:

Combined database searching of all databases including deduplication.
Personalized e-mail alerts.
The ability to save searches and create personalized folders.
Easy, Quick & Expert Search options, all of which allow you to save and combine searches.
The ability to choose preferred output formats (citation, abstracts or detailed) for Selected Record sets, which can then be viewed, printed, saved, downloaded or e-mailed.
OpenURL linking to Endeavor LinkFinder Plus, Ex Libris SFX, Serials Solutions Article Linker, and Innovative Interfaces Web Bridge for local holdings checking and full text option presentation.
Links to full-text using CrossRef.
Links to document delivery services.
Context sensitive help.

Reference Services: Ask a Librarian & Ask an Engineer.
RSS Feeds and Faceted Searching.
Tags & Groups. Engineering Village.[25]

The Ei Village and its Creator

The concept was born from conversations John Regazzi had with engineering about the way the saw the internet as a vehicle of connecting people and organizations.[26] The solution was to integrate the prevalent set of organizational tools used in the print environment and applied them to a new set of information resources. A *village* that integrated databases, technical web sites, product catalogs and many other components took shape. In the fall of 1995, the Engineering Information Village was launched, making Compendex available over the World Wide Web. Ei Village offered a graphical and organized pathway to engineering information on the Internet. It provides a community atmosphere with the intention of creating user interaction and the graphical design put emphasis on the particular interest of the users.[27] Ei Village made a significant impact in the early years of the web on how technical information was organized and its creator deserves this recognition.

John J. Regazzi biographical information.

John Regazzi is currently a Professor at the College of Information and Computer Science, Long Island University. This biographical information was taken from his web page:[28]

> John J. Regazzi, one of the electronic publishing industry's most prominent executives, was appointed dean of the College of Information and Computer Science at the C.W. Post Campus of Long Island University, on July 1, 2005. Regazzi is the retired CEO of Elsevier Inc., the U.S. division of Elsevier, the world's largest publisher of scientific, technical and health information.
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> At Elsevier Inc., Dr. Regazzi developed the Engineering Village, the first online community for engineers; Scirus, the first search engine for science and scientific inquiry; and Science Direct, the largest and most used full-text article database for scientists and researchers in all fields.
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> From 1988 to 1999, Dr. Regazzi was president and CEO of Engineering Information Inc. in New Jersey. That company merged with Elsevier in 1999 and Dr. Regazzi joined the management of Elsevier at that time. From 1995 through 1997, Dr. Regazzi also served as chairman of Article Express International, a joint venture of Engineering Information Inc. and Dialog, the online-based information service company.
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> Dr. Regazzi has also held positions with H.H. Wilson Co. of New York; the Center of Alcohol Studies at Rutgers University in New Jersey; The Foundation Center of New York; Northern Illinois University and the University at Albany. He is the author of numerous articles and papers. He also serves on the boards of several non-profit organizations, including: the Ei Foundation, the Elsevier Foundation, Centre of Applied

Biology International (UK), St. John's Home for Boys in Far Rockaway and the Digital Advisory Board of the Association for Computing Machinery, Inc.

Dr. Regazzi holds a bachelor of arts in psychology from St. John's University; a master of arts in religion from the University of Iowa; a master of science in library and information science from Columbia University, and a doctorate in information science from Rutgers University.

Conclusion

From its humble beginning as a "basement" operation to becoming an important world-wide source for technical information, *The Engineering Index* and its many formats and variations have a place in the history of technology. The golden age of the print edition appears to have been in the sixties and early seventies. At that time, Ei was recognized as one of the major indexing services for technical fields. This happened just before electronic formats in the publishing business appeared. First, online databases using vendors like DIALOG and ORBIT emerged, later the CD-ROM format was introduced in the market. The CD-ROM version was used in libraries downloaded in single stations or in a local network that sometimes was available campus-wide. With the development of more sophisticated networks, fiber optics, the web, and lately WIFI, Ei products have adapted well to these new technologies. It also has the distinction of being a pioneer - with the creation of the Ei Village - in advancing information retrieval for technical information. In that respect, J.B. Johnson and John Regazzi appear to have a common way of thinking. However, we cannot dismiss the contributions make by other managers and leaders of this organization through the years that continued to improve services and created new products for the engineering community; that is the case for Bill M. Woods, John E. Creps, Herbert B. Landau, and many others.

The Engineering Index - its early formats, and its current database: Compendex - has made an important contribution to the retrieval of technical information. The scholarly, educational, cultural, technical, and economical impact of this publication would be very hard to assess. Nevertheless, we know Ei was, is, and will continue to be a very important bibliographic resource.

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