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High Technology and the Church: The Computer as an Aid to Ministry

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HIGH TECHNOLOGY AND THE CHURCH: THE COMPUTER AS AN AID TO MINISTRY

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INTRODUCTION

The purpose of this paper is to discuss the possible uses and potential benefits to the church on the congregational level of highly technological advances in the area of data management and information handling. More specifically, this discussion will center around the feasibility of the use of the small computer in the parish setting, including areas not only involving the financial and bookkeeping functions of the congregation but also, and in more detail, other potential uses of a computer system which could benefit the mission and ministry of the parish.

Basic to this discussion must be a theological justification for administration that holds at its core and center the mission of the church in the world, for without such justification the entire thesis becomes merely an exercise in business practice. Additionally the potential for use of a computer system--what that system can reasonably be expected to do in the parish setting--must be closely examined, with thought toward the ideal system of information management. This evaluation must be based on a brief discussion of the nature of a computer, its functions and component parts, and how those parts work together to form a system which could be of value to the congregation and the pastor.

After bringing together these various aspects it is also necessary to look closely at systems which already exist in use, choosing specifically two or three systems for examination and evaluation against the ideal. Finally, in light of the already-operating systems that are

available and in use, those systems will be examined in a general way with special emphasis on what is being accomplished with those systems, what benefits are seen as coming from their use, and any potential problems or disappointments that have arisen in the use of the computer in the parish.

A THEOLOGICAL BASIS OF ADMINISTRATION

Richard R. Cammerer, in his contribution to The Pastor at Work bearing the same title, offers the following as comment on the field of endeavor known generally as parish administration:

> . . . It must suffice to say the purpose of parish administration is not just to save time for the preacher. He is not to interpret Acts 6 to suggest that he should have more leisure for study and that therefore the people should do some work. But the purpose of all phases of parish administration is to train people, and give people the opportunity, for bringing Law and Gospel to one another. This applies even to directing plant maintenance or financial operations and to making contact with predominantly social enterprises within the church. For all of them is it the pastor's responsibility to alert his people to the opportunities for quickening the spiritual life of the church and its mutual give and take of Law and Gospel. Where a piece of 'church work' cannot be thus interpreted, it is the pastor's task, together with the people who engage in it, to examine it and possible discard it. Where it can be so interpreted, the people themselves must be alerted to its objectives and trained to carry out their tasks toward God's own goals.[1]

It is with this basis, emphasizing the central importance of the mission and ministry of the church in any endeavor of church administration, that an examination of church administration must begin, for (as stated in the introduction) anything else can only be regarded as an application of business practices and secular organization plans to the church. This practice is not inherantly bad or undesirable, but fails to take into account the importance of the task which the church undertakes as its mission. The church deals with both temporal and eternal matters, but the temporal must never be placed in the forefront, overshadowing and relegating to a secondary role the prime importance of the eternal aspects of the work of the church.

That administration is necessary is often taken as self-evident, but there are indeed Biblical perspectives in the form of examples that may serve well the point. One of the earliest examples that can be found is in the example of administration suggested to Moses by his father-in law, Jethro. The constant siege upon Moses by those with difficulties and problems was userping his time to the extent that it became impossible for him to function as the appointed leader of the children of Israel. Jethro's suggestion, a most practical and evident one, was that Moses was to choose able men from the congregation, divide that congregation into smaller units with these individuals being assigned responsibility for the smaller units, and have these men serve in the capacity of judging these units. This permitted Moses to deal with his duties more directly and removed from him the burden of attempting to serve personally each and every individual as concerned their more personal matters. Thus Moses, at the direction of Jethro, made use of a common portion of administration used today, that principle of delegation of work.[2]

Another example of administration and its use in the Scriptures can be found by looking at Christ Himself. In the sending of the seventy disciples to prepare the way before Him he used administration in a manner that would promote and enhance the work that was before Him, the spreading of His message to the world of that day. This organization and planning for action points up the fact that there must be some sort of advance planning and administration to make the most effective use of the opportunities presented for the proclamation of the Gospel. An even more important point that can be inferred from this example is that the purpose of administration is indeed to further the Gospel presentation, with the goal being ultimately the furtherance of the

mission of the church as an outgrowth of the mission of Christ.

A final example of the use of administration in the New Testament church can be found in the example of Paul in II Corinthians, chapters 8 and 9. Summarized by Lee in Theology of Administration: A Biblical Basis for Organizing the Congregation, the following points are presented:

> . . . Consider the Apostle Paul as he sought to raise money for the Jerusalem church. Paul assumed the role of *leader,* exercising initiative and providing direction and motivation. It is evident, too, that Paul *planned* the whole effort with foresight and care, sending Titus at the appropriate time with a letter from Paul himself. Paul arranged the appeal to be well *organized* and *coordinated.* Paul was a preacher-teacher-evangelist, but he also exercised *oversight* in the church and between congregations. His use of administrative skills is evident.[2]

Thus there are examples of administration in the broadest sense to be found in the Scriptures, and it is well to note that these cases each point up the central validity of administration: the church administers to further its own mission, and does not organize simply for the sake of organization.

Yet there are other references to administration in the Holy Scriptures, one of which occurs in Paul's first epistle to the congregation at Corinth, the twelfth chapter, the 28th verse: "And in the church God has appointed first of all apostles, second prophets, third teachers, then workers of miracles, also those having gifts of healing, those able to help others, those with gifts of administration, and finally those speaking in different kings of tongues." (NIV) The Greek term used here for administration is *kubernesis;* Kittel, in The Theological Dictionary of the New Testament, relates this to the entire list given in this passage as follows:

> The reference can only be to the specific gifts which qualify a Christian to be a helmsman to his congregation, i.e., a true director of its order and therewith of its life. What was the scope

> of this directive activity in the time of Paul we do not know. This was a period of fluid development. The importance of the helmsman increases in a time of story. The office of directing the congregation may well have developed especially in emergencies both within and without. The proclamation of the Word was not originally this.[4]

And regarding the importance of the office, he continues:

> . . . No society can exist without some order and direction. It is the grace of God to give gifts which equip for government. The striking point is that when in verse 29 Paul asks whether all are apostles, whether all are prophets, or whether all have gifts of healing, there are no corresponding questions in respect to *antilenpseis* and *kubernesis*. There is a natural reason for this. If necessary, any member of the congregation may step in to serve as *deacon* or *ruler*. Hence these offices, as distinct from those mentioned in verse 29, may be elective. But this does not alter the fact that for their proper discharge the charisma of God is indispensible.[5]

The gift of administration is clearly given importance by Paul's listing it here with the *charismata*, the gifts of the Holy Spirit. And it is presumable that this gift, apparantly considered important in the life of the church and yet not generally considered in any sense as one of the most glorious of the *charismata* by those who would rank these gifts, was given for the meeting of a need. It is this need that must be addressed more fully in a discussion of administration at this point.

Schuetze and Habeck, in the book The Shepherd Under Christ, devote an entire chapter to "The Shepherd's Involvement in Administration" in which they state the following:

> The congregation which the pastor serves with the means of grace, however, is a visible fellowship consisting of specific, recongizable people. It exists in this world and is subject to the conditions and circumstances that are part of a group;s mundane existence. For the orderly functioning of a Christian congregation in this created world into which God has placed it some kind of organization with an administrative head is necessary.[6]

Within the world there is need for organization, both to further the purpose of the organization involved (here the church) and oftentimes,

regrettable though it may be, merely to perpetuate the organization. This latter reason for administration should never be thought of as the prime rationale for organization within the church, but it is undeniable that the congregation in today's world cannot exist without some organized form, at least to the extent of organizing as the visible Church in a given place.

Webb, in his Theology of Administration, offers three reasons for the need for church administration. First, he cites the fact that the church is made up of people, "human beings with strengths, weaknesses, gifts, and longings. . . . No less than any secular organization, the church needs to do things properly and in good order."[7] He continues, "Scripture indicates that while the church began and is sustained by God's call, it also began and is sustained by human response. Without the initiative and call of God there would be no church, but neither would there be a church apart from human response."[8] The church is still in the world, subject to the same influences and forces that act upon other organizations in the world, and thus needs an organization and administration to function with people in that world.

Schuetze and Habeck allude to both this and the second reason for administration posited by Webb in stating:

> At the same time it is true that the congregation, like every organization, is made up of people. These people while living in the world are still imperfect. A congregation too is subject to this world's limitations of time and space. It requires earthly goods and property to carry on its business, the Lord's business. If men are to function together as a group, the individual must give up some of his personal freedom for the good of the group as a whole. In the church, too, all things must be done "decently and in order" (I Corinthians 14:40), lest the free exercise of one individual's rights results in injury to others and to the group as a whole. St. Paul applies this to the corporate worship life of

> the congregation in Corinth. The same principle, however, applies to the congregation's entire life and functioning in the world.[9]

Here we find both support for the first reason for administration and introduction of the second, namely the fact that the church is a community of people functioning as a group, a corporate entity in both the legal and sociological sense. Where individuals function together for any purpose there must be administration of some nature. Though the Christian faith is identified as being of an intensly personal nature, there is nonetheless also reference to the corporate nature of the Church on earth. Terms such as the "people of God" and "household of faith" indicate the corporate emphasis of the church, and with such corporateinvolvement also must come administration.

> Without administration the church is like an orchestra warming up before a concert. There is much noise and movement, but no unity or direction. Worst of all, there is no music. The task of administration in the church is analogous to that of the conductor of an orchestra: to enable collected individuals to function as a unit.[10]

It is within this context that we find the most important reason for administration in the church and concurrently the most important need to be met in the church: the church has a mission.

> The purpose for which a congregation exists should have its basis in Scripture, where the Lord speaks of the church's mission. The individual Christian congregation should not have a purpose different from that given by the Lord to His church, to Christians individually and collectively. The Lord has commanded His people to gather together for mutual edification, to preach the gospel for the salvation of souls, and to be His witnesses to the four corners of the earth. To this end He provides His church with the necessary gifts. The purpose of a Christian congregation is to put God's gifts to use in preaching the gospel so that those who hear may be strengthened and preserved in their Christian faith unto life eternal and that the message of salvation may be shared ever more widely with the congregation's community and with the entire world. This is the unique responsibility God assigned to His church and must remain a congregation's reason for existence.[11]

Another definition of the purpose of the congregation, posited in a four-part definition by Webb, reads thus:

> *First*, the church's mission is to lead people on a spiritual journey, fostering, nourishing, and developing their faith in Christ, enabling them to know the abundant life be promised. *Second*, the church's mission is to foster, nourish, and develop a sense of community among believers, providing for supportive relationship and resulting in the awareness of being loved and cared for. *Third*, the church's mission is to reach out to others with the invitation to embark on the journey of faith and join the community of faith. *Fourth*, the church's mission is to go into the world, both corporately and through its individual members, working to enable people to live governed by love, justice, righteousness, and freedom.[12]

The mission of the church of God is indeed one that has been assigned by Him, and as such is the prime and central reason for the existence of the church in this world. To accomplish this mission it is necessary and profitable to organize, to administer, that the mission might be furthered to the best of the church's ability and in the most effective and efficient manner. His work calls for effort on our part, effort which is to be conscious effort, involving counting the cost of what you are doing (Luke 9:62) and being actively aware of the actions and duties of the church and its members (I Peter 5:8). But that work can best be accomplished when done through controlled conscious effort.

> . . . An uncontrolled eruptive enthusiasm that "does" first and "thinks" second is not a blessing. There are times when that kind of erratic reaction finally works out, but when it does, no one knows for sure why it did. What's more, the effort can't be duplicated. That old adage, so well-known and so seldom practiced, is correct: Plan your work--then work your plan. There is no other worthy way to do the work for the Lord. Give Him at least the same amount of careful preparation, calculated common sense, and planned implementation that the world insists is needed to make human activities successful. Don't give Him less. He didn't when you were the focus of concern.[13]

So there is an unquestionable role for administration in the church of God. Administrational principles were used by the church already in Biblical times, although there are few Biblical directives

if any for the actual administration of the church in today's society. The church has a need for administration if it is to carry out its God-given mission most effectively, and that need stems from the fact that the church is made up of people, individuals with weaknesses, strengths, and above all imperfections because of sin. The task of the church is always of central importance, and it must follow that the church cannot exist merely for the sake of itself and its own organization. Rather, in all that the church says and does and is, the mission of the Gospel and its spread and application must come forth and be clearly present. Administration serves the mission; the mission is never there merely to give legitimization to the form or existence of administration.

One important aspect of this administration is the role of the pastor regarding the day-to-day organization of the church toward its mission. Schuetze and Habeck discuss this aspect of admininstration and say:

> There is no biblical mandate stating that the pastor must provide administrative leadership in a congregation. In practice, however, it generally turns out that way. For one thing, it is not always possible to make the clear-cut distinction which is indicated when it is said that the pastor should concern himself with spiritual matters and that others can take care of the church's business and externals. Then, too, the pastor often is the only full-time person involved in the congregation's work and carries the broadest responsibilities. His term of office has no specific limitations. All of this leads to the practical result that he will inevitably need to concern himself with congregational administration. When he fails to do this, an administrative vacuum will almost surely result.[14]

There would seem also to be directive in this aspect of the question of administration in the actual description of the pastor's office and function. Cammerer, in "The Pastor at Work", discusses the relevant points. Working from the Biblical analogy of the pastor as

shepherd, he continues:

> A cognate term for the pastorate frequently utilized in the New Testament is *episkopos*, "overseer," "bishop." Acts 20:28 makes this term synonymous with the business of guiding and feeding the flock. However, an element is added at this point which does not lend itself to the analogy of shepherd and sheep. This is the operation, set forth in its fullest terms in Ephesians 4:12, of equipping Christian people to minister to one another. That verse bears repeating:
>
> > For the perfecting of the saints, for the work of the ministry, for the edifying of the body of Christ.
>
> The King James Version does not adequately indicate the shift in prepositions, one *pros* and two *eis*, which could better be paraphrased "for the fitting out of the saints toward the work of serving, toward the building of the body of Christ." The objective of the Christian Church is that each Christian speaks the truth to each other one, thus making the entire group of Christians in the place function as members of the body of Christ. Pastors are there for the purpose of equipping Christians to play this role. This equipment involves getting them started, by setting up the life of God in them through the Gospel, keeping that work going between them by the same Gospel, and supervising the operations in which the process goes on.[15]

Here we find indication of the role of the pastor in administration as a function of his role as pastor in general. The task of the pastor is to equip the saints for the ministry of the church, and as such he must have an input into the administration of that church as well. The administration of the church can form a vehicle for his accomplishment of this phase of ministry, in that it offers both the opportunity for the congregation's members to become more involved with the church and its mission and also provides a vehicle for training those members through membership on boards, committees, and the like. The pastor can equip and train, educate, and involve the members in administration both to make use of their talents and interests and to further the mission of the church.

In summary, administration is not only necessary but also desirable in the church. "Administration is not peripheral to the life and work of the church. It is actually inherant in the church's nature

and mission. It is necessary because the church is people--corporate people with a mission."[16] And:

> Although the pastor is called to preach the gospel, he cannot escape the responsibility of providing administrative leadership and performing some of its duties. The congregation consists of a group of people living in the world with a need for good order and organization as it does its work. The organization will develop as practical circumstances require. The church may apply also the world's accumulated administrative wisdom and skill to its needs.[17]

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[1]Richard R. Cammerer, "The Pastor at Work," The Pastor at Work (Saint Louis: Concordia Publishing House, 1960), p. 11.

[2]Harris W. Lee, Theology of Administration: A Biblical Basis for Organizing the Congregation (Minneapolis, Minnesota: Augsburg Publishing House, 1981), p. 9.

[3]Ibid.

[4]Gerhard Kittel and Gerhard Friedrich, eds., Theological Dictionary of the New Testament (Grand Rapids, Michigan:Wm. B. Eerdmans Publishing Company), p. 1036.

[5]Ibid.

[6]Armin W. Schuetze and Irwin J. Habeck, The Shepherd Under Christ (Milwaukee, Wisconsin: Northwestern Publishing House, 1974), p. 304.

[7]Lee, Theology of Administration, p. 6.

[8]Ibid., p. 7.

[9]Schuetze and Habeck, Shepherd, p. 304.

[10]Lee, Theology of Administration, p. 7.

[11]Schuetze and Habeck, Shepherd, p. 307.

[12]Lee, Theology of Administration, p. 7.

[13]Charles S. Mueller, God's People at Work in the Parish: A Handbook for Parish Leaders (Saint Louis: Concordia Publishing House, 1979), p. 9.

[14]Schuetze and Habeck, Shepherd, p. 305.

[15]Cammerer, Pastor at Work, pp. 3-4.

[16]Lee, Theology of Administration, p. 7.

[17]Schuetze and Habeck, Shepherd, p. 305.

AN OVERVIEW OF THE COMPUTER: FORM, FUNCTION, AND OPERATION

In order to make reasonable demands on a computerized system within the context of a congregation it is first necessary to understand at least in basic form the operations of a computer and some of the terms involved. Background information on just how a computer performs its functions will lead to a better ability to judge what may legitimately be expected of such a system and will facilitate discussion of the system in terms of capacity, speed, and flexability. And for the sake of clarity it is well to establish at the outset what a computer is and, perhaps more importantly, what it is not.

The computer is not a magical means of making all decisions that can present themselves, though it certainly can be programmed to make decisions and evaluate possible alternatives. Nor it is merely useful in work with numbers and figures; perhaps the main difference between the computer and the common pocket calculator or adding machine lies in the fact that the computer also works with words, names, and information that is presented in written or spoken form rather than in numerical form. Another difference is found in the concept of memory, with the fact that the computer can store through electronic means all manner of information, sort that information at the direction of the programmer or the program itself, and retreive only that information that is necessary to the performance of its function. It is this capacity that

makes the computer so attractive in a use such as the one being considered here.

A discussion of computers may well begin with distinguishing computers on the basis of size. *Macrocomputers*, often referred to as *main-frame* computers, are very large and powerful devices which can carry out a large number of functions at one time and store an enormous amount of information, or *data* in their memories. *Minicomputers* are generally much smaller and are suitable for use by small businesses, schools, and the like. The *microcomputer* is the computer of most recent fame, being of such a size and price that it is adaptable to personal use in the home. The major difference between these three categories can be found in two areas, size and speed. Size relates to memory, with the largest of the macrocomputers having the capacity to store, for example, the contents of the entire Bible several times over. Minicomputers may well be able to store the contents of an eight-page newspaper, where microcomputers have a more limited storage capacity which would, in this analogy, be in the range of ten to fifteen pages of typewritten material or less.

Yet the three classifications of computer all share one common item, the method which they use to handle data and information. Though the larger computers may perform their tasks much more rapidly, even the smallest microcomputer is capable of performing the same tasks, only at a much slower rate and with the limitations of its memory storage.

To have a clearer understanding of exactly how a computer works it is necessary to break that computer into its component parts. These parts include *hardware*, which is the actual computer with its circuts, keyboard, processing units, and the like, and *software*, the *programs* or instructions which tell the computer what to do, how to do it,

and in what order to proceed. These two general divisions form the background for all of the other functions of the computer, and both are necessary for the computer to function. To use an analogy, the hardware can be likened to the physical body of an individual, where the software is analogous to the brain and nervous system; the body performs its functions at the direction of the brain, but the brain alone cannot function without support from the body.

The central heart of the hardware portion of the computer is the *central processing unit (CPU)*, which performs all of the computing functions of the machine. This unit contains the capability of carrying out the basic instructions of the *resident program*, which is stored in a special type of memory. Most often this portion of the computer is found on a *microchip*, a small piece of electronic amazement that is in many cases smaller than a postage stamp but that is able to handle large amounts of information and many processes in very small periods of time. This CPU is the core, or brain, of the computer.

It is necessary to put information into this CPU, however, and this is accomplished through the use of the *input-output interface*. This interface provides a means of communicating with the CPU, instructing it as to what to do, what processes to perform, and what information it is to use in performing its calculations. This interface, as the name would indicate, forms the communications like between the CPU and another portion of the computer hardware, the *input-output device*. This device is the means by which the user can communicate indirectly, through the interface, with the CPU, and can take several forms. Most commonly this device, in terms of the input section of its purpose, is in the form of a typewriter-like keyboard, which can input either words and sentences or

numerical data, such as monetary amounts, dates, and the like. The output portion of the device is generally a *CRT screen*, or cathode ray tube, which closely resembles a television screen. In fact a commercial television can indeed be used for an output device, though the CRT screens used with computers generally have higher resolution as a result of their construction and are more easily readable than a television screen would be in the same use.

Up to this point the user has communication with the CPU, the mind or brain of the computer, through the input-output interface and the input-output devices, but the utility of this system is severly limited. For any calculation at all each individual piece of information would have to be entered each time it was needed, something far from convenient. In addition to the input-output information sharing, however, the computer also has connected to its CPU some type of *memory storage*, or *memory*. This memory takes two forms: *ROM*, or *read-only memory*, and *RAM*, or *random-access memory*. ROM is the memory where the computer's operating *program* is located; that is, it is here where the instructions to the CPU are stored and called up for use. This memory could be likened to a book of formulas used as a reference; for example, if you wanted to find the area of a rectangle you could look up that process, or formula, in the book and then calculate that area using the figures which you are interested in. The RAM, on the other hand, is a memory which can be addressed through the input device to hold information that the user puts into the computer, and the CPU can be directed to take that information from the RAM and use it in its calculations. Thus the operator does not have to input the information more than once, as the computer's RAM will "memorize" that information for future use.

Another point must be made regarding memory and its measurement. Computer memory is measured in units called *bytes*, which are made up of eight *bits*. To understand this terminology it is necessary to remember that the CPU, at the lowest level of its computations, cannot deal with signals that are anything but the simplest form. Each piece of information which is entered into the computer is reduced to a system of eight signals, each signal having only the options of being "on" or "off". Each of these signals is called a bit, and eight of these bits are grouped together to make one byte. The byte is roughly analogous to a character or number. Thus the resident program of a computer may well be stored in 12,000 bytes of information, where the RAM, or active memory of the computer, can range to 64,000 bytes or more. (In the interest of abbreviation, computers are assigned memory size by a number and the letter "k", designating "kilo-" or thousand. Thus a computer with 64,000 bytes of RAM would be designated as a 64K memory.)

Part of the problem with this type of system, as outlined above, is that the RAM is *volatile*, that is, when the power is turned off the RAM disappears and must all be reentered before the computer can again continue its manipulation of the data. To solve this problem a *peripheral*, or additional piece of hardware, is necessary. The peripheral which helps to avoid this inherant problem is some type of external memory, by which the information entered into the computer can be stored and reentered once again at a later time without the need to enter it through the input device. The advantage of this would become very clear if it was necessary to enter an entire month's business transactions each morning before using the computer. Through these devices that same information can be taken out of the computer before it is shut off and then reentered when the system is once

again turned on for use. It is this feature of the computer, along with its capacity to manipulate data in any manner that it is instructed to, that makes the computer so useful.

These peripheral devices, in the context of the systems which would be most appropriate to use in the church, generally take two forms, cassette tapes and so-called *mini-floppy discs*. The cassette tapes are a storage device which works in the same manner as the cassettes which are so familiar in the world of music. The information is *unloaded* or *saved* onto the tape just as music or words would be recorded onto tape and can then be *loaded* into the computer before use simply by playing the tape back to the computer. Both of these functions are carried out by means of connecting cables rather than through audible sounds, but the principle is the same. The advantage of this type of system is its familiarity and relative expense, but the material must be loaded in most situations *in toto*, as the computer cannot control the tape player and select only what it needs for its purposes.

The other form of data storage, that of mini-floppy discs, has its basis in the same type of process, that of storing information on magnetically altered iron particles like those on the cassette tape, but the "tape" is in the form of a circular piece of Mylar plastic which is from 5¼ inches to 8 inches in diameter. This disc is recorded and *read*, or searched by the computer's hardware in much less time than the cassette tape, and has the additional advantage of readibility; that is, the computer can seek out only that information which it requires, saving the time of loading and making better and more efficient use of the computer's built-in RAM storage. The initial cost is higher than that of the cassette system, but the discs are also reusable and the advantages of the disc

system add greatly to the flexibility of the computer. In the typical mini-floppy disc storage system the first disc unit will store approximately 131K bytes, with additional units storing approximately 175K bytes each. Keeping in mind that a byte is roughly equivalent to a printed character, the size of such storage becomes more relevant.

Another peripheral which is vital to the operation of a computer system is the *printer*. This is a device which will generate, or give, *hard copy*, or printed material, onto paper, forms, check blanks, and the like. If the output device of the computer system is a CRT tube then there is no means of producing a permanent copy of the information which the computer provides, for the information of course disappears when the computer is directed to perform another task or is turned off. It is by means of the printer that printed material can be generated by the computer system, offering a means of saving data and also adding greatly to the flexibility of the computer. With this printer, for example, it is possible to print out lists, records, and accounts on paper which can then be used to whatever purpose they were generated for. For example, as we shall see later, a list of the members of the congregation, their addresses and telephone numbers, and the like could be printed out by the computer at the user's direction for use as a directory to the congregation.

Printers are of two types, *impact* and *dot matrix*. The impact printer operates very much like a typewriter, with some of the printers offering the various type styles and sizes very much like modern electronic typewriters. Dot matrix printers, on the other hand, form the letters and characters which they print from small dots, impacted onto the paper in various combinations. Both printers are capable of printing multiple copies with the use of carbon paper, though the quality of print with an

impact printer is generally superior to that of the dot matrix printer. Both types of printer are under the control of the computer, printing out whatever material they are instructed to print, and both type at extremely high speeds, which range from 40 to 100 characters per second, with many having a 500 words per minute minimum speed.

But none of the above hardware is of any value whatsoever if there is no software, the instructions to the computer telling it exactly what is to be done. Software is generally produced by a *programmer*, who develops a particular *program*, or set of instructions telling the computer how to perform a given function, for a specific purpose. Most microcomputers of the nature that would be usable in the congregation are programmed in a language called *BASIC*, or Beginners All-purpose Symbolic Instruction Code, which is geared for general data processing. Other languages are available for more specific purposes such as business, manufacturing, and the like. BASIC, while not simple to use in the development of complex programs, forms the most common means of talking with the CPU and instructing its actions, and in the hands of a reasonably well-trained programmer can accomplish all of the functions that are deemed necessary for most users of microcomputers. As a general rule, most business applications with microcomputers are based on pre-written, or *canned*, programs which can be fed into the computer and operated without any need for further action. The program is entered into the computer, data and information is entered at the request of the computer itself through the output device, and the program produces the desired information without need for other involvement by the operator.

Many of these canned programs are written specifically with the intent of use by untrained individuals. It is only necessary to be able

to enter the program through the memory peripheral; the computer will "ask" for any information that it requires, permit that information to be entered through the input device, and then proceed with the program and give the required *output*, or resulting data, in whatever form the program directs. Even this output can be tailored to the needs of the user, with options for printing the information out through the printer and making multiple copies being examples.

There are two methods of implimenting the use of a computer in a given situation, the first of which is working on a *time-sharing system* with a computer that is located in another geographic area. Communications between the local terminal and the main computer are maintained through the telephone lines by means of a *modem*, or modulator-demodulator, which converts the signals from the main computer into a usable form for the terminal and then converts the terminal's reply into transmittable form for transmission over the telephone. This system allows access to a much more complex and advanced computer, complete with enough storage to eliminate the need for memory storage peripherals at the terminal's location, and allows the use of the printer and other peripherals as well. The disadvantage of this system lies in its cost, in that there is necessary expense for the telephone connection and also a charge per hour of computer time used.

The other method of operation involves an in-house computer, that is, a computer which is self-contained and needs no interconnection with another computer. This system, despite its higher initial cost, offers the advantages of security, in that the computer cannot give any information to any terminal other than its own, and lower operating costs, and if sufficient for use in a given situation would appear to be the better

of the two options. A third option, with the in-house computer also forming the basis for a small, locally contained time-sharing system, may serve the meet the needs of a situation where more than one terminal would be required. For example, one CPU housed in an in-house computer can power two or more terminals, permitting one to be in the secretary's office and another in the pastor's office, with both terminals working independently of each other and using the same CPU and memory.

Another aspect of the computer, aside from dealing with data and manipulating of that data, is its potential use as a word processor. This relatively new business machine greatly simplifies working with written material, and operates in the following manner.

Material which is to be typed is entered into the computer via the input device and is displayed on the CRT tube. The system allows for manipulation of the printed material displayed, such as correction of spelling and grammatical errors, addition and deletion of words, sentences, or paragraphs, "block manipulation" of the text involving reordering of paragraphs or sections, and can even automatically correct spelling errors through the computer. When the final text is completed and in perfect order the couputer can then be instructed to print the text my means of the computer, presenting a copy which is error-free and arranged on the page just as it was on the CRT. Some word processing systems are also able to automatically number pages of text, underline and underscore, and print out graphs and diagrams which have been created through the computer on the CRT screen. An additional advantage to a system of this type is its ability to be *interfaced,* or combined with, a list which is in the computer's memory, producing a series of form letters with the name

of the recipient entered in the inside address and the salutation as well as the body of the letter. The same list could also be used to address the envelopes through the printer, and such a list could be custom-tailored to the need by any one of several criteria.

Another remarkable feature of this type of system, which is operable through even a microcomputer, is that the letters can be saved on disc or tape and reused at any future date. Thus, for example, a form letter requesting transfers from another congregation could be devised, stored, and reprinted with the pertinent material entered for a given situation, without the need for recomposing and retyping the letter by hand. Another possible application could be the generation of a cover letter to accompany quarterly reports or financial statements, with the letter and the statement both being printed by the computer at the direction of the operator.

The microcomputer is a most versatile machine which is capable of a great many functions which may be adaptable to use by a congregation. Limitations include cost, necessary training of a computer operator, and perhaps even resistance to change and inability to justify the expense in terms of potential benefit. Yet there are many areas in which a microcomputer could benefit a congregation in parish administration. By examining the ideals, within the limitations of the microcomputer, a better picture will emerge as to need, use, and availability, a picture which can help assess the usefulness of this technology in a specific given setting, the local parish.

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THE UTILITY OF THE COMPUTER IN THE PARISH

> Although the pastor is called to preach the gospel, he cannot escape the responsibility of providing administrative leadership and performing some of its duties. The congregation consists of a group of people living in the world with a need for good order and organization as it does its work. The organization will develop as practical circumstances require. The church may apply also the world's accumulated administrative wisdom and skill to its needs.[1]

The last sentence of this previously-quoted citation from Schuetze and Habeck provides an introduction here to the possible uses of the computer in the congregation. Having established the need for administration in the parish as well as the workings and operations of the computer, it is now most appropriate to interface these two, to borrow a term from the computer world, and determine exactly what the computer can be used for in the parish setting.

For assistance in this survey we turn to a questionnaire which was developed for use in a survey of congregations using computer technology. This survey, funded by the Aid Association for Lutherans, is being compiled at the time of this writing and will offer both guidance and warnings to congregations who are considering automation of their many administrative functions. The survey is being administered in The Lutheran Church--Missouri Synod by Mr. Thurman Francisco, who is also involved with the final compilation of the survey and through whom the following materials were gathered.

The questionnaire consists, in part, of a series of questions relating to various administrative tasks of the congregation which may be

augmented or totally converted to computer technology. By reviewing these questions we can also arrive at a fairly comprehensive list of uses for technology which are indeed possible with currently existing systems. Additional comments will be added to clarify and point out the relationship between these uses and the mission of the church.

> 1. Membership records. This task typically includes the creation and maintenance of addresses, phone numbers, ages, births, baptisms, marriages, family relationships, and deaths. Changes in the status of membership, such as transfers in or out, are also included.[2]

Right at the outset of possibly-automated categories of administration comes a major function which can be undertaken by the use of a computer. A current listing of members, complete with addresses, phone numbers, and the like, can serve well both the pastor and the members of boards and committees within the congregation, and serves also the mission of the church by enabling communication with each and every member of the parish. Additionally, information such as birth dates, dates of baptism and confirmation, and even favorite texts and hymns can serve to build a closer tie between the congregation and its members and could serve the pastor well in making calls and the like. As will be shown, this list can also contain a more comprehensive listing of information which can be of even greater benefit in the area of personal stewardship. Such a list could also include mission prospects and information on calls already made, and as such can serve the needs of the evangelism committee. Finally, information regarding transfers and membership status would be at the pastor's fingertips when required, assisting in the fulfillment of the congregation's responsibility toward members who are transferring from the care of the local congregation to another congregation. This type of system could well supplant, or at the very least supplement, the congregation's permanent records.

2. Visitation Support. Some record-keeping may be used to assist staff and volunteers with calls on members, evangelism calls, shut-in records, and identification of potential problems within the membership. These calls may result from a program of planned visits and follow-up in such cases as marriage, illness or stressful events. Geographical location, responsibility assignment, and records of visitation might be included.

This use, alluded to in earlier paragraphs, can serve well the mission of the church in contacting and supporting not only its own members but also those individuals who may be prospective members of the congregation. Records of previous calls, the nature of these calls and the need being met through the call, and suggestions for future contact can all be handled through this category of information, and future plans can be laid more effectively when information of this nature is immediately available. For example, an every-member-visitation program could be set up with geographical guidelines, so that calling committees would not have to contact individuals in widely separated areas of the parish. Evangelism committee members and callers could enter their assessments of previous calls and suggest a future date of contact, which could be recalled and formed into a schedule of calls. Records of shut-in calls and communions can be kept, with the additional benefit of a reminder as to proposed dates for the next communion or shut-in visit. Anniversaries of special events in the lives of parishoners can be called up, as for example the anniversary of a birth, a marriage, or the death of a family member, offering a fine opportunity for the pastor or callers to tie in with the member's personal and religious life. All of these functions serve to underline the congregation's role of support and outreach to its own members and the surrounding community, offering an organized and appropriate schedule of opportunities for presenting the Gospel at times which may be most significant in the lives of individuals.

3. Personnel Records. Maintenance of personnel records of the employed staff.

This aspect of record-keeping serves mainly as a time-saving device, maintaining the records of the staff of the congregation and making the gathering of information for tax purposes, retirement and pension plans, and the like considerably easier for the individual responsible for these functions.

4. Voluntary Talent and Skills Inventory. The record-system, formal or informal, which allows the congregation to identify, call upon, and schedule special skills which may be available within the membership.

It is here where the computer record-keeping system comes into its own in the congregation. With this type of system it is possible to dispose of the file cards and hand-gathered data sheets used in so many congregations and substitute instead the computer terminal. Talents and interests of the individual members can be gathered from a survey, entered into the computer, and then presented in any combination. For example, if the congregation is interested in beginning a youth choir, the computer can be directed to find individuals within that congregation who have musical ability, are willing to sing in or accompany a choir, and are interested in working with the youth of the congregation. Or, in the case of the board of trustees, if it is necessary to perform electrical work or cabinet-making in the parish hall the computer can direct them to individuals who have expressed a willingness and ability to help. Making use of the already-present talents of the members serves not only in the stewardship of financial resources but also offers the opportunity for involvement to the members of the church. Also, a complete talent inventory can avoid the problem of always calling upon the same volunteer and give other individuals, who may normally be overlooked by even the most efficient

board or committee, a chance to become involved and "shine" in the work of the church.

5. Church Archives. Important information similar to that maintained in a church registry for important member-related and corporate events and the location of documents, property inventory and valuation, and insurance data.

Here the basic corporate information of the congregation is placed into a more usable form, with information on incorporation, legal aspects of the congregation, and insurance information being available literally at the congregation's fingertips. Particularly in light of current economic conditions, inventories and information on insurance policies and claims can be vital in the event of a catastrophy; although the policies are not computerized, their basic contents and location can be organized for ready reference.

6. Safeguarding Privacy and Confidentiality. The procedures employed to restrict access to the files, communications, records, and other data maintained by the congregation to those whose need and discretion are assured.

This aspect of the congregation's records and information can be a cause of problem and difficulty, and can also serve as a cause of concern regarding the computerized data-storage system. If the computer is so knowledgeable and filled with information, how can that information be guarded and kept confidential? Currently it is often merely a question of placing records in a locked file cabinet, with only certain individuals having access to those records by means of a key to the cabinet, but all too often the two-fold problem arises: an individual is denied access to records because those records are contained in with other confidential records, or a person is given access to records beyond their legitimate need.

With the computer system this problem is eliminated on several

levels. The first of these levels is the computer itself, which would require at least a minimum of knowledge and information to operate. Secondly, by the use of *passwords* an individual can be denied access to given information. These passwords are written keys, without which the computer will refuse to give out information. Each individual with access to the computer can have their own password, which the computer will recognize and can use to evaluate what information is to be given to the individual. If the person asks for information which the computer has not been programmed to give out to the user of that password, that information will not be given out. On a third level, the information kept on mini-floppy discs can simply be removed from the computer and placed into a safe, taking little space and remaining completely secure. This three-level protection is far more secure than the system used by most congregations, thereby further guaranteeing the proper confidentiality of the information.

7. Word Processing. Most churches have a significant load of document preparation, repetitive letter-writing, bulletin formating, newsletters, annual statistical and financial reports and the like.

Aspects of this use of the computer have previously been discussed, so permit a brief example to serve as a reminder. The bulletin is to be prepared for Sunday morning's service. The individual responsible for that task seeks out information on scheduling of the week's events (text, theme, hymns, special orders of service, special announcements, and the like having been entered by the pastor), other information which should be publicized through the bulletin for that week, and brings the information together on the computer screen. The compiler then sets up the format that is to be used, types the bulletin on the screen, and makes any needed corrections. Then the computer is directed to print the finished, perfect

copy, in the format already set up on the computer screen, complete with justification of the line length and *drop-outs*, or spaces left for artwork to be added. The computer can print this copy as camera-ready copy for an offset press or directly onto a stencil for mimeograph reproduction.

Another important use of this process can be seen when two or more programs are *merged*, or put together. For example, if you wanted to send a letter to all members of the congregation who are interested in working with evangelism the letter, prepared with the word-processing function of the computer, could be merged with the talent file to produce individually addressed and personalized letters for each individual who expressed an interest in the evangelism work of the church. Even the envelopes for the letters could be addressed by the computer. Thus contact of any sort could be maintained with the entire segment of the congregation who shares one or several given interests or needs. The computer could even produce reminders of meetings, printed and addressed onto postal cards and ready for mailing to all of the members of a given committee or board. If communication is the lifeblood of organization and action then this system could well form the basis for a renewal, completion, and transfusion, if you will, of that lifeblood, even within the church.

8. Mailing Lists/Directories. The process of producing mailing lists, labels, periodic directories of membership, identification of members by zipcode, location, organizational membership and other characteristics

Often the congregation has a need for a list of members, complete with telephone numbers and addresses, for a specific purpose. That may be a special mailing, a subscription request from "The Lutheran Witness", or even just a partial list of members based on some criterion or another.

For example, a given elder may request a listing of those members for whom he is responsible, or the pastor may need a listing of members eligible for membership in the youth group. The computer can generate such lists at a moment's notice, with the advantage that there will be no omissions through carelessness or oversight. This type of ultimate efficiency can be of great benefit as the church seeks to maintain contact with all of its members and support inter-member communication, both in smaller groups and in the congregation as a whole. The computer can be directed to give a directory of all members who are involved in the choir, for example, which would be of great use to both the director and the individual members.

9. Master Calendar and Scheduling. This task includes the development and maintenance of an accurate and up-to-date church master calendar and activity schedules in sufficient detail to identify and resolve conflicts in events. Long-range planning of events and programs is included in this task.

Once again the computerized system meets a definite need in the congregation, that of helping to make organization, planning, scheduling, and long-term planning simpler and more efficient. Rather than making use of lengthy rolls of paper and numerous methods of recording information, the planning committee of the congregation can enter its programs into the computer, obtain a read-out of possible conflicts, and thus eliminate much of the hand work involved in planning, both for the year and for longer range time periods. Not only major emphases and monthly themes, but also year-long general themes and long-range planned thrusts can be entered, with the result that these thrusts can be better coordinated and controlled. The computer can then establish the final plan in its calendar and serve as a reminder device of upcoming events and needs. Note that the computer does not make the decisions, nor does it offer suggestions; rather it permits the members of the committee to offer their

suggestions and helps in resolving schedule and planning conflicts that may arise. The computer does not eliminate the need of planning, but rather intensifies that need to include each committee and board, giving opportunity for those boards and committees to have their activities included in the scheduled activities of the congregation.

10. Correspondence Log. This task includes the control and indexing of correspondence and the maintenance of a chronological record of correspondence.

Here the computer serves as an automated file cabinet, recording both written and telephone correspondence and, at least in the case of the former type of correspondence, offering the option of producing the documents in question. This can serve as a benefit in matters such as correspondence regarding contracts and services for the church, delinquent members, and the like, helping to streamline the flow of information within the congregation and between the congregation and individuals or groups outside.

11. Periodic Reports. Annual reports of the membership, financial and other activities of the congregation are typically prepared for use of the local church board and for submission to the national church. Include other periodic reports and summaries of a similar nature required for the local ministry.

The advantages of having in a readily accessible form figures and reports on various aspects of the congregation can be great, but though those reports are able to be produced without computer technology they most often are not presented because of the work involved. With computerized records such information can be requested at virtually any time, and the information will be current and updated without any required searching. Membership figures, church attendance figures, information on the activity of members within specific organizations of the congregation, and enrollment statistics for auxiliary organizations such as the Sunday School can provide

indicators of involvement and satisfaction with the program, thus indicating also the degree to which certain programs are meeting a need within the congregation.

> 12. Standardization of Administrative Procedures. Administrative procedures for auditing and control of financial activities, development and review of programs, check-lists of steps for funerals, marriages, worship services, or confirmations, etc.

Here we find the computer involved in the nuts-and-bolts operation of the congregation in pastoral administration, offering a means to standardize and concretize administrative procedures for the sake of orderly conduct of the church's business and mission. Pastorally, this aspect can be used for information gathering and storage in the case of funerals and marriages, while the administrative use of this function could include information and procedures on matters such as audits, hiring practices, and even matters such as the calling of a pastor or teacher. By using check-lists, stored in the computer's memory, it becomes much simpler to proceed within the congregation in a matter that must be repeated periodically, and this method also promotes consistency in practice and operation

> 13. Recognition of Individuality. This task is that of maintaining a record of the individual needs, sensitivities, and characteristics of members. It relates to all of the administrative processes such as production of form letter, contribution solicitations or almost any contact or communication.

Here we find the master list of characteristics and personal information that can be used, when merged with word processing and the other informational programs of the computer, to individualize communication and contact with members, both through the written word and through personal contact in the setting of calls. This file is perhaps the most vital to the communication capabilities of the computer, but is at the same time

also the most sensitive by virtue of the type of information which it contains. Much of this file's material may well be a matter of public record, but many entries involved with this aspect of information regarding members of the congregation may of necessity be of a highly subjective nature and thereby most confidential. Safeguards must be taken to permit information to be drawn from this file for the purpose of list-compilation without permitting full access to the file by anyone other than a most trustworthy and discreet individual.

14. Accounting and Budget. Accounting procedures, budget reports, cash flow analysis, payee histories, audit trails, and periodic projections are typically performed to some degree or another by congregations.

The business end of the congregation, financial and accounting procedures, can be placed onto a computer and thereby greatly simplified. Accounting packages are available for use in small businesses which would well meet the needs of the congregation in areas such as basic accounting, check writing, keeping of balances, and itemization of expenditures as compared to budgeted figures. The computer also permits projections to be made regarding the financial matters of the congregation, thereby enabling the boards and committees to have an up-to-the-minute record of what has been spent and what is projected for the future. This type of information can often be of great value in planning, establishing in a legitimate manner the projected conditions in the future and aiding in decision-making regarding those projected future assets and their uses.

15. Stewardship Records. Record-keeping related to stewardship contributions by family and/or individual in order to generate reports and accounting to the contributor as well as analysis of contributing patterns and membership response to stewardship. Provide records of financial and other contributions, with capability for analysis.

Quarterly reports become a minor matter when contribution records are maintained on computer memory, but an additional and more important aspect of these reports comes with analysis. It is possible to analyze such contributions and determine what the state of the congregation's stewardship is, as well as determining the relationship between current contribution levels and pledge levels, figures from former years, and current or projected needs of the congregation or the synod. It is also important to keep records of these contributions for the benefit of the members regarding their taxes, and is worthy of note that the Internal Revenue Service currently accepts records kept on computer as evidence of contribution.

17. Participation Analysis. Record-keeping which supports analysis of worship and communion attendance and involvement in church programs. Included might be analysis of changes in activity participation which may indicate dissatisfaction.

18. Statistical Analysis. Congregational staff and lay leaders typically are called upon to analyze recorded data and trends within the church and in the surrounding community.

These two facets of computer ability can be used to gather information most valuable to the pastor and the congregation's leaders. Information on church attendance and communion attendance is well recognized as having value in determine both trends within the congregation and possible problem areas involving individual members or families. Additionally, with analysis of attendance and participation figures, it becomes possible to evaluate more objectively the programs of the church, types of worship service, and the like. It bears repeating that the computer is not designed to make decisions regarding these matters; the programs of the church cannot be evaluated strictly on the basis of numbers. Yet an indication of reaction, either positive or negative, can be of value in an evaluation of certain

programs or projects within the congregation, giving indication also as to the self-percieved needs of the members.

19. Church Music and Liturgical Reference System. Records of the use of music, both choral and congregational, pericopal texts used for sermons, and sermon outlines or text.

20. Music Inventory. Congregations frequently have substantial collections of sacred and other music. A music inventory system may not only provide rapid access to the specific items available, but may serve to support records of itslocation, performance requirements and use.

Keeping a record of hymns used, text, and theme for each worship service can serve the pastor in preventing unnecessary duplication of subject material or worship materials, and can also (when programmed into the system before the fact) provide other individuals with the information necessary for their part in the worship service. A corollary to this use comes in the cataloging of available materials, in this specific case musical arrangements for the choir or chorus. The same type of information could also be kept for the church's library, the pastor's library, or virtually any other situation which traditionally uses file cards to store information. An additional advantage to this type of record-keeping lies in the computer's ability to search the information and present only a specific segment of the information which meets certain requirements. Thus a listing of all selections available in the church's music library which are suitable for use on Easter and are written in four-part format (SATB) could easily be assembled, with the final decisions to be made by the individual in charge.

21. Energy Use and Physical Security. The procedures by which the church grounds and buildings are made physically secure and the use of energy is monitered and controlled.

One of the most fascinating aspects of computer technology is

the possibility of a totally-computer-controlled environment. It is possible to interface various physical controls with the computer in such a way that the computer itself controls the heating, lighting, and even security of a given area. For example, the computer could make the determination that a given meeting was being held at 7:00 p.m. on Tuesday of this week, control the heating so that the building or area for the meeting would be warm when the meeting was scheduled to start, turn on the lights in the meeting area, the parking lot, and the hallways leading to the meeting area, and even unlock the door at a pre-set time before the meeting. At the close of the meeting the computer could be directed to turn the heat down, the lights off, and lock the door after a period of time. In the event of a break-in the computer could dial the police force, informing them of the location of the break-in and the time when it occurred, and then call the pastor, elders, or trustees to alert them to the situation. The liklihood of such a break-in would be minimal, of course, as the computer has been turning lights on and off in a pre-set pattern to make the church look inhabited.

Granted, this type of situation seems far in the future, but the technology exists today for such a system to operate. More important, however, is the possibility of analyzing the church's energy use toward efficiency and cost reduction, a facet of computerization which would not require extensive planning and additions to the church's physical plant. Even the simple control of heating and air conditioning, relatively straightforward in its installation and management, could serve the needs of the church well in stewardship of finances and resources.

22. Transportation Program. The task of providing reansportation or coordinating car-pooling of members to church activities or as a service to those with restricted mobility. Include scheduling and

maintenance of vehicles and monitoring costs.

It is a fact that many members of the congregation may have transportation difficulties preventing them from taking a full part in the activities of the church. To this end many parishes have begun bus ministries, car pools, and other means of offering transportation to those who are in need. The administration of these organized efforts can be managed through the use of a computer, which could well provide a matching of individuals needing transportation with others in their area willing to provide such transportation, as well as providing a listing and schedule of both bus stops and maintenance of the church's vehicles. Such information could serve well this aspect of congregational involvement in the area of transportation.

23. Inventory. The maintenance of records of the physical assets of the congregation.

As mentioned earlier, the maintenance of a record of a congregation's physical assets becomes most important at times of catastrophy, but is also useful in determining what is available and, from that, how those things available to the congregation may best be used. For example, if a program is developed around a series of filmstrips and is to be used on different levels at the same time, the question arises whether or not the congregation has sufficient projectors to avoid having to stagger the use schedule. An inventory of this type would be able to answer that question immediately, and possibly offer alternative means of meeting the educational need. Also, in the event of theft or destruction, serial numbers and other pertinent data would be immediately available for reporting to the appropriate authorities. This inventory could even be extended to include expendible items such as paper, ink, spare projector

bulbs, cassette tapes, and other items which are necessary but are also difficult to record in a hand-written inventory.

To this list of twenty-three possible areas of use for the computer system must, of course, be added the educational aspects of the computer. Computer-assisted instruction is a rapidly-developing field of endeavor which shows great promise, both in the secular world and in applications within the church. The field is so broad, the implications so numerous, that it has become virtually a field of itself. In limiting the scope of this discussion to the uses of the computer in ministry it cannot be overlooked that the same system which could perform all of these functions could also be used in training, education, and administration in both the parish setting and in the Christian day school. Though the administrative requirements definitely overlap between the educational agencies of the congregation and the congregation's actual internal administration, specific tasks and uses of the computer in education are so broad and inclusive as to require a totally separate evaluation.

Another aspect which may well be included in a discussion of the computer's potential use in the parish can be found in the heretofore omitted question of the questionnaire:

16. Pastoral Calendar, Appointment, and Expense Book.

The pastor's own personal use of the computer can be varied and broad, ranging from use of the terminal as a calendar and reminder of appointments to a record of his own personal and job-related expenses to an aid in sermon and manuscript preparation. In the future it may well be possible to obtain textual aids and concordances on magnetic media which will permit the pastor to enter a phrase or word and see a listing of all occurances of that phrase in both the Old and Tew Testaments. Refresher courses in

Greek and Hebrew could be made available, as well as instructional materials on various subjects. With advancing technologies a central data bank of information on subjects such as cults, pastoral administration, new techniques for the parish, and current or upcoming events in the synod could be accessed by the pastor in the parish, giving him a much-needed source of information, contact people, and potential sources of help for specific situations.

In general, the use of the computer in the congregation can be well summarized by the following goals:

1. Assurance of the Accuracy and Availability of Records. Congregations maintain membership, financial, registry, personnel, and other records. Issues related to accuracy, timeliness, and availability should be considered.

2. Freeing Individuals for More Important Works. Many necessary administrative chores and office procedures seem to take time out of proportion to their contribution to the ministry. These tasks are frequently tedious and repetitive.

3. Minimization of the Costs of Administration and Operations. Administrative and operational costs take significant portions of the resources available to the congregation.

4. Protection of Privacy and Confidentiality. The privacy and confidentiality of the members' relationships within the church is the issue addressed.

5. Enhancement of the Quality of Services Provided to the Membership. Congregations administer a wide variety of services to the membership and community, such as youth activities, day-care, and services to invalids among many others.

6. Assurance of Responsiveness of Services Provided to Needs. This objective draws the distinction between the quality of services, as in 5 above, and the "fit" of those services with the real and perceived needs of the membership.

7. Assistance in Identification and Acquisition of Resources. This addresses the processes by which the congregation obtains time, money, skills, experience, and material. The process requires that recources must be identified at the source, acquired, shared, and applied to the ministry.

8. Assessment of the Performance of Congregational Programs. Determination of the impact of the various programs of each congregation upon the membership and the community is one aspect of management of those programs.

9. Improvement of Coordination of Activities. Multiple activities make demands upon the time and other resources of the congregation and its members and professional staff. This objective focuses on the management of the time and other assets of the congregation in the face of competing demands.[3]

Keeping these objectives in mind, the use of the computer in the parish is not only possible but also feasable in light of the many tasks which it can undertake. Nevertheless, the computer is not a panacea, a solution of all of the congregation's woes. It forms merely a means of gathering and presenting information in a more useful manner, working with that information to make decisions which can be based in part on that information, directing those decisions to the most efficient and effective accomplishment of the mission of the church, and offering help and assistance in the implimentation of the results of the decision-making process. The decisions, the commitment, and the creativity must still come from the congregation, a fact that is both reassuring and sobering.

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[1]Armin W. Schuetze and Irwin J. Habeck, The Shepherd Under Christ. (Milwaukee, Wisconsin: Northwestern Publishing House, 1974), p. 305.

[2]"Congregational Administration Survey" used by Thurman Francisco et. al. for upcoming report being conducted by the Consultation on Church Use of Computers. (All classifications numbered in the body of the text taken from this source.)

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? Probably 16

SYSTEMS IN OPERATION: A BRIEF LOOK

Systems are up and running in a number of Lutheran congregations around the nation, and several sources provide information, hardware, and software geared especially toward church use of computers. In this section two such systems will be examined in more detail, each representing one of the divisions or types of systems available. The first to be discussed will be the MSI system, representing the time-sharing type of computer system based on a computer which is located in a geographical area separate from the user church; the other system will be the Back to Basic Computer Center's "Heaven's Helper" program, including both hardware and supportive software and representing the in-house computer system, based on a microcomputer which is self-contained and located on the church's property. A third system, that of the TRS-80 Model III, will also be examined; though this system is not specifically designed for church use, its offerings of hardware and software offer an illustration of materials which can be adapted by the congregation for its use.

Membership Services Incorporated

MSI offers computer-assisted information handling to congregations in two different ways, making available to the congregation both time-sharing computer services and off-premises services on a regular, mail-in basis. The same services are offered by both means, and the

services are varied and quite impressive. Because of the percieved need for rapid information gathering and processing only the time-sharing aspect of this service will be considered in the remarks on the system.

The first of the several programs which MSI offers is called the "Master Membership Profile" and offers a broad scope of information which can be maintained on a congregation's members. Lists can be compiled on the basis of age, sex, organizational membership, special interests, church activity, geographical area, subgroups of the congregation, birthdays, heads of households, marital status, specialized ministry, status in the church or Sunday School, date of church membership, departments, divisions, or classes, or other criteria. This listing can then produce mailing labels, in three differing styles, or file cards for use in the congregation. Directories can be prepared which are camera-ready for publication, and special-purpose type listings and other categories of information may be drawn from the system.

A second program is the "Master Stewardship Profile," which is designed to meet the accounting needs of the congregation. Information can be obtained from the program in various formats, including a statement of contributions, stewardship analyses, and stewardship arrays, a means of obtaining on a Sunday-to-Sunday basis the record of contributions of an individual or a family.

Another offering of this MSI program is their "Multiple Assignment Propsect System," a means of providing on a weekly basis information on prospects for use by the pastor and evangelism committee. Information

on each prospect can be varied and complete, including not only the type of information found on the mastermembership file but also comments about the prospect and previous calls, a listing of the source of information about the prospect, and an indication of the prospect's interest. Once again the classifications for special lists which applied to the master membership list can be used to produce lists and tables tailored to the needs of the congregation.

A fourth system which is offered is a bookkeeping program, working with income and expense statements, budget worksheets, and the like. This system is very similar to those used by small businesses in the recording of their transactions.

Also available, according to the brochure, are programs to promote an offering envelope mailing program, with personalized, numbered offering envelopes being made available to the members of the congregation on a monthly, bimonthly, or quarterly basis through the mails. A system for cataloging the music library of the congregation is also offered as an option.

A system such as this, with limited offerings being presented in its brochure, can be misleading, for the computer which is at the core of the system is capable of doing each of the suggested used very easily. Customized operations, however, require in many cases customized programming, done by the individuals operating the system; this custom programming involves an additional charge. This facet of computer use, as will be illustrated also in regard to the other systems, creates an additional expense.

In relation to overall cost, the initial investment includes the purchase of a *dumb terminal*, which is capable only of communicating with

the computer over the telephone lines, plus the purchase of a printer to produce hard copy in the format desired. Additionally the user must purchase computer time on the main computer and pay for the telephone connection to that computer. At this point the cost for these services is generally considered prohibitive. In the words of the upcoming report on the congregational use of computers, "If (the programs needed by the congregation are) implemented on a system not located with the congregation itself, both the time and dollar costs of a full implementation will substantially exceed those of a system implemented on a microcomputer operated by the congregation."[1]

Another drawback to this type of system is found in the process of word and text manipulation, word processing. Though the master computer doubtless has the capacity for word processing, the time involved with this task can become prohibitive. At peak times of use the computer may take from ten to fifteen minutes to respond, rendering the convenience of word processing much less valuable from the standpoint of expenditure of time.[2] Security becomes another problem, with the possibility of an individual's records being used for some non-congregational purpose being a concern. Though there are security devices built into the system, there would be little to prevent an individual with access to the information from merging your congregation's listing of members with his own mailing list, for example, thereby having a built-in list of sources for a direct mail campaign.

Though this type of system does offer certain advantages, the disadvantages of cost and inconvenience seem to undermine the goal of rapid information retreival at a cost-effective and time-effective means. In fairness to MSI, they do offer a system for microcomputer use on the

in-house microcomputer systems, but for the purposes of this discussion only the computer services, based on a non-local computer location, have been considered.

"HEAVEN'S HELPER"

The "Heaven's Helper" program is an example of a microcomputer program and package that has been developed for the congregation's use in an in-house computer system. It includes both hardware and software and is presented by the producers, Back to Basic Computer Center, in a set-up state, complete with support and service, at least within the geographic range of Florissant, Missouri.

The hardward included with the system is the Vector Graphics System B, which includes 630k of on-line storage in two single-sided 5¼-inch mini-floppy discs, the CPU and CRT terminal housed in a single unit with the input device, a typewriter-like keyboard with a *data-pad*, or set of auxiliary keys very much like the keyboard of a calculator and a *CP/M* operating system, which facilitates the use of the disc storage and permits creation, manipulation, and erasure of the files. Also included is a NEC "Spinwriter," an impact printer which prints at 55 characters per second and has *tractor feed* (a means of feeding the paper through the printer which uses holes on the sides of the paper, usually on a detachable perforated strip) and a *bidirectional head* which permits the printer to imprint the paper when moving either left-to-right or right-to-left. The printer also has the capacity for different type faces, much the same as the IBM Selectric series of typewriters, and will print onto forms, regular letter-type paper, or stencils. The hardware portion of the system is easily placed on a small desk and

stand for the printer, and is housed in three units: the CPU terminal, the disc storage unit, and the printer itself.

The software, provided with the system, permits word processing which is located directly in the memory of the computer; thus there is no need to load the system from the disc drives to operate the word processing system. Also provided are programs for establishing a record-keeping system for up to three meetings per week per file, with provision for recording contribution totals for each week, a contribution or stewardship array, providing information on the weekly contributions of each member of the congregation, and an accounting system which is based on the accounting needs of the congregation. This accounting system will handle daily transactions, financial reporting (with subheadings for trial balance, balance sheet production, and income statement processing), final processing for a period of time, transactions and their recording, and account status. Through merging with another of the programs, that of the membership list, quarterly and annual statements can be prepared and customized, and through merging that with the data and word-processing systems customized form letters and the like may be produced.

One of the most powerful portions of this software is in the membership list program. As recently revised, the listing will store up to forty categories of information on each individual member and can recall all of the information, any given portion of that information, or any combination of categories. Each category of information has twenty-six variables, the letters A through Z, which can be assigned various values, with the result that a very large number of specific

details about members and prospective members. One disadvantage is the limited number of names which can be kept on the list--older specifications for the hardware system specified 750 names on any one list, with 14 items per name--but the point is made that several sub-lists, such as prospects, non-member children attending Sunday School, and the like would make that restriction less objectionable.

The cost for the system, complete and installed, is currently $11,458.00 total, with the options of lease-purchase agreements running from $433.11 per month to $318.53 per month. A one-year service contract is available at a cost of $127.50 per month, and options are available for further consideration at the end of the lease/purchase time.

Once again, the system, though having the capacity for all of the aforementioned goals and programs, is limited by available software, though assurances are there that additional software will be made available as the system is improved. With this system, or any other like it, the option is there for careful consideration: given the cost and benefits, can our congregation make efficient use of this type of system and justify its existence as a tool for the advancement of the mission of the church? The first portion of the question depends upon the congregation; the second, the justification of the computer as a tool in the ministry of the church, can be answered, as shall be seen, with a qualified "Yes."

THE TRS-80

The final system which shall be examined is that of the TRS-80 Model III, a microcomputer which is marketed by Radio Shack. This system

system was chosen for inspection for two basic reasons: availability, in that it is sold through a large number of retail outlets across the country, and representation, in that it shows what types of programs are available for use or modification from the business community.

The hardware of the system is housed in two units, the first being a desk-top unit containing the CPU, input device (keyboard and keypad), CRT screen, and two mini-disc storage units, having a total of approximately 306k of storage. The unit itself is available with various storage capacities; a standard would be 48k of RAM storage. The other portion of the unit would be a printer, and a great many of these devices are offered for sale through this firm. For the sake of illustration and consistency with the other programs discussed we will assume the use of a Daisy-Wheel II printer, which has capacities very similar to the "Spinwriter" discussed before. This printer would provide letter-quality printing on paper or stencil at a minimum speed of 500 words per minute. Cost of this unit as described would be $4,474.95 for hardware alone.

Word processing software for use with this system would cost $199.00, with an optional dictionary which automatically corrects errors in spelling costing another $149.00. Other available software includes general ledger, inventory control, accounts payable and accounts receivable, payroll, business mailing list (with eight categories for subdivision), and a check-writer program which gives chech register plus tracking and bank reconciliation systems. Also available are programs for time management, project management, personnel management, and filing systems which would be adaptable to membership lists and the like. Costs of these

various programs run from $30.00 to $200.00, depending on the complexity of the program. Program software for a system including word processing, general ledger, accounts payable and accounts receivable, check-writing, and filing systems with search capacity would be approximately $930.00, and the programs, though canned, would in all liklihood have to be adapted to some degree for congregational use.

Similar programs are available through other firms, including such companies as Apple, Pet, Commodore, and even IBM. International Business Machines has a program called BRADS III (Business Report/ Application Development System III) designed for its minicomputer which is geared toward helping the user write his own programs, but that program is not currently available in the microcomputer format.

Sources for hardware are numerous and varied, but software suppliers for church applications seem to be as scarce as the proverbial hen's teeth. The technology exists to put the programs discussed into current use, but the lag between technology and this specific application seems great. One major problem, which will be discussed in the next section, is this lack of software and the concurrent lack of capable programmers in the congregational setting who have either the time or the inclination to establish such software.

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[1]Report of Consultation on Church Use of Computers, initial draft.

[2]Thurman Francisco, The Lutheran Church--Missouri Synod, Saint Louis, Missouri, interview, 16 November, 1981.

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PULLING IT ALL TOGETHER: A QUALIFIED "YES"

Ample information is available supporting the fact that the use of a computer can increase efficiency and enable planning to take on a more legitimate basis than that of pure guesswork. Information can be handled and processed with a computer at a rate far outstripping even the most efficient of humans, and that information can be used in a myriad of ways, also within the church. It would seem from the many examples already cited that the computer is virtually a *sine qua non* for parish administration, providing all of the solutions to the problems of information management, office and clerical skills and needs, and accounting practices, while throwing into the pot an almost limitless capacity for future work and uses. The computer would appear to be the "be-all and end-all" of the parish from an administrational standpoint, and there are those who would warmly defend this contention against all comers.

Yet there is no simple answer to the question of automation in the parish. This decision, like all other decisions involving change and progress, may well not be an easy one, for not everything is as rosy as it would first appear.

It is worth remembering that the most impressive list of functions that the computer can perform is just that, a list of possible functions. A large percentage of the problems encountered to date stem from the fact that there is a limited abount of software available for use in the church. Many congregations rely for their operating software on

members of the congregation who are computer programmers, which leads to some difficulties. First, there is no formal support organization to help in the event of difficulty. The programmer is already at his full-time job during the day, and as a result cannot be consulted when the problem occurs. Call after supper and he may be hesitant to come over and help with the program; if he is not hesitant his family may be, for he has invested so much time and energy already into that computer at the church. Secondly, the programmer begins to feel a high level of frustration, for he is failing at his task of making the system "idiot-proof", underestimating the inability of pastors and secretaries to understand the complexities with which he works every day. He feels that he has let the congregation down, perhaps having already offered his services while the computer was being considered, and feels that the congregation is somehow blaming him for the system's shortcomings.

Of course there is the option of hiring a company to do the programs for the system, but once again the cost factor comes into play. Consulting systems designers are not inexpensive to hire, and the additional strain on the budget can be justified only if the budget is very large and healthy.

Prepackaged software, canned programs, can be adapted, but once again it becomes a case of the software not fitting the job. If done by a non-professional the program can become a patched-together maze of error and problem, with the result that it becomes almost impossible for anyone but the programmer/adaptor to use the program. The hardware and the software are there for the basic functions of the computer, and

a working and workable system can be established, but many of the more esoteric, though useful, functions which the computer can perform must wait until the software catches up with the need.

It is for this reason that the Consultation on Church Use of Computers will recommend in their report that, if a system is purchased by a congregation, it have a certain minimum set of standards which will permit it to be compatible with other systems in the synods and organizations taking part in the survey. Minimum requirements will include an RS-232 interface and an s-100 port, both items of hardware which permit the computer to be interfaced with other computers and with peripheral devices, and that the computer have the CP/M capacity, which allows interfacing with floppy discs for storage. Also suggested will be a computer based on the Z-80 chip, a microprocessor which processes 8-bit segments and is the industry standard. There is a very practical and logical reason to these recommendations, which can be shown by example.

If, in the future, a given church body sees a great need or usefulness in the use of computers in the parish setting, that group may well also see the need for hardware. If that hardware is professionally produced under the auspices of that group it can be reproduced essentially for the cost of the magnetic medium, around $5.00 for a mini-floppy disc. It can then be offered to the congregations within that group at the cost of production, but only if their system is able to manage that program in the format that has been chosen to present it. Thus the software production can be standardized to a degree, with new and useful software being offered at a negligible price to those equipped to make use of it.

Granted, this type of operation may be well in the future, but in the world of technology the future has a way of catching up with the present rather rapidly. If futurists are correct it may be possible to establish an orbiting communications sattelite for around $10,000 by the year 1990, thereby opening the world of communication to even the household user, not to mention the parish and its synod.

Another problem which faces the user of the computer in the church today is that too much is expected of that computer in the area of time-saving and reduction of administrative load. The CCUC report states:

> The experiences of those congregations which have already taken the step to automation suggest several strongly worded caveats:
>
> 1) The quality of congregational administrative processes tends to deteriorate as the size of the congregation increases. In consequence:
>
> 2) No staff time will be saved by the automation of a congregation's administrative functions. Instead, the discipline imposed by automation will force a review and implementation of administrative procedures that are a considerable improvement over the procedures that they replace. The total staff time requirements will tend to exceed the time requirements of a manual system although the quality of the results of an automated system usually surpasses those of a manual system.
>
> 3) The proportions of the greater time spent will tend to change, with automation, among the functional areas. Less time will have to be spent on accounting, bookkeeping and budgeting and more time will be expended in such areas as talent and skill banks, visitation support and word processing.
>
> 4) If implemented on a system not located with the congregation itself, both the time and dollar costs of a full implementation will substantially exceed those of a system implemented on a micro-computer operated by the congregation.

Thus a further caveat is in order: Don't expect the computer to save large quantities of time in all areas. Though there may be a quantum

reduction in the time necessary for such tasks as bookkeeping and accounting, other functions of the computer, if put to full use, will userp that time gained. Rather, expect that the computer will offer a means of doing a job better in the same amount of time; more attention can be lavished on administrative decisions, not details, but the total time invested will probably remain at the same level as before and may even increase.

An additional warning comes to light through the research that has been done by the CCUC; do not turn the computer operation over to the pastor of the congregation. There is something about computer operation which resembles in many ways a cult from the standpoint of addiction and the loss of normal reason. Congregations which have turned the computer operations over to their pastors find that his involvement with the terminal becomes so complete that the pastoral functions of the individual suffer as a result. It is very easy to get "hooked" on computers, rather than being merely content to permit them to perform as a tool, and this ease bears warning to pastors and other staff members whose prime responsibility is not administration by means of computer.

Yet, after all is said both for and against the computer in the church, the fact remains that computer technology is here today, and that technology can be applied to the church in a manner which can enhance the church's ability to carry out its mission in the world, that mission of spreading the Gospel to every creature. The computer is a tool which can help greatly in the organization and administration of the Body of Christ, and as such should not be lightly dismissed with

such as, "The computer can't do us any good at all," or, "Why do we need a computer? The old methods are good enough." Rather, what is needed is a careful analysis of the possible uses of the computer as well as a commitment from parent church bodies toward assistance.

> If the national church bodies choose to adopt a "hands-off" attitude with respect to congregational automation, it can be expected that congregations will continue to purchase computers and attempt to implement one or two of the potential application areas where the need for assistance seems greatest at the time. They will then engage in a trial and error learning process for several years. Sadder but wiser, they will eventually home (in) on the technology that is appropriate to the task. The learning period will bave been difficult and lonely. While they will have learned much about the technology and about their own needs as they relate to that technology, the lessons will be costly in terms of dollars, strains within congregational councils, and lost enthusiasm.

The need is for brainpower; the technology is there, and only needs to be channeled into proper directions with proper guidance and support. There is no reason why the parent church bodies could not be viewed in the future as a source for assistance and advice, especially in the area of usefulness and assistance on the parish level. The tool of the computer is too powerful and valuable to dismiss out of hand as a means of enhancing the mission of the church and its accomplishment of that mission.

> The congregations have shown the computer to be a powerful tool for ministry if it is mastered. Properly viewed, the computer can become an even more powerful tool for ministry. It may recall a forgotten hymn from a remembered phrase or alert a parish staff person to the missing links and snags in the procedures and follow-up required in the rapid organization and coordination of the frequently heavy schedule of funerals, baptisms, confirmation, weddings, and special services. It can provide early warnings of the flagging participation of unnoticed members or alert the pastor to a special day in the life (of) a member. Dog-eared boxes of worn visitation cards of dubious accuracy may be replaced by up-to-the-minute displays of matches of visitor to visitee by location in the areas served by the ministry, including a report of follow-up.

If such a tool is to be left unused in the Carpenter's tool kit, let it be done in full knowledge of His gift to us. If it is to be used, let it be done in the full joy of understanding.

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