The Need For Household Knowledge Management Systems:
A Call To Eliminate The Digital Divide

by
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Life, liberty and the pursuit of happiness are the basic desires of all Americans and in fact people everywhere. In my opinion, the economic security and societal success that are implied are based on an individual or family having three essential supports:

1. Strong families in supportive communities.
2. The ability to acquire and manage financial assets.
3. Effective and efficient "Knowledge Management."

These support elements are inextricably linked and must be simultaneously and continuously available.

Family provides the framework for perspective on individual and group identity, acceptable behavior and expressions of value. Therefore, family definition can and should be broad enough to include one's chosen family; like church, friends, teams, etc. as well as the classic nuclear family. It is also essential that communities possess strong and effective organizations, for example faith-based organizations, schools, and others that are actively engaged in and/or supporting the development and strengthening of families in the community. However, families must have financial resources to meet the needs of its members.

It is a basic tenet that one must work to eat. Earning a wage is the fundamental endeavor for almost all adults in developed countries. Income from the wages of family members is the mainstay of economic security for most households. However, the rapid development and implementation of technology and the globalization of industry has made the security of wage earning more tenuous. Wage earners in today's American workforce can expect to change jobs and even careers multiple times during their work life. The alternative is to have financial assets that are available to support the family when income from wages fluctuate or diminish. This is not an original concept. President Bush and his critics, while they disagree on the means, agree that the aim of promoting ownership or an "ownership society,." is beneficial (Brown, et al. 2005). Our economy and legal system are based on citizens owning assets. For most, this is a house; while a large and increasing number of individuals and families from a large diverse spectrum of socioeconomic levels own equities like stocks and other financial instruments and increasingly, for many, it means a small business. Nevertheless, simply owning financial assets is not enough. Success depends on managing those assets effectively in the dynamic markets of today, which means having the knowledge to do so.

Therefore the final leg of the tripod is individual and family knowledge management. Success with the other two elements requires individuals and families to be able to acquire, evaluate, synthesize and apply information in an increasingly complex world. Knowledge and its effective management is essential to family and community success and the acquisition and management of financial resources. However the challenge is how to effectively acquire and manage knowledge today. The traditional thinking of learning a skill or getting a college degree for career security is no longer true. Moreover, it is essential for one to continuously update their personal skills to remain competitive. However, there is a "catch 22," in that it is virtually impossible to acquire new skills when one is fully engaged in

earning a living. The answer is the effective access in the home to currently available information and communications technology, coupled with the effective skills to efficiently use the resources for continuous learning, information research and economic and service delivery transaction processing.

Personal computers and the Internet have transformed American society. The ability to effectively use a personal computer (PC) and the Internet is now considered a fundamental skill for school age children as well as working adults. In fact, a recent Kaiser Family Foundation study found that virtually every child, regardless of race and socio-economic status has used a PC and has been on the Internet at school. However, the ability to have effective access away from school or at home is significantly less common. A recent study by Susannah Fox, from the *Pew Internet And American Life Project,* found that over 20% of US homes still lack ANY Internet access in the home after the advances and lowering cost of PCs and the dramatic increases of online content and services over the past 10 years (Fox 2005). Further, access to high speed Internet access at home is a new marker or predictor of effective Internet use. (Fox 2005). Unfortunately, the major portion of this group in the US and Georgia is made up of the poor (mostly adults with a high school or less education and largely African Americans and non-English speaking Latinos) and the elderly. Ironically, this is the group of people that the Federal, state and local governments spend the most on to serve, or to deal with the problems arising from their socioeconomic condition. Businesses have found that the best way to stay competitive is to equip their workforce with computers, high speed internal networks and broadband Internet access, coupled with the tools of knowledge management. At risk families need the same resources to increase the likelihood of success. This problem has been known as the "Digital Divide." While most families enjoy the benefits of effective access and skills to use information and communications technology (ICT) and the ability to mange information or knowledge at the household level, those that need the benefit the most seem to be intractably lacking this vital resource.

Many have thought that universal effective home ICT access is a matter of personal choice and community based computer and Internet access are sufficient to meet the needs of our society. Indeed, the cost of a personal computer and Internet access is equal to and in some cases cheaper than a high quality color television and the most popular cable or satellite service packages. One would be hard pressed to find any household in America that has electricity that doesn't have at least one color television and some content delivery service such as cable or satellite programming. Further, there has been virtually no discernible technology gap between African Americans, Whites and large majorities of adults from age 18 – 64 in the adoption of cellular telephones (Horrigan 2005). Moreover, we have invested huge sums of tax dollars in providing computers and high speed Internet access to schools and public libraries. However, television, after well over a century of existence, is still primarily an entertainment medium and has turned out to be a highly popular, but, relatively poor source of household knowledge. Further, while cellular telephones are widely used by most Americans and the capabilities are rapidly increasing, they have very limited effective capabilities for education and continuous skills development. Finally, computer and high speed Internet access at schools and public libraries for the vast majority of those that lack the resource in their homes is severely limited by hours of availability and short usage time limits due to high demand. Moreover, most people of limited

financial means have to work on shifts that make effective ICT usage impossible unless it was available "24/7" in their homes. The persistence of the ICT *Digital Divide*, should now be looked at as a serious drain on our economy and an impediment to improving our technological competitiveness.

One example of this is that the Georgia Department of Human Resources is responsible for providing family independence resources, like Medicaid, and public health services, such as school required immunizations, to poor residents. Medicaid is administered by the Division of Family and Children Services (DFCS) and immunizations are administered by the Public Health Division. In Cobb County, one of the state's and nation's wealthiest, there are multiple cities and a limited public transportation system. Cobb DFCS and Public Health offices are located in Marietta, the largest city and county seat, but in different government complexes several miles apart. If a poor mother without a car in the center of Powder Springs, a smaller city west of Marietta, wanted to get Medicaid services and immunizations for her children entering schools, she would have to get to the commuter express bus terminal several miles away or get a taxi or a ride from a friend to central Marietta and then take a bus to either DFCS or Public Health, but must visit BOTH facilities. While DHR has a central network and servers that run applications for both DFCS and Public health and the state has invested heavily and deployed a wonderful web portal for government services, the personnel for the most information intensive needed government services, Medicaid, are located at the DFCS building and there is NO means for the mother to submit most of the information via the web, nor to have a DHR representative at Public Health verify eligibility. In effect, the citizens of Cobb pay for 2 buildings, a massive computer network and Internet web-portal to serve the same client and forces them to go to 2 different places to complete a task that could be done at one less expensively and with less hassle for the customer, if there was a means for the mother to perform most of the informational part herself at home using a computer, software and broadband Internet access (Home Knowledge Management System) that most residents of the county who don't use these services already have. Ironically, Georgia, like many other states is facing a major financial crisis because of the cost of delivering Medicaid support to our poorest citizens.

The Committee on Science, Engineering and Public Policy of the National Academies, in a recently released study, states that we in the US are in peril of losing our technological leadership and correspondingly, our economic competitiveness (Committee 2005) because we do not produce near as many math, science and engineering degreed young adults as China or India. Thomas Friedman in his best selling book, *The World Is Flat, A Brief History of the 21st Century,* states that in order for an individual to compete in today's global economy, they must be either "special, specialized or adaptable." (Friedman 2005) Since there are limited numbers of people that have world class special talents or can develop specialized skills, the majority must become adept at being adaptable to a world class level. In recognition of this need, a large and growing number of colleges and universities and other post secondary institutions have implemented online degree and certificate programs. For instance, Georgia has run the Georgia Virtual Technical College for a number of years. It is relatively easy for a person to earn a degree or continuously update their skills from their home, at a time that is most convenient for them. However, this is only available if one has the basic skills and resources to effectively utilize a PC and the Internet, which I call Household Knowledge Management.

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A Household Knowledge Management system is the integration of a current era personal computer (Intel Pentium 3 class or equivalent at a minimum), desktop productivity software, broadband (cable, DSL or other high speed medium) Internet access. In the sense of a Household Knowledge Management system, I believe that a centrally accessible DESKTOP computer system is the most effective form factor. While laptops are most flexible in their usage, it limits the ability of parents to monitor the usage of minors and ownership costs are generally much higher. As the maturity of family members increase and the demands for usage, many, if not most, families will benefit from a household network.
Desktop Productivity software like Micro Soft Office Suite [1] and Open Office Suite [2] are the glue that allows relatively easy manipulation and synthesis of data into usable information and accessible knowledge. Further, file sharing services and software like those available from SIMDesk Technologies [3] and Internet service providers like Earthlink [4], allows easy sharing and virtually limitless access across the World Wide Web to ones own information and effective security to control the access of others. Finally, broadband or high speed access is the electronic super highway for connecting a family to education, entertainment, continuous learning, information and services like banking and shopping. Broadband versus simple dial-up is preferred because of the tremendous advantage of speed. It is like the difference between having a family automobile to get everyone where they need to go and having to walk; you can get everywhere you need to go by either means, but how much more can you get done if you have a car?

America now has the means to eliminate the ICT Digital Divide. Personal computers are plentiful; refurbished used systems at low costs from small dealers and some social agencies and reasonably priced new systems at most department and office products and electronics stores. Easy to use software is available and in some cases, like Open Office, it is free. Broadband access is still not available everywhere in the country. However, it available to most homes in cities and many rural areas at costs that rival or are lower than cable or satellite television programming services. What remains unanswered is if we have the will to no longer tolerate this problem. We must educate those that have not chosen to invest in Household Knowledge Management of the benefits they are denying their family and the economic risks they are taking. We must incent broadband providers to make the investments to deliver broadband to every home. We must lobby our government at all levels to push for programs for universal broadband access.

America has solved problems like this before, for example clean potable water and pre-school immunizations for communicable diseases. In the early twentieth century, universal access the benefits of electricity looked a lot like the Digital Divide of today. Just as there are means and efforts at

1 MicroSoft Office Suite is an application package from Micro Soft Corporation
2 OpenOffice Suite is an open source application package available from OpenOffice.org
3 SIMDesk Technologies provides desk top and web-based messaging, file, print and groupware services. Some states and localities Indiana, North Carolina and the City of Houston, Texas have made the SIMDesk suite available to all of their citizens free of charge.
4 Earthlink is an Internet service provider that provides broadband and dial-up access services and a number of web-based services and software applications

"bridging" the Digital Divide today, there were efforts at having people come to places of common benefit of electricity. However, there was a recognition that it was no longer tolerable for any household not to have access to inexpensive and reliable electricity. So, we launched laws like the Rural Electrification Act of 1936 and developed corresponding organizations and infrastructure to produce a system where it almost unheard of that any family home in America lacks electricity. If America does not choose to eliminate the Digital Divide, there is competition in the increasingly"flat world," that Thomas Friedman describes that are capable and willing to take our place as the technological leaders of the world (Friedman 2005).

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