

Harnessing the TECHNOLOGY DEMON

by
Jesse W. Brogan
Management Engineer

brought to you by
THE MANAGEMENT UPGRADE SHOP

Harnessing the Technology Demon

Copyright by
Jesse W. Brogan, 2003
ISBN 1-932729-01-1

Author and producer: **Jesse W. Brogan**
Published by: **The Management Upgrade Shop**

The Management Upgrade Shop is a corporation with the purpose of promoting the development and use of the science of management. This includes both the training of industrial engineers in the technical aspects of the subject, and training managers in general use, supporting their individual and artistic applications.

Rights to Have and to Copy this eBook

JESSE W. BROGAN owns the contents of this book. THE MANAGEMENT UPGRADE SHOP has been given the right to copy and/or transfer copies of this work to holders. It may not be further copied or distributed without a separate agreement with the Author or the THE MANAGEMENT UPGRADE SHOP.

Foreword

The health of a business is gauged from two measures; earnings from the sale of product, and cost to operate. These are the only two elements needed to track both profitability and efficiency of operation.

The Macro-Rule for Internal Investment:

If a proposed change does not increase earnings,
or decrease costs, it cannot improve business efficiency.

It is now common to make information-related decisions in defiance of this rule. Few of these decisions improve business for those who make them. The cost of operation tends to rise with every change in office automation, while there is little if any effect on what a business produces.

The technical term for this is "inefficiency."

Read the on-line reports from the Government Auditing Office. A substantial number of our information systems are in a state of failure. There is so much hype about improvement that the facts are ignored, and even more out-of-control spending is applied to try to resolve these failures.

Those who use modern technology aren't getting wealthy from its use; the wealth goes to those who produce technology goods and services. Modern managers are making the decisions, but the benefit flows into the pockets of those who produce and sell information technology products.

This might seem to address a reasonable expense, but only if technology customers are able to further the basic operation of their businesses. They do not.

PERSPECTIVE

Business relates to Information Technology
As it does to the Internal Revenue Service.

Something is very much out of true. The efficiency analyst looks to value relations to uncover the challenge, and to derive a direction for solution.

Information technology is rarely a part of the business product, it rather adds value by meeting the needs of office-based employees. The value of information technology is measured by its impact on other business operations. The value is in support of management; and management makes use of technology products.

The information needs of office management have not changed materially in the last thirty years. Unless those needs change, there can be no change in business-based value.

Needs for information have not changed,
but dollars continue to flow away.

On the surface, this might seem a frivolous challenge, except for our definition of management. It is gaining through the efforts of others. Information technology has proven most startlingly lacking in support for "gaining through others."

What it has done is to make information more available. That has had some beneficial effects in specific jobs, but has not lead to notable improvements in productive performance. Technology has made it remarkably easier to present information to those who need it, but this has also proven ineffective at impacting on what the business produces to earn income.

To the contrary, every technology advance seems to generate its own internal support needs. The "quality" of internal management products goes up, and so does the cost. The productive performance remains the same.

The deeper challenge is not in the loss of efficiency, though that should be cause enough for concern. The challenge is in losing efficiency while we think that we are becoming more efficient. We face a serious vision problem within modern management. There is a distraction from intelligent management when addressing automation.

We have become convinced that the best way to manage automation is to avoid management, and let our technical people do it for us.

This text is designed to help the manager see the reigns clearly, so that he or she can pick them up and take charge. It is a revelation of basics for applying management in this new area, so he or she can bring this internal support effort to serve a productive purpose at a reasonable cost.

Table of Contents

| | |
|------------------------------------------------------------------|-----------|
| <u>Foreword</u> | 1 |
| <u>Table of Contents</u> | 4 |
| <u>1. Introducing the Demon</u> | 7 |
| <u>1.1. Who is Jesse Brogan and Why Him</u> | 10 |
| <u>1.2. The Plumber's Syndrome</u> | 14 |
| Recommendations and Dire Threats | 16 |
| Experts in Information | 17 |
| Preying on the Ignorance of Managers | 18 |
| Solution – Manage the Technology | 20 |
| <u>2. How-To Harness the Demon</u> | 22 |
| <u>2.1. Setting the Stage for Intelligence</u> | 23 |
| <u>2.2. The Computer as an Office Tool</u> | 25 |
| Tools Overhead | 26 |
| Open Architecture and Information Overload | 28 |
| <u>2.3. The Cost of Increasing Complexity in Programs</u> | 29 |
| The Information Manager | 30 |
| The Witness of a Multi-User PC | 32 |
| The Witness of a Multi-Table Database | 33 |
| Jargon Rules when Intelligence Fails | 34 |
| Technology Values & Management Values | 36 |
| <u>2.4. The Art and Science of Management</u> | 37 |
| Functional Definition of Management | 38 |
| Functional Definition of Supervision | 39 |
| Functional Definition of Leadership | 41 |
| Supervision Vs Management of Information | 42 |
| Analytic Techniques | 44 |
| What about Exception Management | 46 |
| Information Management and the Science | 47 |
| Intelligent Tools Emulating a Dumb Terminal | 48 |
| <u>2.5. Management Basics Not Currently Employed</u> | 51 |
| Something to Gain through Others | 51 |

| | |
|--------------------------------------------------------------|------------|
| ADP is Not Something to Gain | 53 |
| Someone to Gain it | 56 |
| Authority to Direct | 59 |
| Support Efforts Demanding Support | 60 |
| All Management is Local | 62 |
| <u>3. Specifics for Harnessing the Demon</u> | 65 |
| <u>3.1. The Value of Information</u> | 65 |
| Valuing Internal Support | 67 |
| The Value of Internal Support | 68 |
| The Value of Information Support | 72 |
| Specific Values for Information | 73 |
| <u>3.2. The Cost of Information</u> | 74 |
| Good Management Practices and I.T. | 76 |
| Understanding Bad Management Practices | 79 |
| <u>3.3. Valuing I.T. Expertise</u> | 81 |
| Supervision over I.T. Expertise | 84 |
| Selection of Office Software | 85 |
| Values – Basic Office Operations | 90 |
| Values – Advanced Office Applications | 92 |
| The Internet and Valuing the Information Highway | 95 |
| <u>3.4. The PC and Networking</u> | 100 |
| Client and Server in Business Applications | 103 |
| Designing ADP for Man-Machine Efforts | 107 |
| Designing ADP for Groups of Man-Machine Units | 112 |
| Designing Computer Programs for Management | 116 |
| Designing Information Flow | 121 |
| Designing Information for Management Modules | 123 |
| <u>3.5. Modular Structure and Performance Systems</u> | 128 |
| Modular Structure and Information Support | 132 |
| Modularizing the Captive Program | 136 |
| Perspectives, the Amount of Management Effort | 140 |
| <u>4. Understanding IT</u> | 143 |
| Historical Prelude | 143 |
| <u>4.1. What is a Computer</u> | 146 |
| The Computer Operating System | 153 |
| Computers in Science – Number Crunching | 156 |

| | |
|--------------------------------------------------------------|------------|
| The Computer in Business – Accounting and Payroll | 157 |
| <u>4.2. Challenging the Demon</u> | 160 |
| ASCII and COBOL – Standard Language | 160 |
| ARPA, The Original Information Highway | 162 |
| The UNIX Challenge | 165 |
| <u>4.3. Personal Computing, the Microchip Miracle</u> | 169 |
| IBM PC and DOS | 172 |
| Beyond DOS | 175 |
| Third Party Software Providers | 176 |
| Basic PC Networking | 179 |
| Windows as a Network Operating System | 184 |
| Communication Networking | 189 |
| The Distributed Network Myth | 194 |
| <u>5. Perspectives for I.T. Entrepreneurs</u> | 201 |
| Simple Designs for Simple Purposes | 201 |
| Database Opportunities | 203 |
| Client-Server Database Design | 208 |
| Modular LAN Software | 211 |
| E-Commerce, Value Analysis | 216 |
| The E-Credit Card Intermediary | 219 |
| E-Commerce, The Virtual Library Business | 221 |
| Management Support Programs | 225 |
| UNIX-Database Access | 227 |
| LINUX Personal Computer Interface | 228 |
| Word Processing and Spreadsheet Utilities | 229 |
| UNIX Database Engine | 231 |
| Management Science Development Website | 231 |
| A New PC Operating System | 235 |
| Industrial Robotics | 240 |
| <u>Biographical Foundation</u> | 242 |

1. Introducing the Demon

Just what is a Demon? It calls to mind images of vile and twisted creatures of great power and harmful nature. It conjures up one of those ethereal nightmare drawings by William Blake. A demon is said to possess a man, entering into him and taking him over so that the man does what the demon directs. Surely this has nothing to do with the oh-so-neat and clean image of Information Technology. Is there really something dark and evil concerning this direction for human knowledge?

One might point to the many dark and mysterious games with names like “Doom” and the sounds of weapons and torment. These aren’t computing; they are just voluntary uses for modern computers. No matter how prevalent these games may be, they are just a choice. Surely these products do not speak to the information technology used by game builders.

Just what is a Demon? The answer is not discovered through images, or even through definitions. A demon is a spirit, and it can only be truly understood “in the spirit.” It is a spirit that is opposed; it is one that intends harm or death. Whatever is encountered in this contrary spirit of harm and death is, in that sense, a demon.

A Demon Is:

A spiritual being or entity
in opposition to life and well-being
aggrandizing itself by doing harm to others.

At first, the application of the term to information technology would seem presumptive. We should not apply labels until the facts are reviewed.

The facts concerning information technology are remarkable. They are already well known. Even while common and obvious, yet they are set aside as having no real importance for understanding technology.

For an effective understanding, we start with a single basic purpose that defines the life and health of every business. It is found in earning profits for owners and investors. Profit is measured by what a business earns through the distribution and sale of its products, less the costs of operating the business while it generates and delivers these products.

The common purpose of business is profit.

Basic business operation is determined by just two value measures. The first is the value of products distributed to customers. The second is the cost of generating that value through the operation of the business. Like breathing out and in, these are the basic functions that tell us a business is alive.

A business effort has many indicators for its quality of life, but its life is still inherent in these two essential performance measures. The business that fails to produce and deliver product will soon cease to exist. The business that costs more to operate than it produces will eventually be abandoned by its investors and owners, causing its effective death. The mark of any demonic presence in a business must be a distraction from these basic life functions. The demonic influence is an insistence upon the importance of other things, so that emphasis on the basic life-purpose is lost.

Demonic possession of a business or industry may be defined as a spiritual interference with the life and health of the business. A technology demon would be visible through situations where the business does things to support information technology, instead of using the technology to support and sustain its own life functions.

The Technology Demon is:

a spirit of interference with business
aggrandizing information technology
at the expense of business profits.

There is another aspect to a demon. It is more than just a distraction from those things that define life and health. It is not just an evil and opposed influence, but is a presence in itself. A demon has an identity marked with the elements of its own life. It is not only alive, but is intentionally opposed.

Is there any intention in the information industry to harm business interests?

The demon is a creature. The demon is marked not only by its opposition to life and health, but by its emphasis on its own independent existence. The demon aggrandizes itself at the expense of those it torments. It gains power over its victims through distraction from their life and health. It distracts from these essentials as a way to gather its powers. It assumes influences over its victims as the source for its existence.

The mark of the demon is not seen in just any distraction. The distraction of a demon is to itself. The mark of the demon is an entity making itself seem important and powerful at the expense of the life functions of its victims.

Do we really have a technology demon?

Information Technology has carved out its own place in the operation of modern business organizations. It has its own leadership, its own internal products and its own sense of importance and value. It comes with a strident insistence on its necessity for performing modern business operations, touting the value of its products. Yet we will see that office automation produces little value for a business; though it licks up dollars like an anteater on a termite mound.

We will see that these products have little effect on either what the business earns through sales, or what it produces for distribution to its customers.

The mark of this demon is fairly obvious, if only we can bear to look upon it. Modern business expenditures on information technology are essentially unending, but the expenditures yield little if any benefit in the basic function of the business. There is reduction in business profit from expenditures on information technology. There is a distraction away from the importance of profit, and toward the need for information technology support. The basic definition for a demon is met, even if the demon is not clearly seen.

The technology demon is not a disease to be cured. It is a presence to be harnessed and put to work for the benefit of those who run the business. A manager can handle the problem of the demon by taking charge of information technology, and directing it to his or her purposes. Where a manager takes charge, the demon is powerless, and its ability to harm evaporates.

1.1. Who is Jesse Brogan, And Why Him?

My name is Jesse Brogan, and I am an unpleasant reality check for information technologists. I am technology aware. I am knowledgeable, well experienced and effective in use of information technology tools and equipment. I am also in sharp discord with the current wisdom promoted by information technology leaders.

Worse still, I am able to present my differing understanding in the language of management. My presentation opens this knowledge area so that the technology demon is exposed before those who have authority to bring it into harness. I am able to show managers how to bring this aspect of business under effective management, harnessing this demon to gaining performance through the efforts of others.

I started working with computers in my college years, in about 1963. I was writing FORTRAN code long before there were personal computers. I was using these early machines before the advent of microchips and integrated circuits.

In the early part of my career I was a traditional efficiency engineer. I was then more directed to efficiency in the operating environment than to efficiency aspects in management as a separate performance area. I was involved in the usefulness of technology to managers. Back then, there was no need for any separated information management. Business really was in charge of its information.

I was an early expert in the field of cost accounting, one of the first information application areas supporting business management. Cost accounting addresses man-hours of work and units of product. It is distinguished from the dollar accounting of traditional financial management.

It wasn't until the 1980's that I got heavily involved with the technical side of information. I found myself faced with the personal computer with its immense potentials for productive use. I was involved before the popularization of the IBM PC with its DOS foundation. I was there to observe its early years, and to see it develop into the awesome piece of office equipment that it has become.

I have written machine code for early computers, including special programs for background operations. I was doing this long before background operations were supported by modern programming techniques. I have written in Basic and 'C' languages. I have built useful applications using dBASE III+ (dBASE ® by Ashton-Tate), Lotus 1-2-3 and several other of the early programming languages.

More recently, I have been writing SQL queries, and converting data from one format into another to support true distributive processing. This is unlike the direction preferred by more-modern computer technologists. The industry now encourages reliance on such networkable programs as Oracle or Microsoft Access; and these only marginally address distributive processing.

I am not like the younger programmers who have learned from reading about the early applications. I am one who put those earlier programs into practical use while they were still considered cutting-edge computing.

I was networking PC operations between multiple computers before there was any effective PC network. This involved carrying storage media (the old floppy disks) from machine to machine so that data could be shared and used.

Computer technology was not my focus. I was a work-based engineer, with my primary expertise in gaining performances through those who do the work. When I wrote programs, it was to accomplish something in support of ongoing operations.

I am not a well-focused technologist. I am rather someone who understands technology applications in ways that are not readily available even to those who now lead our rapidly expanding information industry.

Information technology is a young industry, and it is peopled with many young practitioners. Few have my level of foundation, but rely upon the written recollections of people like myself, people of experience.

Those whose experience has been largely on the technology side are heavily preferred as knowledge sources. These are not the ones most likely to identify value and cost, but those most able to identify areas where technology can be effective. Their definition of “effective” is not based on functional value for a business, but on what the computer can do as a tool.

I don't just answer those who challenge my credentials, but can return the challenge. I was familiar with automation tools long before most people even knew what a computer was; and I was successfully writing code to perform useful functions. I can toss the challenge back, *“Who is it that is asks for my credentials?”*

I will give a perspective based on direct observation that is indicative of true values. Common managers were most effective at using computer technology to support their management efforts in the 1993 to 1995 time period. I determine this by observing the amount of

information being handled and manipulated by individual product-oriented managers. I specifically note that this is not the measure preferred by information technologists and computer specialists, as they are more interested in the capacity of the machine than usefulness to its principle users. I set the high point as the period where the information handling machinery was most useful to the manager in performing his or her individual function of gaining performance through subordinates.

Since that time, there has been a reduction in manager use; and it marks a loss of function. Managers have backed away from making personal use of the computer for direct support of their management efforts.

The amount of computing in support of management has not decreased markedly. Managers are rather directing an increasing amount of this work to technology-savvy subordinates and information specialists. These subordinates are performing the information handling work that was previously performed directly by managers.

Office technology is losing its functionality for managers, and losing it to technical support personnel. At the same time, the cost of automation is rising sharply in both dollars and manpower consumed. Those who have work to accomplish using information are now backing away from the office automation tools that were directly applied by managers less than a decade ago! Managers are now hiring computer experts to do the work that almost any manager could perform using older computer solutions.

Calling this an improvement shows the loss of perspective; and is one potent indicator of the demonic presence. There may be improvement under some definition, but it is not any improvement in meeting the purpose for business or the purpose for management. Information technology is increasingly achieving distraction from the business purpose, and focus on its own definition of value.

Why listen to someone like me? The answer is that I know what questions to ask in order to address value. I am someone who sees the face of the demon, and has reason to be unimpressed by it. I am focused on the health and welfare of the business, not on our continued feeding of this gluttonous demon with the potential profits of technology-customer businesses.

This work is more than a technical how-to for managers, though it certainly fills that bill. It is a guidebook to seeing and understanding technology so clearly that a manager can take charge of it and harness it to his or her use.

My personal motivation will almost certainly be challenged. If the manager is going to get enough new perspective to take charge without further guidance, where does that leave me?

I am like a tour guide. I am someone who has gone before and learned of the sights that bring a manager to knowledge. I am here to point out what I have seen, so that others can also enjoy the benefits that come from harnessing this demon.

There is still a question of why me, instead of one of our more revered technologists? Why not listen to someone who is out there making progress happen?

It is somewhat questionable to select a tour guide from those who are at the cutting edge of technology. That would be like choosing a tour guide who admittedly has never been over the territory, but claims that you either fund his passage, or you don't get to go along.

Only one question is truly meaningful when it comes to harnessing this demon: "*Who is running your business?*"

1.2. The Plumber's Syndrome

We are physical beings, and usually see most clearly in physical terms. It is often easier to observe situations in the physical world than to address spiritual matters directly. Equivalents are readily available.

We have a plumber who is called in by a business with a water leak. The water appears on the floor behind a few desks, and runs along the wall to a corner where it begins to collect. After cleaning it up several times, it is apparent that there is a continuing source for the water. It is obvious that something must be done or there will be damage to the building. There is also a potential for health problems from dampness and mold. Management calls in a plumber.

On arriving, and examining the situation thoroughly, the plumber announces that the problem is indeed a leak in a pipe that is in the wall. This one leak is easily repaired, but indicates a more encompassing problem with the piping. Where there is one leak, others are likely to form.

He points out that the water is slightly acid, and has probably been eating at the pipes for years. He announces that this leak is just the first symptom of a larger problem.

He offers to upgrade the entire plumbing system. The cost is substantial, but not out of line with other expenses. He and three assistants can replace the entire piping system for \$42,000. His larger solution includes a water treatment system appropriate for the facility and a five-year warranty against further leaks.

He also notes that this will have a very beneficial effect on the value of the property, whether the business stays in residence or sells out at some later time. He points out that any signs of water damage can severely limit future sales potential.

With this, the managers address the issue in a meeting, looking carefully at the projections of costs and values provided by the plumber, and corresponding estimates from their own plant maintenance staff. It is taken as a serious good-faith offer that has value to the business.

For comparison, we observe a homeowner who faces a similar leak in one of the pipes in his wall. He calls in the plumber and is given a like offer. The plumber notes that a \$5,500 job will replace all the plumbing in the home, put in a water treatment system, and establish a five-year warranty against leaks.

The homeowner sets the plumber to work fixing the leak and says he will consider the water-treatment system to control future potential problems. He has no intention of tearing up his home and replacing all his pipes unless it can't be avoided. If the water treatment can prevent future leaks, he is interested in accepting a warranty to that effect. If it cannot, there is no purpose for buying it.

Modern managers don't spend money like those who own a business. They have different priorities than an owner. The homeowner is far more likely than the manager to take charge of the situation and see to his personal needs. The owner will probably spend much less, and gain just as much benefit from the efforts of the plumber.

Even such a simple difference might hint at a demonic influence. The business manager is relatively unconcerned with immediate profitability, but is amenable to distractions to building maintenance, as if the value of the building was a matter of central importance. He is willing to focus on future value for dissolution of the business and distribution of its assets instead of the primary purpose of assuring its present and continuing support for business profitability.

On the other hand, the homeowner is in his building for his own personal purposes. He is not easily distracted into spending his hard-earned income based on some speculative future problem for his property. He is not focused on the sales potential for property, but on its enjoyment, the purpose he has in living in it. He is handling the threat to his enjoyment, and is not easily distracted into evaluating the property for its eventual resale.

This same sort of distraction can be seen in modern management as it deals with office automation. Just what does the modern manager expect to get from information technology applications? Is there some sort of value to be produced for the business that can be the basis for taking actions? Is there a savings to the business that can be garnered through the use of information technology?

These questions are not popular areas of investigation under the demonic influence, but they are available to those who are willing to look for business values. Even considering this line of questions can challenge the very concepts behind modern information management. Management is gaining something through the efforts of others.

What is there that business leaders are to gain through the management of information?

The first answer is likely to be some technology goal. When challenged that the business gets no value from it, the next answer is likely to be a blank stare. Information technology is used for many purposes, but rarely has specific products from its own efforts. When addressing management over technology, the link to business products is even less visible. Information management rarely has any beneficial impact on either the product that the business distributes to its customers, or the amount of business cost necessary to generate and distribute business products.

There is no promise of value for the business; but there seems to be an unending need for expenditures to see to the welfare of applied technology. The modern manager faces something both insistent and pervasive that is opposed to sensible spending when it comes to computers and information technology. This describes the nature of information technology in relation to modern business organizations. The industry does not feel compelled to answer to other business authority.

Recommendations and Dire Threats

Unlike the hired plumber of our example, the information expert is usually a trusted and respected employee, an expert in the specialty of information management. He or she is not in the business of making money from selling decisions to the business, but has every reason to offer the best possible advice and direction for manager use. Unlike the visiting plumber, the employed information specialist will have to live with the results of any recommendations that are made.

This certainly should make that expert even more responsive to the needs of the business. He or she should be more trustworthy and more effective in assuring the ultimate benefit for the business.

Consider a hired information expert who reviews the needs of the business, and recommends a good network that can support electronic mail and messaging. It is a system that promotes the wide sharing of information. The recommended system comes with a modern suite of computer applications for common use. The local expert even addresses the substantial costs associated with training users in the effective use of the new hardware and software. The old equipment, of course, will be phased out, given for charitable benefit, or otherwise disposed of.

This technical specialist points out that the alternative is not really available except in the short term. The equipment now in use is old, and the newer software can't even be loaded into it without upgrading the hardware. Even then it runs only marginally.

The current business management approach favors accepting the cost and making the change immediately, instead of waiting for it to be forced through later computer failures. The modern manager is more interested in keeping things operating smoothly and on an even keel than being the wizard who is able to respond to emergencies with band-aid solutions.

The demonic challenge is not even visible in the realm of technology-based thinking. It is rather visible in the plumber's example. The challenge is where the manager is relieved from having to make the decisions by relying upon his or her technical subordinate's analysis. Technology decisions are almost uniformly based on faith in the ability of technical experts when it comes to their area of specialty.

Is it intelligent to expend on what the expert recommends? Is it intelligent to expend now instead of later? Is it intelligent to buy the specific hardware and software that the expert recommends?

With modern management thinking, the answer is, *"Of course it is! Bob wouldn't recommend anything but the best for us. Who am I supposed to listen to, someone who doesn't know anything about information management, or the one I have hired for his or her expertise?"*

This is the effective voice of the demon. It is answered through reference to basic management. The manager is the one who has something to gain through the efforts of subordinates. If the one who is effectively making decisions is not the one who has something to gain, then someone else is running the business. Managers lead; others follow. It is just as direct and obvious as that. The manager who simply accepts or rejects any recommendations from subordinates has effectively abrogated his or her responsibility as a manager.

Experts in Information

The modern business assumption is that the information manager knows what is best for the business when it comes to information management. That is why you have an information manager, just to make the sort of technical recommendations provided in the example above.

This approach seems sensible; but only so long as decisions are not examined. The problem is not indicated by the decisions being made, so much as by the lack of information supporting information-technology decisions. These decisions are often made solely on the basis of a subordinate recommendation.

What basis is there for the assumption that the information manager knows what is best for the overall business? The health and welfare of the business is accomplished by delivering value to customers, and receiving payment from them to support business operations and to generate profit. The basic business function is buying parts and materials, paying employees, and converting the parts and materials into products. Where is the expertise of our information manager in this profit-generating cycle? How does he or she become a management expert?

Where was the foundation for the latest technology decision by your business? Who was it that had something to gain through the decision made? How much did it cost the business relative to the value it generated in income?

In general, these are questions that have no answers for any modern information-management decision. The decision is normally made without bothering to analyze either the overall cost or benefit for the business. Such decisions normally lack reasonable economic basis. The term that describes them is “unintelligent.” These decisions are handled by a process that commonly distracts the decision maker from managing the business.

Preying on the Ignorance of Managers

I can make one definitive statement concerning value to the business. There is no difference between the value of what most businesses sell to their customers before and after their information management decisions. On the other hand, there is commonly a difference in what it costs to operate the business. Normally, the cost goes up following these decisions, both through expenditures on information hardware and software, and on the time to train those who use the new information materials. There is often an additional cost, covering an increase in the amount of work needed to keep the new information equipment in effective use.

These decisions are not being made in a vacuum, nor are they without some consideration of consequences. Surely someone benefits from them. This raises the question of who that someone might be. The general manager gets no direct benefit. There appears to be

no personal benefit for the local information specialist who makes the recommendation for change.

The answer to this “who benefits” question is both obvious and a little disturbing. Those who are benefited by these decisions are the software and hardware suppliers. The owners and operators of information technology businesses are those who are getting wealthy through information management decisions by their customer businesses. Wealth is not coming to the business leaders who are making the decisions, but to those who are considered the technology experts within the information industry.

Several of the highest earning people in the world are producing software for other businesses to use, and are urging its use. These are the people who gain maximum benefit from the information management decisions now being made within non-technology businesses.

Look to the advertising and training that these businesses provide, and it is directed to convincing information technologists within customer businesses of the value of modern products, and the need to make the “right” recommendations to managers. It is an organized effort bent to assure that these products are procured.

Technology use determines the value of information. The first splash of ice water in the face of modern management is that the value of an information management product is not determined by the product, but by the use to which the product is applied. The plumbing repair is not worth more than the building value that it preserves. It is based on the specific use that the user has for the information product.

The Value of Technology:

It is not based on what it can do,
but on what it does for you.

The general manager, in the business that makes use of information products, is the one who determines their value. The local information technologist generally has no good way to evaluate, or even understand, these value relations.

The ones who are now making the recommendations that guide information management decisions are not the ones who gain value, nor are they experts in the value that the business might gain. They are technologically sophisticated providers of internal support to business users.

Working Business

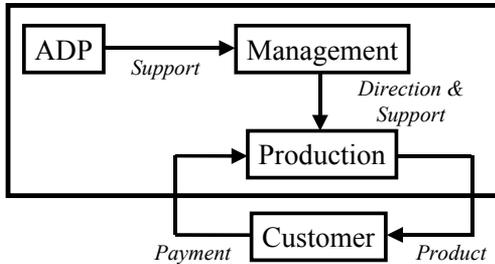


Figure 1 - 1

In most businesses, information management is a support for regular management, and does not produce the product of the business. There are very few businesses that gain any direct value from their use of office automation products. The value of internal support products is generally limited, having no sales potential for customers. Technology products only have value as they support the manufacturing effort that gains and distributes business products to business customers.

The value of product is determined by the difference between the income earned through sales of product, and the costs of business operation required by those productive efforts. The value of information technology is only part of the value of internal support for the efforts that gain productive results. The value of the automation support is part of the value of management, and of the other internal processes it supports.

Under demonic influence, value is not a matter in issue in most office-automation decisions, and cost concern is often limited to the procurement cost for the new hardware and software envisioned for business use. There is effective discouragement of any interest in the impact of these decisions on profit-generating business operation.

Solution - Manage the Technology

Clearly, modern information technology decisions are being made in a different spirit, one where the emphasis is on technologically satisfying results, rather than the profitability of the larger business effort.

The demon is overcome by putting emphasis back on the purpose for having office automation. The focus needs to be put back

on supporting the management function that gains performance through the direction of workers to their efforts. The solution is through returning the focus of management decisions to the ultimate purpose for having managers hired into a business. That purpose is earning a profit for owners and investors.

For those who can bear to see it, this approach clearly demonstrates one aspect of the demonic presence. The technology demon is a creature that benefits the one who sells information-management products at the expense of those who purchase it. Somehow, the demon has gained influence upon modern-business information decisions. The demon is proving very successful at convincing managers of its own importance. Its efforts yield a business environment where information technology providers get very wealthy through distracting those who work in customer businesses from the welfare of their own employers.

The main portion of this work will be an address of how the manager assumes proper charge over information management, assuring its value to the business that pays the manager's salary.

This does not mean that there is any necessary shift of wealth away from the information technologists who develop and sell information products, but simply a better ability to assure that the business gets the value for which it pays.

This new management orientation is also designed to make the general manager more valuable to the business he or she serves. The focus of the management effort should be on producing value for the business, and eliminating unnecessary costs. This manager should be far less concerned with the technology that is used to accomplish this end, than with costs and benefits that mark impacts on central management purposes. Technology-concerns are the business of the information manager, not the general manager who is focused on business product.

Technology should not be allowed to continue as the driver for decisions by more general managers. Profitable business operation should be the ultimate driver for having technical experts working in the business.

2. How To Harness the Demon

The challenge of this work is in dealing with a demon. We have no great reservoir of experience in handling such creatures. We face a vague presence in the business environment that is opposed to normal business purpose, and is active in aggrandizing itself at the expense of others. The challenge is our general unfamiliarity with techniques and approaches that will allow us to avoid damages.

I am writing to provide the missing knowledge and techniques. It is not a matter of arcane understandings, but simply a direction of application that has not been effectively applied. The solution is management by senior managers, by those in charge. The demon is not the one in charge, but one with influence upon what others do. All that is necessary for solution is for those who have true authority to take charge, and to bend the efforts of the business to their intended purpose.

The technology demon is not in charge, and has no authority over the business. It only has such powers as it might convince the real decision-makers to give to it. With the present state of affairs, it is clear that the business has given great significance to the whisperings of this demon.

I also note that demonic presence does not equate to individuals. There is no way to address any person as demonic. Those who are most active in promoting the demon are often those who are most seriously misdirected. The ones who promote harm to business are those who are most deceived.

In a different perspective, those who promote the demonic influence are able to gain from their efforts. The demon cares nothing for them, but neither does it care if they are rewarded. It is enough that they do as the demonic influence urges.

The solution is accomplished through intelligent application of good-management principles. It is through applications directed to the purpose for their being a business. Resolution is by management efforts directed to the purpose for having a management over a business. The solution is through promoting the business interests of owners and investors, and the personal interests of the ones making technology decisions.

The first step is gaining perspective and intelligence so that it can be applied. Management is gaining through the efforts of others. A manager can intelligently gain through using resources only when he or she has a good understanding of those resources. With information management, the information resource is obscured by the technology demon. It hides information on values even as it hides its own identity. If the beast were seen clearly, it would not appear to have the power it lacks. The demon creates confusion and distraction; and it lives within these. The confusion and distraction must be stripped away as part of taking charge.

In our existing management environment, the demon is almost impossible to see clearly. What can be seen is rather its impact. The evidence of its presence is clear for any who will look upon it. It is seen in a loss of focus on business purpose. It is seen in reductions of business performance to serve the aggrandizement of office technology.

2.1. Setting the Stage for Intelligence

Consider again the term “real-time.” To the information-oriented technologist, it references an electronic process that goes to completion before other actions are taken. The technologist considers sending an email message to be a real-time process when it is delivered to a third party Internet server. When the message is prepared, and the send button is pushed, the message is delivered to somewhere else and the local process is complete.

The end-user has a very different concept of real-time. It is a real-time process if the man does not end up waiting on the machine. Under the influence of the demon, time is seen in reference to what the computer is doing, it distracts from user concerns. For the common user, time is necessarily oriented to what the user is trying to accomplish, not to what the computer is doing. A real-time mail system has a very different meaning to users.

There is one easy presentation of the challenge from trying to deal with technology in a rational manner, and it is language. The demon can be isolated and seen in the word “security.” It is a word with many meanings. There is potential confusion in its use. To a homeowner, the word can mean locked doors at night. The same word may reference an investment to a businessman. The information industry has its own language, with its own unique and internally defined meanings for common terms. This misuse of jargon promotes misunderstandings, and isolates the information technologist from the rest of business. The demon hides itself within

the confusion. Just what does security mean to an information technologist? Is it something that has value, something that must be purchased? Does any non-technologist know what it really means?

Any individual language difference may appear small, but these differences are pervasive. The harmful nature of a single piece of confusion will be seen as substantial when applied across the full span of business operations. Consider the common task of producing a text document. The most important thing to the user is that they receive instant feedback when they press a key. They want to see the character on the screen so that they know that it has been received, and is being handled by the computer as intended. It allows them to continue pressing keys with confidence.

The demonstration of this feedback was paramount in the design of early word-processing programs. With the concept change from word processing to desktop publishing, the industry switched away from supporting this need of the worker to focus on the appearance of the document being presented. Where there is substantial reformatting of the information, it is not unusual for a fast typist to get many keystrokes ahead of the presentation of the result on the screen. This slows the work down to serve the orientation of the technologist who designed the computer program. This sort of change has degraded a major technology tool, making it less effective for its intended purpose.

The actual loss of function is so small in this case that it is hardly noticeable, but the problem is not limited to one or two little things. Consider that the modern windows-based computer system takes about a minute to load up and get ready to support the worker. This is $1/360^{\text{th}}$ of a workday. It is one more worker for every three hundred and sixty that are hired. It is \$100 lost performance per year for every \$36,000 employee with a computer on his or her desk.

If it takes 20 seconds for a massive high-capacity program like a desktop publisher to load up, you have added that time to the startup. With the normal switching between programs, and with people coming and going from their workstations, you can easily lose seven minutes of productive potential every day. If this time was not needed to support the computer, it could save in the vicinity of 2% of your computer-user manpower costs. The performance loss can be significant.

There are further challenges within the support the user receives. If you select the program, it is twenty seconds before you can use it. The worker waits on the machine to do its thing. This is not "real-

time” computer support for ongoing operations except in the jargon of the information industry.

I am addressing a difference in orientation. Under demonic influence, the computer technologist is interested in the operation of the program, not of the business. The producing worker is interested in continuing the productive process, and receives no additional value from most of the functions of the larger program. The computer technologist is interested in providing the best possible computer services, and has no problem with a slow-loading program because it works so well once it is loaded. The user, who is interested in getting the best possible support for his or her productive processes, usually sits there idly while the selected program loads.

The question is not one of how good the program is, because the business does not earn one dime more from the highest overall quality program than it does from the most basic one that supports the immediate job at hand. The quality of internal support rarely affects the value of product sold, but high-capacity software usually comes with a substantial price tag. The price for that higher quality internal support usually ends up being paid from potential business profits.

2.2. The Computer as an Office Tool

In dealing with information technologists, one is reminded of the television huckster who is presenting the multi-function kitchen tool. *“It cuts. It shreds. It dices. It makes french-fries out of potatoes and slaw out of cabbages. It mixes. It sharpens knives and scissors.”* To listen to the claims, it might even sharpen pencils.

Indeed, the modern office computer is a miracle machine, with a capability for being an office in a box. It stores information. It receives a variety of types of data, processes it, and displays it in an almost unending list of useful formats. It files information. It aids in the preparation and delivery of correspondence. It supports research, both internally and through connection to massive information networks.

So what can be missing?

The answer is so simple and obvious that it is not even considered. The answer is that it is supposed to meet the process needs of users. It is supposed to be part of how the manager gains performance through a subordinate workforce.

Approaching the computer as the ultimate office tool has led in a strange direction, one where the computer industry has attempted

to provide such a set of tools within a computer that it is useful for almost every possible task in the office. The byword for the industry has been “capacity,” the ability to do things. If this were the measure, it could only be called a resounding success, one beyond the wildest expectations of earlier generations.