

# Inventors' Network Volume 10

Of the Capital Area [INCA] Issue 7

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MEETING: 3<sup>rd</sup> Monday,

**15 July 02**

Potomac Community Center  
11315 Falls Rd Potomac Md.

5:30 Networking among Inventors  
Pizza & Soft drinks, Dutch Treat

6:30 Mr Mark Gottlieb, DesignTech

7:45 Bill has delegated Ray to preside

## Our July 15 Speaker

**Mr. Mark Gottlieb** is V.P. of DesignTech International. His 100 - 150 person firm is located in Springfield Va. Their website is [www.designtech-intl.com](http://www.designtech-intl.com). INCA members may find our July meeting particularly rewarding if they can find time to do some "homework" by examining their website and visiting stores like Walmart to see the product in its intended environment: Being selected for retail purchase.

To be competitive in a mass market, Mark's facilities includes very modern electronic circuit-board manufacturing. His firm built over one million circuit boards last year.

His capacity in engineering design and electronic manufacturing may offer a channel for producing other inventor's products.

Mark and members of his design staff are a prominent members of IDSA. He is exceptionally-well qualified to share his earned insights on "Inventing for profit" and "Designing to Customer response".

**August 19 Program: Bryan Ruffner** is another one of our Inventor/Engineer/Business persons. His development shop includes machine-tools sufficient to make modest production lots of prototypes. He operates graphic and word processors to create pro-se patent applications and US and international targets.

Bryan is now ready to share specifics on how his products work and some of the lessons he has learned in his initial cycle of generating intellectual property.

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Have our new and seasoned members noticed the strength and vitality offered by our speakers for this year? Special thanks to John Melius. He has brought a University of practical, as well as theoretical art "from entrepreneur-inventors to our Inventors."

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Our June program was Dennis Van Dusen's story:

## The "Table Processor" that Evoked the PC Age

INTRODUCTION:

At the June 17, 2002 meeting, INCA was treated to an intriguing case study revolving around the critical chapter in the history of the personal computer --- the story of how the crucial applications for it were conceived. This was a story of Dennis Van Dusen executing invention and development by the book, a story of uncanny vision, meticulous market assessment, and entrepreneurial zeal. Along the way, there were personal encounters with Bill Gates (who earlier had been a Harvard classmate), Paul Allen (Microsoft Founder), Steve Balmer (now Microsoft President), Steve Jobs, and a number of the other now legendary personalities of personal computer history.

In the end, the effort at the initiating company -- Texas Instruments -- fell short of being the crucial milestone in their earning a goldmine from the evolution of the personal computer. The recognition of the ways that the computer would be used was less important to them than the integrated circuitry involved. However, the fallout yielded VisiCalc which, in turn, provided the basis for the success of the Apple II.

Dennis Van Dusen is a Penn State and Harvard engineer with a Harvard ME (joint with Business School). In the mid 1970's he was a consultant to the US Senate architecting computer mainframe applications for automating the handling of responses to Senatorial constituent mail. He joined Texas Instruments (TI) as Business Development Manager for the new Personal Computer Division which was an offshoot of the Calculator Products Group. His task (he was the whole department initially) was to develop the business case for a TI Professional Personal computer.

His initial approach was to develop a methodology based on the perceived needs of professionals in occupational sectors using SIC codes as a guide. Demand was projected as a function of price for the years 1977 to 1987; in retrospect that forecast proved 95% accurate.

An extremely high value portion of the application concept was a new computer tool for enhancing spreadsheets into a more friendly, faster and much more flexible business tool. He spoke of this experience as being his greatest satisfaction, but financially, a significant disappointment.

## HISTORY

Dennis had been a student consultant in a Harvard Business School project team for computer-use customers within the US Senate. His product application for "answering the mail" with a common-technology word-processing system was well received. As a very young man he had demonstrated a mastery of improving efficiencies in intellectual work.

Dennis was sought out by the Texas Instrument company (TI) as a new-product business development manager. His initial charter was to conceive and generate ways for improving the work-efficiencies within then-high-technology corporate businesses, starting with TI. They had multiple teams charged with developing a mid-1970 'personal' computer product.

Within TI, he was working in an environment rich in data. His two senior levels of management were hungry for evidence that a future TI computer would be as popular as their new hand-held electronic calculators appeared to be. Dennis conceived of the idea to "mine" TIs ad hoc data base to quantify the kind of work that calculators were being used for. He also interviewed a number of internal TI users to see what consumed their minutes of a typical day. This data, combined with "Occupational guides" helped him define working tools to overcome tedium in the work of Manufacturing, Accounting and Engineering in its fields of Electrical, Mechanical, Civil and Industrial, as well as 60 other occupations.

Dennis' product-development territory was to define a suitable product that would capture a sufficiently big-enough market to be appropriate for a TI major investment and managerial commitment. A hand full of very small companies such as Altair, IMSAI, Cromemco were offering remarkable, though specialized products. Commodore, Apple and Radio Shack had their systems on the design table.

As he defined a marketable scope suitable for improving the net cost of internal TI performers, professionals, and programmable calculator users, his product vision became focused on a family of generally-needed working tools that would resonate with already- appreciated "winning environment" expected from young business people. For instance, some professors at Harvard Graduate School of Business were demanding a depth of detail and quantitative research more characteristic of hard science than mere business.

If efficiency-enhancing tools were made a part of the TI personal computer, its market-demand would be even better than the electronic calculator. He was able to program, on calculator-size computers, a simulation of

how a limited memory-size personal computer might be applied to greatly simplify the making and managing of a working spreadsheet.

His business forecast of this application was within 5% of the resultant actual data.

- Note 1: The number of personal computers in use in 1981 was 2 million; in 1982 was 5.5 million; and by 1992 was 65 million.
- Note 2: The estimated personal efficiency within the personal computer environment over 10 years has been enhanced from 60% to 88%.

Dennis and many of his classmates (including Bill Gates) remembered the extensive mind-labor and necessary tedium and detail for calculating each block of a spread-sheet. [ Microsoft calls this spreadsheet tool "Excel". Word Perfect (Corel) calls their spreadsheet "Quattro Pro".]

Dennis flashed upon our screen his script and hand-lettered planning worksheets that traced the evolution of his conceptual "tool kit" for intelligence-workers from its conception.

His first tool of 5 was, of course, a word processor. TI wanted to call this a memo processor due to the limited facilities it believed a Personal Computer could provide. Other tools were:

- Table Processor --- a 'super' calculator to utilize the new facilities offered by the screen space and processing power of the TI Personal Computer, and to differentiate the product offered by the Calculator Products Division from the one offered by the Distributed Computer Division of TI which was more of a time-share replacement with BASIC.
- Network Processor --- point-path, node and edge oriented 'what if' tool (for pert charts, etc.).
- File Manager --- a tool for managing files on top of the Disk Operating System, including an ability to describe files.
- Data Manager --- a database manager for working with structured data.
- Data Processor --- a programming language tool that was contracted out to a new company called Microsoft for \$75,000 for development --- to be based on the Altair Basic tool.
- Communications Manager --- for terminal oriented and page/document oriented communications management, including the ability to share files.
- Calculator Sub-Mode --- a pop-up facility embodying the TI Replay Professional Calculator.

His second tool, the "table-processor" was conceptualized as a means to remove unnecessary labor from the calculator like needs of spreadsheet development and maintenance, as an extension of the word processor technology, TI's Replay calculator concept, the programmable calculator, and the TI 'workstation' computer terminal on a desktop. It was based on the confluence of these concepts, aided by the need to differentiate from the calculator by having a greater utilization of the 'immense' amount of 'real estate' on the computer screen relative to the small display on the calculator. It was also based upon the differentiation against time-shared or central computers by allowing a user to program 'locally' on the screen, for rapid 'local' processing, and for immediate 'local' display of results which could not even be delivered over the then existing communications lines as fast as the local system was able to display. This last concept was called 'Bandwidth to the User'.

In the original charts shown by Dennis, a series of marketing-related projections, now termed "proforma" displays in business plans, are displayed as spreadsheets, and are an expected display for each set of core assumptions as well as the extensive range of "what if" other assumptions that might reveal a more effective strategy. These charts, the calculations for which were programmed on an TI SR-60 calculator, showed the market size effect of efficiency improvement for each of the 70 or so occupations studied.

Dennis' criteria for his "table-processor" was subject to an inside engineer's review prior to a critical design review of his project. He displayed for INCA a copy of the engineer's findings, that appeared to be a very accurate expression of the tested concept of his "table processor". To his great surprise at that time, the TI management team did not select his vision of where they were ready to further invest funds and professional resources. Dennis asked how they intended to use the work he had performed and they invited him to keep it all, as his personal asset.

At about the same time, Dennis interviewed Dan Fylstra, a Harvard Business School Student in his fall semester of his second year, who had applied to work in the TI department with Dennis. Dan showed great enthusiasm for the approach Dennis took on the design of the personal computer software, and was shown a complete business plan for the product line.

Dan and Dennis embarked on a professional relationship. Dan had a computer software company called Personal Software, which was very small, and whose products included an 'assembler' and a couple of game packages for the Commodore Pet. He was by that time improving his business as a part of the CMP second year project course at HBS. He decided to move to Texas to work with Dennis at TI, and Dennis rented a post office box in Lubbock for Dan's company.

As Dennis became more disinterested in TI, Dan was becoming more convinced that his company could succeed if he adopted the product line he saw of Dennis' invention. He invited Dennis to a meeting with Joe Gal, a venture capitalist in Boston, who was a friend of Dan's Marketing professor. Dennis sent the business plan and the design documents for the table processor to Dan for presentation to Joe. After the meeting with Joe in downtown Boston, Dennis met for lunch with Dan at the Garage in Cambridge, and Dan stated that with the \$70,000 that Joe was offering for the investment, that he could not see any way of having Dennis move to Boston to join the company, but that he would work together on the product as well as he could. Joe did pay for Dennis' trip to Boston, at least. (Dennis presented the material shown to Joe Gal and showed the receipts used to obtain the reimbursement from this trip.)

With this, Dennis left TI and worked with Peat Marwick in Washington. He also worked in the personal computer community, for Steve Jobs of Apple and on other projects, while Dan was getting Dennis' 'table processor' programmed to run on the Apple, the pre-IBM operating system, as what was to become known as the "VisiCalc" software. Since Dennis listed these activities on his employment papers, the Senior Partner of Peat Marwick in Washington, Stephen Harlan, informed Dennis that he would have to cut off all outside involvement immediately or be discharged. Dennis continued his efforts unofficially, being the alpha tester and helping on the documentation for VisiCalc for Dan. He showed the original material, business plan, and disk of VisiCalc used for that. He introduced the Apple and VisiCalc into Peat Marwick, and provided an impetus that extended their involvement for years with Apple.

#### **VISICALC'S LESSONS ABOUT PROPERTY**

In the mid-70s the intellectual property community treated software as, at best, a copyrighted expression and not patent material. If money were to be made with software, it would probably be a 'trade secret' or linked to a hardware product whose "secrets" would include processing software.

There are many successors to VisiCalc, but no licensing of the concept has ever occurred. As early software companies adapted the function of a table processor to their unique programming they examined others programs to see a common base. However, there were a few cases taken to court, but without Dennis' material, all were hopeless because no one had proof of concept ownership. Some were settled when copywrites were involved, but Dennis was involved in those for the defense, and the settlements were minimal.

#### **VISICALC's CONTRIBUTION TO THE PUBLIC DOMAIN**

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INCA, a volunteer group of inventors, herein thanks Dennis for his contribution of VisiCalc's original conceptual basis to the public domain. Many of us are better off for having used his tool of enhanced efficiency. Most of us appreciate how his tool has greatly reduced the tedium from important parts of our professional work.

If we could also be spokespersons for the Nation, we would express a special thanks for his contribution of cultural enhancement resulting from the abrupt increase in personal productivity within the USA caused by this concept.

Special Thanks to Richard Leshuk for introductory comments within this story. Thanks also to Dennis for bringing accuracy into the details of the story.

Copyright 2002, Dennis Van Dusen      INCA has added this copyright notation because we want to know who would like to copy this article.

## **RESEARCH AND INVENTION ON BEHALF OF THE BLIND**

Nils Erickson and Richard Leshuk encourage INCA inventors to spread their creativity toward enhancing the environment for the blind. Richard has announced a high likelihood of bringing one of the high-cost modules to an INCA meeting in the future. In the meantime, tune in on Baltimore's Tech Center: <http://www.nfb.org>

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**From: UIAUSA**

## **National Inventors' Month [- August -]**

Nearly 4,500 libraries and schools have already requested UIAUSA's banners, posters, crossword puzzles, bookmarks and educational materials that draws youth attention to inventing.

This program has grown 10-fold in 2 years. It has been created by UIA, the Academy of Applied Science and Inventors' Digest. One of its handouts says: "Got a Great Idea? Proceed with Caution!"

Note: Bill Baker, who heads the Oklahoma Inventors Association reports that they sponsored eight libraries with their donation of \$98. UIAUSA encourages individuals to sponsor at least one library with a \$12.25 tax-deductible donation.

Send the donation to: Academy of Applied Science c/o Inventors' Digest,  
30-31 Union Wharf, Boston, MA 02109.

You can also make a donation through our secure server on the UIA web site.  
<https://www.spiders-webs.net/direct/nimfundraiser.htm>

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National Inventors' Month is being CELEBRATED at ICON2002 ~-Friday/Saturday, August 2-3 Syracuse, NY at SUNY's Onondaga Community College

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This is the location for **USPTO's 7th Annual Independent Inventors' Conference**

USPTO has been conducting their annual independent inventor's conference close to the greater Capital area. However, this year that conference is going to the Whitney Applied Technology Center which exhibits hundreds of 19th century patent models.

As usual, this inventor's conference is tailored to assist inventors, entrepreneurs, small business persons and IP practitioners in fields of intellectual property, commercialization, invention evaluation, licensing and business funding/development.

Speakers include: John Calvert, Dr. Jerry Udell, Marcia Rorke, Prof. Larry Udell, Don Kelly, Pamela Riddle-Bird, Bob Lougher, Marcene Sonneborn, William Crutcher, Eleanor Meltzer, Anne Kelly, Carol Oldenburg, Andy Faile, Michael White...and more. Conference keynotes by "National Inventors Hall of Fame" inductee Dr. Forrest Bird and by US Patent Commissioner Nicholas Godici.

This low-cost event (**\$75 for the two-days program including lunches, snacks, beverages and a conference CD**) offers high-value educational growth from speakers, plus face-to-face opportunities for networking and one-on-one counseling.

Details & Registration: **Call toll-free 1-866-767-3848 or go to <http://www.uspto.gov/go/iic2002>**

**Newsletters** Our webmaster has made our newsletter text for 2 ½ years available for reading and printing in acrobat format (.pdf). If Ray gets lucky in finding or fixing his stored-disk information for year 2000, that additional year's record will be added to our openly-shared records.

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We are still in a search for a volunteer computer-literate person to help distribute our monthly newsletter directly onto our member's e-mail. Call 703 971 7443.

## **PROTOTYPES AND MODELS**

The **Association of Professional Model Makers** has scheduled their 2002 National conference for

Sept 20 - 23 at Silver Spring Md.

On Friday 9/20 and Monday 9/23 they will offer Technical Tours by bus @\$60 per person per day to:

\*Black and Decker / DEWALT Industrial Design & Engineering

**\*US Army CAD/CAE Facility (This is the focus for our INCA field trip that was cancelled due to 9/11 terrorists.**

**\* Direct Dimensions (whose President, Michael Raphael, has been a presenter to INCA and is an INCA member.**

**\* Smithsonian Office of Exhibits Central, both Workshop and Tours**

**Registration is \$645 for the 4-day event.**

**More information on [www.APMM2002.com](http://www.APMM2002.com) and on  
[www.modelmakers.org](http://www.modelmakers.org)**