

International  
Development on  
the Eve of the  
Third Millennium



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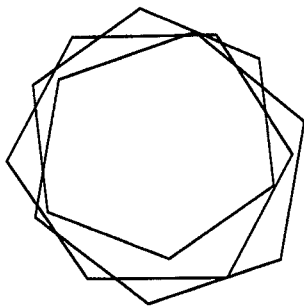
**International Development on the Eve  
of the Third Millennium**

Keynote Address to  
IV Pan American Congress on Health Sciences Information,  
San José, Costa Rica, March 24<sup>th</sup> - 27<sup>th</sup> 1998

First of all, thank you for having invited me to be with you today. Costa Rica is one of my favourite countries and I have long admired the work of PAHO. And these factors make being here as your guest a special honour and a great personal pleasure.

The title of your Congress is "Information Networking: Bridge to the Third Millennium". Now this is a very tantalising title. It speaks to the future - the third millennium — these words sound both hopeful and inspirational. It refers to a bridge, a solid physical metaphor suggesting continuity between where we are and where we are going. And it tells us that information networking is the vehicle or means that will provide continuity and transport us from the second thousand years of Christendom into the third. So this is a most tantalising title.

The question is: are we convinced that the title has it right? If we are, then surely the task of this Congress is to concentrate essentially on one question - the how to do question — how best to do information networking. I would suspect, however, that there are many doubts and concerns in this room. Some of you may be like me in finding the prospect of the new millennium rather bewildering. Also, some of you may question whether there will be very much continuity at all in the world that is unfolding. You may think that, rather than go across a bridge, we are all being forced to leap across a chasm and into what is unfamiliar and undesirable. And some of you may be looking with deep suspicion and even resentment at the new information technologies on which information networking will depend. Indeed, deep in the heart of hearts of a few of you may lie the instincts of a Luddite, anxious to smash the machines and go back to where things were. If some of you feel this way, you would not be alone. The indications across our world are that there are a great many



who have feelings of trepidation about the next millennium and about technology.

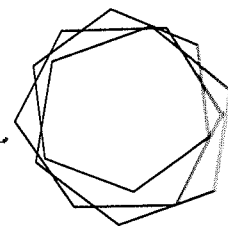
The organisers of this Congress have asked me to speak to these issues. Specifically, the terms of reference which were sent to me asked me to do the following:

- First to talk about where we are and where we are going in international development.
- Second, to suggest what the new information technologies are doing for and against people.
- Third, to comment on the implications of information technologies for libraries and for the dissemination of technical and scientific information.
- Fourth, to suggest how the technologies might be applied to meet the needs of people and the challenges of development.
- Fifth, to be "provocative" throughout.
- Sixth to do all of this in about 40 minutes.

Your organisers, in other words, stopped just short of asking me to provide the definitive account of the evolution of human civilisation and of the human prospect for the next one thousand years!

I do exaggerate to make the point, but not by much.

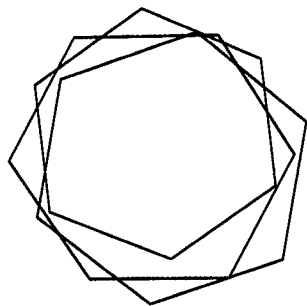
And the point, of course, is that this is far too ambitious and certainly cannot be dealt with any degree of seriousness in 40 minutes. What I will try to do within the time available is far more modest. I will try: first, to provide a background and context on international development; second,



to outline what I believe to be the nature of the real challenge to international development organisations like PAHO in this transition to a new millennium; third, to comment briefly on the new technologies and technological change; and fourth, to offer a brief word about libraries. I will attempt to be provocative in the dictionary definition referring to controversial ideas leading to thinking and discussion about interesting or exciting things.

## The Current State of the International Development Effort

Let me turn, then, to the international development effort in which all of us are engaged.

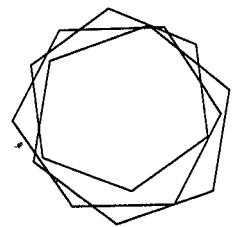


It strikes me that if you examine the public reports of most international development organisations covering the past 5-10 years - whether bilateral, multilateral or non governmental — you are likely find four things in common. First, most will claim with increasing stridency that development faces a crisis. Second, many present the crisis as essentially financial and appeal for much greater levels of funding in order to bring about development. Third, most organisations have been announcing that they are “reinventing, reengineering or transforming themselves”. Fourth, we are all building synergies and new partnerships through information networking.

A major and highly lucrative new industry of management consultants has

developed around and guides these common factors and directions. They counsel development organisations on the secrets of future success which include the preparation of new mission statements, strategic orientations, fifth disciplines, business plans, improving both image and presentation, and transformation to reach the new horizons that are aglow with technological possibilities. Not surprisingly, a lot of the literature which international development organisations are producing to define and present themselves to the public and to political leaders is beginning to look a lot like the literature of Proctor and Gamble or Microsoft.

The appeals that are made with a view to obtaining increased support for international development efforts are, of course, numerous and varied. There are, in general, however, two defining characteristics. The first is a positive message involving an appeal to nobility, to our humanity. Essentially, this message rests on the proposition that we should all want to make the world a better place and that we can do so. The second simply turns the message around and attempts to appeal to our fears. This message tells us that if we do not act to eliminate poverty, misery and disease and to save our environment then the consequences on us and on our children will be grave. These two defining characteristics may remind one of words once spoken by the American gangster, Al Capone: "More is accomplished with a kind word and a gun than with a kind word".



Now with the reengineering, transformation and fresh presentation that has been occurring and with all of the expert and expensive advice that has been provided, we would all wish to see evidence that the efforts are succeeding. Alas, the evidence does not provide much encouragement.

Take, for example, the recent publication, *The Reality of Aid*, based on an

independent review of development co-operation for 1997-1998 by ACTIONAID, a leading European NGO. A representative sample of what appears in that publication appears below. The publication concludes that the decline in support for international development has moved from decline and into free fall. The international development effort, it tells us, is in a deepening crisis.

#### FROM THE REALITY OF AID - 1997-98

AUSTRALIA: "The new government....kept its election promise to cut the aid program. The 10% real terms reduction ..... represents the greatest cut in a decade."

BELGIUM: "For Belgian development cooperation, 1996 has been another..... lost year."

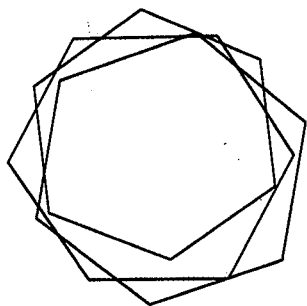
CANADA: "Repeated and substantial cuts....have been leading many..... To question .....Canadian development assistance..."

FRANCE: "While not reaching the devastating scale of the decline in Italy (42% in real terms) or the USA (27%), the volume of French aid fell more than any other donor..."

GERMANY: "...budget cuts of up to DM500m for the next budget.....development cooperation could well fall to a 'negligible quantity'."

JAPAN: "1996 became the year that Japan's ODA was cut dramatically. In dollars, Japanese aid has fallen by 35%....But from FY 1998 there is going to be an (even larger) decrease."

SWEDEN: "For decades, development cooperation constituted an important part of Swedish foreign policy; it was even a central issue within the overall social democratic project.....All that is now history .....The 1997 cut (30% was done without major protests from within Swedish society."



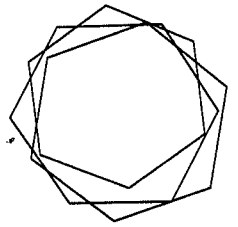
It appears that neither appeals for public and political support nor the new

face of reengineered and transformed institutions is succeeding, if success is measured by financial commitments. So what are we to make of this?

Certainly it is not the case that development has ceased to be necessary. Over a billion of humanity still lives in poverty and about half that number in "absolute poverty"; by most accounts the gap between rich and poor is widening; the media remind us with frightening regularity of the risk of new pandemics resulting from the conditions of poverty and environmental destruction; and opinion surveys confirm that the idea of an "interdependent" world has taken hold in the public consciousness. How then do we explain the decline in development?

In my view, we can only begin to explain this by understanding that the new post Cold War context in which we are living has transformed dramatically and permanently the very framework that gave rise to the international development effort.

That framework and the socio-political foundations for international development emerged at the close of the Second World War. Development was part of a new age in internationalism. The political and intellectual leaders which brought this about had been formed by the traumas of economic depressions and World Wars and had united in the common cause of "never again". It was the political and economic order that they established that gave rise to the idea of universal development as a socio-political force. This idea was truly revolutionary and produced a totally new international mindset. Before this occurred, the prevailing international view was that most societies were distinct, non-comparable and destined to remain so; to understand most of them was the stuff of cul-

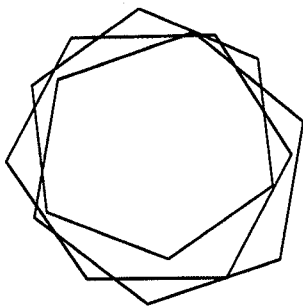




tural anthropology. The new mindset placed all societies in the world for the first time on a single continuum - the continuum from least to most developed (defined, of course, by the norms of the most developed). All of humanity became comparable and all of us were headed to the same place.

The result has been that, for most of the last fifty years, we have witnessed an inspiring, publicly-funded experiment in international development, arguably the most noble experiment in human history. Its accomplishments have been remarkable when measured by such indices as life expectancy, infant survival, nutrition levels or even poverty elimination. Its failures are also well known and have been recorded in social disruptions, biodiversity loss and environmental destruction.

Whatever its accomplishments and failings, however, this great, publicly-funded experiment was built from and depended on a post-war order that has now largely ceased to exist. In his well known book, *The Development Dictionary*, Wolfgang Sachs puts it in the following dramatic terms: "The inspiring vision of world development is in ruins. Overtaken by forces that it failed to anticipate, it lives on only by the forces of institutional inertia".



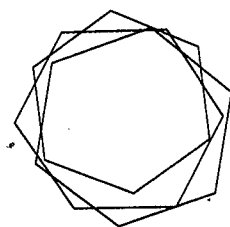
This formulation by Sachs is, in my view, overstated; it is too journalistic for my liking. The point that I am making is that we have entered a qualitatively new phase in the international system. The further point is that the institutions and the practices of international development are largely unprepared for this. Development has not failed and virtually all major indicators show that this is the case. The development effort, how-

ever, has been overtaken by and risks being swept aside by a tidal force of new events.

If this assessment is correct, what is called for is nothing less than a fundamental re-appraisal of the very meanings of development and progress at a time of unprecedented turmoil in practically all aspects of human activity. This will not be easy, for the fact of today is that, inside or outside governments, there are no dramatic new ideas that command anything like the intellectual consensus or enthusiastic public support on issues of money, trade or development that existed following WWII.

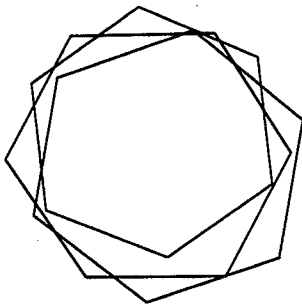
The appropriate starting point for any re-appraisal is to place development issues in their new context of which some of the key elements are the following:

- The development experiment was anchored in the political order of the cold war that disappeared as we entered the 1990s. This has been replaced by the uncertainties accompanying a transition to a new, more complex and less predictable world order. Simultaneously, the international economy is experiencing its most profound transformation since the industrial revolution, including major shifts in trade patterns, the internationalizing of financial markets, and changes in the nature of work and the impact of technological advances. Most development institutions currently have little to do with and almost no influence on these major forces that are shaping our world.
- At the deeper level of society and culture, the time-honored assumptions that have underpinned the local social order in many parts of



the world are being overturned, often with tragic and savage results, particularly evident in the developing regions and the former socialist countries, but are also increasingly apparent throughout Western society. The complex web of human values and interpersonal relations that enable communities to live together is similarly being subjected to unprecedented strains in many parts of the world. The question for development organisations should go far beyond whether they can provide, for example, blankets, food and shelter to refugees. The question that needs to be addressed is what these social transformations will mean for the human condition and for development.

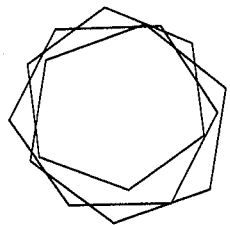
- And all of this is driven by scientific advances and technological innovations whose pace and impact - both positive and negative - are unprecedented. As a consequence, those with the capacity to absorb, use, and adapt the advances in science and technology will be better placed not only to enrich themselves but also to influence the conduct and evolution of human affairs. Those unable to harness these advances will be increasingly marginalised. With few exceptions, scientific and technological innovations are being driven by private interests. The institutions of international development exert little, if any, influence.
- Development was constructed on the basis of a North-South axis as the dividing line between wealth and poverty. That was essentially a valid reflection of reality in the 1950s and 60s. It has not, however, been the case for at least twenty years. Increasing concentrations of individual wealth are now found in countries that aggregate statis-



tics continue to treat as poor, and vice versa. The next very few seem certain to increase such tendencies. The Economist magazine predicts, for example, that nine of the 15 leading economies in the world will soon be countries that we now call "developing", that China will replace the United States as the world's largest economy, that India will replace Germany as the fourth largest, and that up to 95% of the world's active labour force will live in the South. The old geographic fault line between rich and poor has been replaced with a near-impenetrable patchwork that cuts profoundly within individual societies and which is making increasingly meaningless the aggregate statistics and concepts which are used to understand development. Yet in spite of all of this, many international development organisations - I believe that they are by far the majority - continue to present the world as if the old rich-poor dividing line were still a valid reflection of reality. They are failing badly in coming to terms with new complexities.

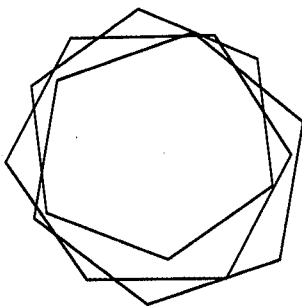
It seems to me, therefore, that the international development effort is today in very serious trouble. I have noted that a great deal of institutional effort has been and is being expended in the application of practices borrowed from business and industry, principally reengineering, repackaging or dressing up public relations with the help of expensive consultants. This may be good and necessary, but it is far from sufficient.

The reality is, as I have mentioned, that we are in a qualitatively new phase in the international order. Surely, the institutions founded expressly to bring about development should now be at the forefront of working through and providing guidance on the meaning of this for fu-



ture development efforts. They have, after all, much success and a rich experience on which to draw. For the most part, we are not doing this. In his hopeful account of our times entitled "Birth of a New World", (subtitled 'An Open Moment for International Leadership'), the distinguished American scholar and internationalist Harland Cleveland provides convincing evidence that ours is indeed a world crying out for renewed social guidance. His is also a reminder to the international development community that we cannot hope to contribute to this unless we begin first by thinking clearly and by understanding the new context which confronts all of us. It is time for all of us to begin this and to do so together. The old Chinese proverb bears repeating: "If we don't change direction, we'll get to where we're going".

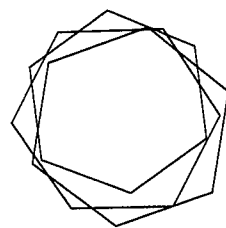
## Globalisation: Order and Disorder



I would like to turn for a few minutes to globalisation. This is a word that did not even exist 15 years ago. It is a portentous and wonderful word that means precisely what the user says it means and it has become the most fashionable word of the 1990s. Just as poets and songwriters in an earlier age celebrated the rise of modern nationalism, so in our day governments, businesses, journalists, environmentalists, academics and international organisations write and sing hymns of praise to the global village. Globalisation is the new mantra and, barring a return to protectionism which is improbable at least in the short term, it is not going to go away.

Now what have international development organisations been saying about globalisation? Well, frankly, not much that we can be proud of. Most bilateral and multilateral institutions of international development have placed themselves at the forefront of sweeping claims of the benefits of globalisation. Other development agencies, mainly non-governmental, have situated themselves in resolute opposition to all aspects of globalisation. These opposing positions do not seem to have led to very much of the serious and patient study that is called for, to an open-minded search to understand what is happening, although the recent, dramatic and tragic events in East Asia may be exerting a positive influence in this regard.

Globalisation is most often portrayed by its advocates as an integrating and homogenising force, but the truth is much more complex in terms of its dynamics and impact. First, it is an *ambiguous* amalgam of potentially contradictory processes which promise both integration and disintegration, inclusion and exclusion, opportunities and problems, equalisation and unequalisation, creation and destruction, mobility and entrapment, order and instability. It is a deeply *uneven* process which operates at different levels through parallel processes of regionalisation; affects different regions and countries differentially and, within countries, different areas and social groups; and advances at different speeds across economic terrains (for example, more rapidly in financial than in labor flows). It is an *unsettling* process which imbues economic transactions, particularly in the realm of finance, with greater volatility and threatens to bring more uncertainty and insecurity into people's lives. It is a *disempowering* process in that it reduces the autonomous power of national governments, undermines the accountability which is the lifeblood of democratic politics and breaks up established social relationships in the realms of kinship and

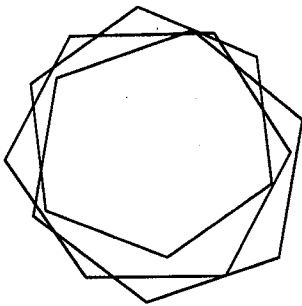


civil society. Significantly, these four characteristics of globalisation are evidenced in developing and industrially advanced economies alike.

What this says to me is that the presentation of globalisation as if it were a single phenomenon is a big part of the problem. There is not and is unlikely to be a single globalisation and the forces behind this phenomenon will almost certainly not lead inexorably to homogenisation. What we have and what we are likely to continue to see are many *globalisations*.

Does this not seem so logical when we pause to think about it? The phenomenon from which the globalisation metaphor derives is based on different and distinct happenings in countless separate places. Thus, we will continue to see multiple outcomes, different responses, new institutional arrangements, a complex variety of coping strategies, winners and losers, and new configurations of the included and the excluded.

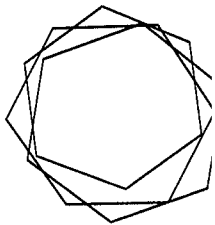
Paul Streeten has provided us with a helpful starting point to thinking more clearly about this.



## Globalisation (From Paul Streeten)

Good For	Bad For
Japan, Europe, North America	Many developing countries
East and South East Asia	Most of Africa
Output	Employment
People with assets	People without assets
Profits	Wages
People with high skills	People with few skills
The educated	The uneducated
Professional, managerial and technical people	Workers
Flexible adjusters	Rigid adjusters
Creditors	Debtors
Those independent of public services	Those dependent on public services
Large firms	Small firms
Men	Women, children
The strong	The weak
Risk takers	Human security
Global markets	Local communities
Sellers of technologically sophisticated products	Sellers of primary and standard manufactured

As mentioned, the above framework may serve as a starting point. Paul Streeten would be the first to caution that some of his classifications may be wrong. He would underscore that what is important is to increase our understanding of the complex and subtle ways in which the global and the local interact, influence one another and establish both synergies and

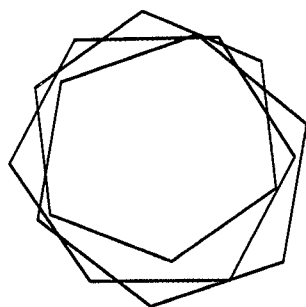




conflicts in a heterogeneous and fast-changing world. Again, this suggests strongly to me that we need to begin think in terms of globalisations and not of globalisation.

Now, what does all this imply for the institutions engaged in international cooperation? A great deal obviously, but I will limit myself to two major implications.

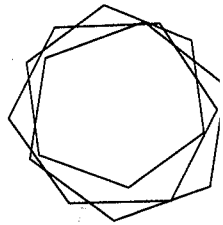
- First, many of the debates on what globalisation means for development are framed as if development were a matter of choosing between global versus local or macro versus micro approaches. This is a false debate and it should be abandoned by all development organisations. These are neither opposing realities nor opposing epistemologies and attempts to depict them as such fall into that same category of intellectual sterility as the modernity versus tradition dichotomy that characterised early post-war area studies. Serious development thinking and action will need to grapple simultaneously with the interconnection of the general and the specific, to link local experience to global forces, and to test the validity of the premises and assumptions underlying globalisation theory.
- Second, this cannot be accomplished under the highly segmented and differentiated arrangements that currently apply. Integrative knowledge systems are required and these will depend in large measure on information networking, the theme of this Congress. Significant investments and strategic arrangements are required to establish these. A lot of recent development talk has been about development organisations becoming knowledge organisations. This is good



because that is exactly what must happen if these organisations are to have much relevance at all in the third millennium (also the theme of your Congress). The fact remains, however, that most development organisations remain part of the family of post WW II "delivery" organisations. Stated very bluntly, very few can claim to be knowledge organisations. More importantly, there is very little in the way of real and effective horizontal integration of information. Yet, it is abundantly clear that such arrangements have become imperative. Without these, international development organisations are unlikely to be significant forces in dealing with the real issues of development in the new millennium.

Globalisations, then, will define much of the context for international development efforts in the next millennium. The institutions involved in these efforts confront issues that are of a greater complexity and nuance than anything known previously. Included in globalisations are differing visions of the relationship between nature and humankind, the transformation of markets, new pandemics and the return of ancient scourges, spiritual/religious upheavals and rejections of "modernity", vast flows of international labour and refugees, the unprecedented production of wealth and at the same time increasing social exclusion and poverty.

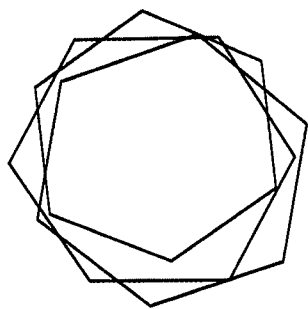
In an earlier time of considerable turbulence, the Spanish philosopher, Jose Ortega y Gasset, remarked that: "We don't understand what is happening to us and that is what is happening to us." His assessment strikes me as especially pertinent today. On the eve of the next millennium, humanity is both witness and victim of the most sweeping process of



change since the industrial revolution.

In the new century, development and progress will not mean the same things that they have meant over the past fifty years. New concepts will emerge and with them the understanding of a vast new complexity of multiple realities. For the institutions of international development that were founded and took their shape and definition in a different era, the question is whether they will be swept aside into irrelevance or exercise leadership in producing the new understandings and the redefinition that will take place with or without them. There is, of course, no choice, although producing that leadership and the innovation that it will need will clearly not be easy. For to quote from Keynes: "The difficulty lies not in new ideas, but in escaping from old ones". Perhaps more apt is the challenge once issued by Albert Einstein: "We cannot solve the problems we have created with the same thinking that created them".

### What Do the New Technologies Mean For Development?



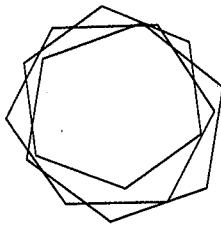
Enough then on the state of development. Let me now turn more specifically to information technologies. There is, of course, a great deal of "hype" about these and many international development organisations have joined in that hype. For the most part development statements on this subject are along the lines that the new information technologies will place people everywhere, from downtown Manhattan to the remotest village in Central Africa, on the same footing. The more romantic and poetic expressions use such words as: "The new technologies are placing all of humankind on

the level playing field for the first time in history". Well, it is a nice thought, but as I have tried to make clear, the truth is that globalisation simply is not working that way. As South Africa's Vice-President Thabo Mbeke curtly observed on this subject: "One half of humanity has never used a telephone".

If we think about it for just a moment, this current hype about the new technologies is not at all surprising. In Western societies from the time of the Industrial Revolution new technology and its mastery have been taken as the main key to human progress. This is not to suggest that there have not been detractors. The Luddites from the textile craft guilds of early 19th century England smashed new machines that they believed — quite rightly as it turned out — would eliminate their jobs and take away their livelihoods. That attitude towards new technology has never completely disappeared. Over the years, many labour unions have fought against the introduction of new technology.

So there have been detractors, a few of them at least. But, by and large, these have been the exceptions. For the past 200 years, a foundation stone of liberal thought and of Western civilisation itself has been a profound belief in the inevitability of human progress through advances in technology coupled, of course, with appropriate education and learning systems.

The intellectual and political roots of the international development effort itself are found in this faith in technology. The popular wisdom following the Second World War, and especially in the 1960's as country after country became independent states, was that progress for all was inevitable.

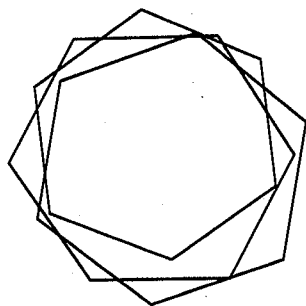


Development was essentially a matter of applying technology, again with the right mix of education and training. It all seemed so logical. After all, were these not the factors that separated economically developed countries from most of their underdeveloped neighbours?

It is hardly surprising, therefore, that the new information technologies that are allowing globalisations to occur should be held up as the new panacea, as the key to the elimination of poverty, misery and want. The conventional wisdom tells us that the horizon is glowing with the new technological possibilities that will solve our problems.

And the new technology is advancing at a breathtaking pace. Allow me to pluck a paragraph from the 150<sup>th</sup> anniversary issue of *The Economist*:

*"Early in the next decade, the central processing units of 16 Cray YMP computers, now costing collectively some \$320 million, will be manufacturable for under \$100 on a single microchip. Such a silicone sliver will contain approximately one billion transistors, compared with some 20 million in current leading-edge devices. Meanwhile, the 4kHz telephone lines to America's homes and offices will explode into some 25 million possible hertz of fibre optics."*



Now this is where I would like to end my speech, at the part where we know exactly what we need to do and where, thanks to new technology the Holy Grail is at last within our grasp and where everybody can live happily ever after. Unfortunately, what we would all like to end as a fairy tale has developed a few major complications. The fact is that some of the calmest, most measured, most logical thinkers that I have been lucky

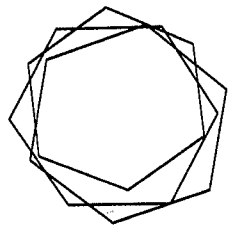
enough to meet in the course of my work are looking at both the new technologies and at the spectre of the 21<sup>st</sup> century with alarm.

Why? Well an obvious first factor involves world population. Even the most optimistic of demographic projections indicate the world population will reach 10-11 billion at some point during the next century. The biggest obstacle to building a better world in my lifetime - and in the lifetime of most of the people in this room - has been and remains a function of the explosion in population over the past half century.

Consider the following: In 1997, according to ILO statistics, there were throughout the world about 90 million new job seekers. The demographic structure that we currently have tells us that in less than 20 years that figure in one year alone will be approximately 700 million. Almost all of these will be in so-called developing countries. Let me put this another way: more people will soon be trying to find work in developing countries in a 2-3 year period than the entire global population at the end of the last century.

This is complication enough, but matters are, in fact, much more complicated. This explosion in people entering the workforce is happening at a time when we are not at all certain what the new technologies will mean for employment, jobs, income and security.

Now this is a hotly debated subject and an exceedingly complex one. Technological change is not new and history tells us how disruptive and painful such change can be. The fact is, however, that previous examples of technological change have always created new jobs to replace jobs lost to



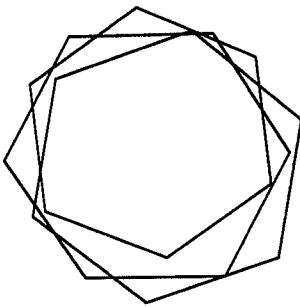
technology. The questions we need to ask are whether that is going to happen this time and what kinds of jobs or work are going to be created.

Robert White, President of the U.S. National Academy of Engineering, is naturally a great admirer of technology. He points out that - and I quote - "technological advance has been the most powerful job creation mechanism [that] society has devised. "But he now asks: "Will the rate of creation of new industries be adequate to provide the jobs that are lost as a result of productivity increases?" And he answers his own question with chilling observations of a few big winners from new labour-saving technologies and of expanding armies of losers from those same technologies. And White concludes by stating that: "... we are witnessing the collision of philosophies and beliefs about economic growth, social equity and technology."

And *Business Week* magazine, a major voice of North America's private sector, used its 65th anniversary issue in late 1994 to focus on the new technologies and their meaning for all of us. The report echoes the anxiety of Robert White and at one point wonders if we are not headed toward a world in which half the population is permanently overworked, and the other half permanently unemployed.

These are frightening thoughts and this is very serious stuff.

The new technologies are certainly creating jobs. The software industry, for instance, didn't used to exist and is now a major employer. It does not appear, however, to be the major employer that the conventional wisdom would lead us to believe. Microsoft and Intel, for example, are the two

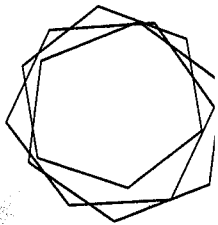


giants of the computer industry, but in 1996 they reported a combined total of only 48,100 employees world-wide. This is small compared with Ford (323,300), General Motors (721,000) or Kodak (132,600). Indeed, all of the computer firms (hardware and software) listed on Wall Street have a combined world-wide grand total of 128,000 employees, less than half the number employed by Ford alone.

There are other data from the United States that might cause us to share the concerns of Robert White. As a general hypothesis, one would expect that the explosion in information technologies, especially in the United States, would create an especially high demand for engineers and that such demand would be reflected in higher average incomes. The data show the opposite: between 1968 and 1995 the median salary, including benefits, of engineers with ten years experience declined 13 percent in constant dollars.

As I mentioned, the relationship between technological change and employment is exceedingly complex. This is all the more so today in our world of shrinking national borders. We need much better information and to invest in learning a great deal more about this.

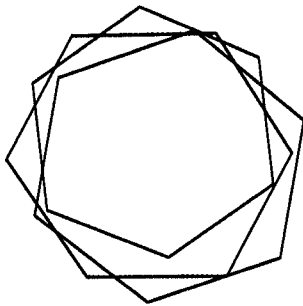
Whatever that additional and improved information may add to our understanding, however, one thing does seem quite apparent: our technical creativity is racing far ahead of our social creativity. We do not suffer from a shortage of talent when it comes to producing new technologies or in the organisation required to use and to innovate around technologies. In my view, what we do suffer from is a dangerous shortage of talent in understanding what it all means, what it will mean for our children, how





to spread the gains and minimise the losses, what it will mean to society, to community, to our capacity to govern ourselves, to culture and to the human spirit. These are the issues on which global leadership is required and on which the very strongest of leadership should be forthcoming from international development organisations. In his recent study *Has Globalisation Gone Too Far?*, Dani Rodrik concludes that it is precisely these issues that must be urgently addressed and that continued failure to do so will produce social disintegration.

I must be very clear here. I am in no way arguing that international development organisations should reject the new technologies. Quite the contrary - to do so would be a breathtaking act of suicidal stupidity. The technology does offer a way forward. There is no shortage of information. The era in which we live creates mountains of information on daily basis. One estimate goes so far as to suggest that we now produce and transmit more information in a single week than in the entire 19th century (although I do not know for the life of me how one would arrive at such an estimate). The application of technology is urgently required to sift and search these mountains and to distribute the information more equitably. Libraries can and should be at the forefront of such an effort. At my institute, the Institute of Development Studies, we have the largest and most comprehensive development library in Europe. We are working hard and quickly to make it a global information service, fully interactive and responsive in real time to schools, researchers and policy makers throughout the world and principally in developing countries. We need to do this in Latin America and I would like to suggest that IDS and the 600 libraries and documentation centres of BIREME begin an immediate conversation on how we can join forces on this.

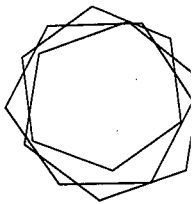


The point, then, is not whether development organisations should or should not embrace the new technologies. It is that the technologies can produce benefits only if they are accompanied by a wide and diversified range of social innovations. The forces that I have referred to in this talk - the forces of globalisations and technological change - are powerful and pervasive. They bring with them new promise and grave risk. The eve of the third millennium is a time for serious reflection and for the clearing of our heads before it is too late. It is a time which should call forth from us the same kind of innovative energies that we witnessed at the close of WW II when international development and its institutions were born. For much of humanity, a bridge to the next millennium will depend on whether those energies are found.

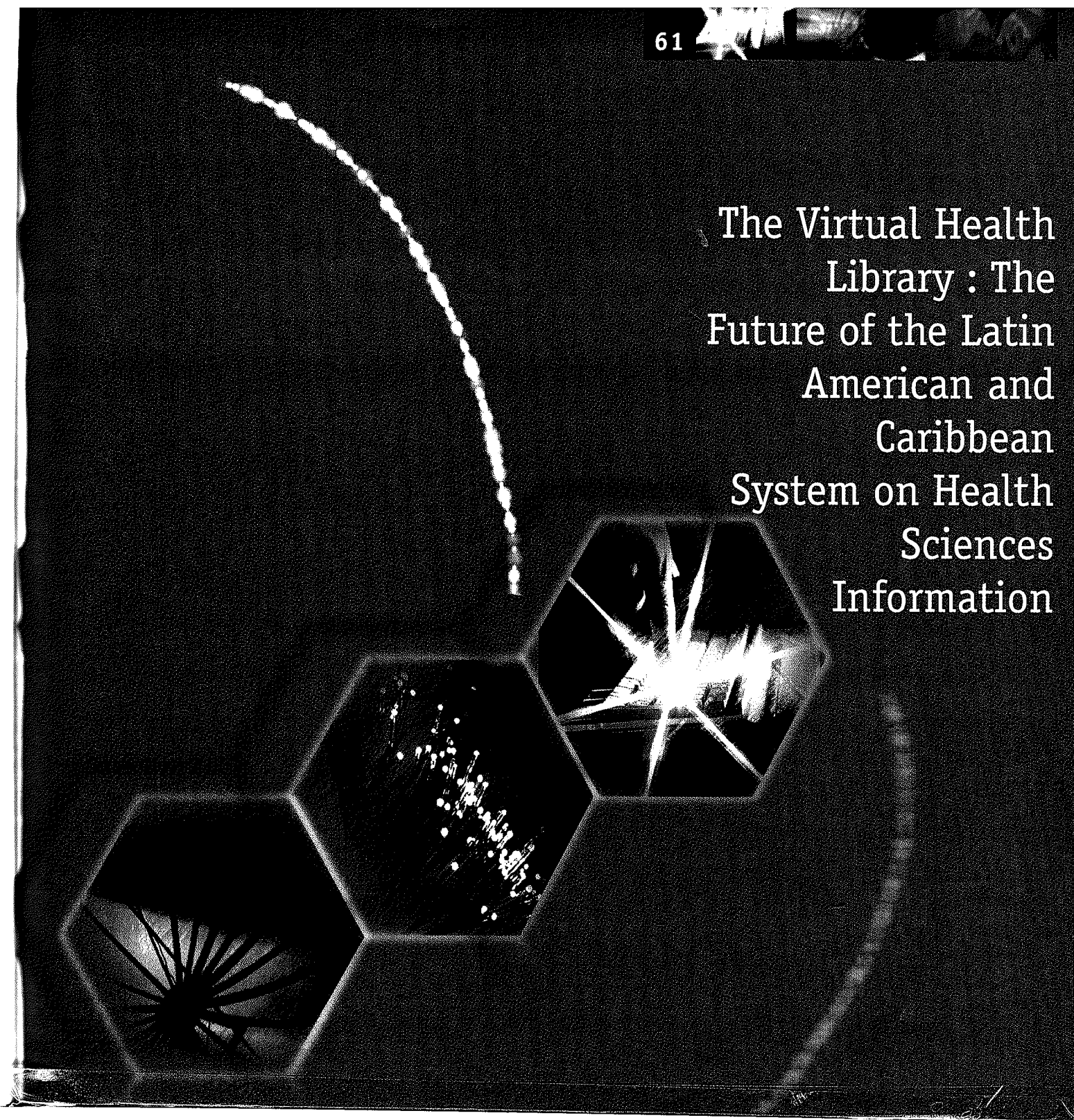
Whether international development organisations, including the one that I have the honour to head, survive and, indeed, deserve to survive should depend on our response to this challenge. We are doing a very poor job of it at the moment. I should like to close by returning to Jose Ortega y Gasset who was, I believe, one of the clearest thinkers and greatest visionaries of this rapidly fading 20th century. He wrote the following:

*"The need to create sound synthesis and systematisations of knowledge .. will call out a kind of scientific genius which hitherto has existed only as an aberration: the genius of integration. Of necessity this means specialisation, as all creative effort inevitably does; but this time (the specialising will be) in the construction of the whole."*

Jose Ortega y Gasset



The Virtual Health  
Library : The  
Future of the Latin  
American and  
Caribbean  
System on Health  
Sciences  
Information



**Juan Antonio Casas**

Director, Division of Health and Human Development,  
Pan American Health Organization - PAHO/WHO

**The Virtual Health Library: The Future of the  
Latin American and Caribbean System  
on Health Sciences Information**

Closing Conference to  
IV Pan American Congress on Health Sciences Information,  
San José, Costa Rica, March 24<sup>th</sup> - 27<sup>th</sup> 1998

*"Without ideals progress would be inconceivable.... Humankind does not reach as far as idealists would want, but it always goes beyond where it would have without their effort."*

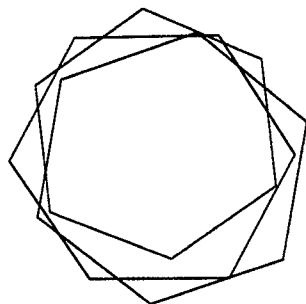
**José Ingenieros** (*The mediocre man*)

## Information and Society

The concepts **information**, **knowledge**, and **technology** are fundamental elements for establishing the framework for the discussion on the potential possibilities of the Virtual Health Library .

According to Porat, **information** refers to data that have been organized and communicated.<sup>2</sup> On the other hand, by **knowledge**, we understand the set of organized assertions about facts or ideas, presented through a reasoned judgment or an experimental result, which is transmitted to others by means of a systematic form of communication. **Technology** is the use of scientific knowledge for doing things in a specific manner that can be reproduced.<sup>3</sup>

For example, the assertion 'the speed of light =  $c = 300,000$  km/second' is a piece of information. Meanwhile,  $E = mc^2$ , although it can be communicated as an organized datum, and therefore is in itself information, also represents a complex set of reasonings about the nature of the world which implies knowledge as a mental representation of the interrelation-



<sup>1</sup> Text based on a presentation to the IV Pan-American Congress on Health Science Information, San Jose, Costa Rica, March 1998

<sup>2</sup> M. Porat, *The information economy: definitions and measurement*, 1977

<sup>3</sup> D Bell, *The coming of post-industrial society: a venture in social forecasting*, 1973

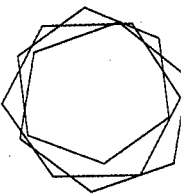
ship between mass, energy, and the speed of light. On the other hand, the design and explosion of a nuclear artifact over the city of Hiroshima, repeated after a few days in Nagasaki, and many more times to this day, is clearly a singular example of technology based on the knowledge contained in that simple and elegant Einsteinian formulation.

Another fundamental concept to understand the characteristics of scientific and technical health information in the new millennium is that of **globalization**. By this process, the decisive activities in a given scope of action (economy, media, technology, environmental management, and organized crime) function as a unit in real time in the whole planet.<sup>4</sup> It is a historically new process, different from internationalization and from the existence of a world economy, because it is only in the last decade that a technological system has been constituted (telecommunications, interactive information systems, high-speed transportation for people and goods) that can make said globalization possible. The **Informationalization of society**, based on the technological revolution that has become the new operational paradigm in the 1970s, is the basis of the economic globalization.

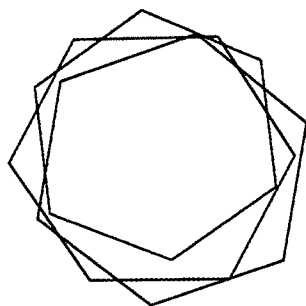
According to Castells, the **development modes** are the technological forms by which work is applied to matter in order to generate the product, thus, determining in the final analysis the level and quality of the economic surplus<sup>5</sup>. Each development mode is defined by the fundamental element in promoting the process productivity, that is, the technological produc-

<sup>4</sup> Castells, M. Hacia el Estado Red: Globalización económica e instituciones políticas en la era de la información, Sociedad y Reforma del Estado, Sao Paulo, 1998

<sup>5</sup> Castells, The rise of the network society, p.16.



tivity factor. In the case of the *agrarian mode* of development, these factors are labor and natural resources, especially the land. In the *industrial mode* of development, production and decentralized distribution of energy make up these factors. In the emerging *informational mode* of development *the source of productivity lies in the technology for generating knowledge, data processing and communication of symbols*. Knowledge and information are critical elements in all the development modes, since every productive process requires some level of knowledge and information processing. However, the specificity of the informational mode consists in that the principal source of productivity is the action of knowledge on knowledge itself. In other words, information processing basically addresses the improvement of information processing technology as a productivity source, thus, generating a virtuous circle of interaction between knowledge as a source of technology, and the application of this technology to improve knowledge generation and information processing. Each development mode is based on a performance principle that links and organizes the technological processes; in the case of industrialism, this principle is economic growth, that is, maximization of output. In informationalism, this principle is technological development, that is, it is oriented toward the accumulation of knowledge and higher levels of complexity in information processing.



According to Freeman,

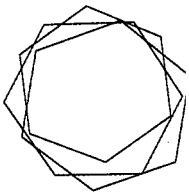
*"The contemporary change of paradigm may be seen as a shift from a technology based primarily on cheap inputs of energy to one predominantly based on **cheap inputs of information derived from advances in microelectronics and telecommunications technology.**"*<sup>6</sup>

This new informational technologic paradigm has in turn certain key characteristics that are crucial for understanding the potential of scientific and technical information networks in general, and particularly in health:

1. The raw material is the information itself since the technologies act on the information, not just the information on the technology.
2. Its effects permeate the totality of individual and collective existence. Since information is an integral part of every human activity, all aspects of individual and collective existence are affected by the new technological means.
3. Its logic and morphology is that of the network, since this is the structural configuration that best adapts to the growing complexity of the interactions and the unpredictable patterns that arise from these. On the other hand, the network configuration is feasible only through the development and application of the new informational technologies.

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<sup>6</sup> Freeman, Christopher, Technical change and economic theory, London, Pinter, 1988, p.10.

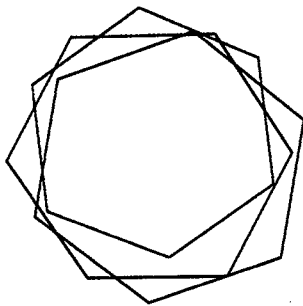




4. It is flexible: the processes, organizations and even institutions are reversible and can be reconfigured, through the reorganization of its components. This capacity to be reconfigured is a decisive feature in a society characterized by constant change and organizational fluidity.
5. Finally, another characteristic of this technological revolution is the convergence of the specific technologies in highly integrated systems, in which the previous technological trajectories become indistinguishable: microelectronics, telecommunications, information science, and even biotechnology articulate themselves increasingly in unique and comprehensive processes of information processing.

Finally, as advised by Castells, the predominant mode of development at every given time shapes all social behavior, disseminating its forms among the set of relations and social structures, penetrating and modifying the exercise of power and of experience. In the case of the new informational mode, this interrelationship reaches even deeper:

*"Because informationalism is based on the technology of knowledge and information, there is a specially close link between culture and productive forces, between spirit and matter in the informational mode of development. It follows that we should expect the emergence of historically new forms of social interaction, social control and social change.....**For the first time in history, the human mind is a direct productive force, not just a decisive element of the production system.**"*<sup>7</sup>

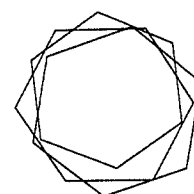


<sup>7</sup> Castells, The Rise of..., P. 18

## Scientific and Technical Information in Health (STIH) and the role of the Pan American Health Organization

The vocation to be an instrument for the dissemination of scientific and technical health information has been a mandate from the Pan American Health Organization from its inception. In the Pan American Sanitary Code, signed by the governments of the Hemisphere in 1924 it was stated that:

*(The Pan American Sanitary Bureau it will be) "...the general center of collection and distribution of sanitary reports for the countries of Americas.... and should ....provide the health authorities of the Signatory Governments, by means of its publications or otherwise adequate means, all the available reports related to the true state of communicable diseases in man, the progress achieved in the control or extermination of the same, the new methods utilized in order to combat disease, morbidity and mortality statistics, the organization and management of public health, the progress carried out in any of the branches of preventive medicine and other reports related to sanitation and public health."*

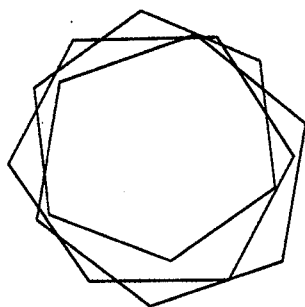


At present, the Organization manages two types of health information in carrying out its task of technical cooperation in health with the member countries: the information on *health conditions* and the *scientific and technical information in health* (STIH) of importance for the countries. In compliance with its mission, the first Bulletin of the Pan American Sani-

tary Bureau, the oldest continuously published public health journal in the Americas, was issued in 1926. In addition the Organization periodically produces numerous publications and reports on the health conditions of the countries of the Americas.

This task of "collecting and disseminating" sanitary publications of the Region was strengthened since 1967 when, through agreement between the Government of Brazil and PAHO, the Regional Library of Medicine (BIREME) was created. In 1982, it became the Latin American and Caribbean Center on Health Sciences Information. The mission of BIREME consists in being the Specialized Center of the Pan American Health Organization responsible for:

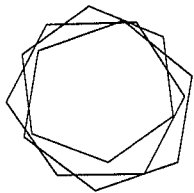
- The dissemination of *STIH* among the health workers of the Region
- The processing of public health and medical literature produced in the countries of the Region
- The articulation of the regional system with other large systems of STIH
- The coordination of the national networks and regional network of STIH that constitute the **Latin American and Caribbean System on Health Sciences Information.**



## Toward the Virtual Health Library (VHL)

In BIREME's first period action focused on the operation of the regional medical library with a view to responding primarily to the needs for access to the scientific literature of the medical libraries of the Region. Starting in 1977, the action of BIREME was oriented toward the creation and development of the network of libraries in the Region in search of the rationalization of resources and the shared use of its collections, and the bibliographic indexing of Latin American journals under the publication of the Latin American Index Medicus. In the last ten years BIREME has led the creation and development of the Latin American and Caribbean System on Health Sciences Information, the creation and dissemination of the LILACS methodology for the decentralized treatment of scientific literature, the creation of the Descriptors in Health Sciences (DeCS) in three languages, the launching of LILACS in CD-ROM and the promotion of the formation and development of scientific and technical information systems specialized in several priority public health areas in the Region. In the decade of the 1990s BIREME connected with the Internet and organized four Regional Congresses in Information in Health Sciences with the massive participation of professionals of health information of all the Hemisphere and of Europe, which has contributed to an extraordinary exchange of information and experiences.

At present, the countries of the Region, immersed in the process of paradigmatic change described in the previous section, require a new type of

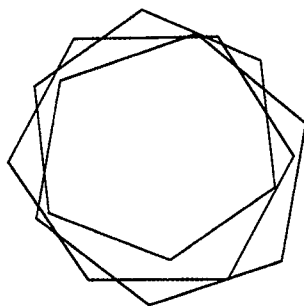


technical cooperation that could lead to the creation and operation of decentralized sources of information through the Internet, broader in their scope and with multimedia support, with added value to serve needs of specific groups of users, with less mediation and through interfaces that facilitate the direct interaction of the users with the sources of information.

In this new paradigm, the strategy of dissemination of STIH in the Region should be based on the following principles:

- To be constructed on already existing structures
- Aimed at filling the needs of all the health workers, not only of academicians or `investigators`
- Constructed on cooperative networks
- Decentralized with universal scope
- Compatible with the systems already existing in the Region
- Accessible by all the possible and necessary means, according to the context of every user and every country
- With useful information for the user.<sup>8</sup>....

The recent external evaluation of BIREME carried out in 1997 recommended ratifying the key role of BIREME and of the Latin American and Caribbean System for the dissemination of STIH in the Region and strengthening



<sup>8</sup> The definition of **Health Information Usefulness** is given by the following formula:

$$U = R \times V / D, \text{ where}$$

*U* = Usefulness of the Information

*R* = Relevance (as measured by the frequency in which the user confronts the problem or topic)

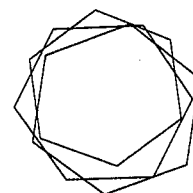
*V* = Validity (the probability of accuracy of the information)

*D* = Difficulty measured in time and effort required to find the information

the regional network through the increased participation of the national systems in its development. In addition it was proposed to reorient the task of BIREME toward technical cooperation with the national networks and the regional network, proposing as the regional goal the construction of the *Virtual Health Library (VHL)*.

The essential concept of the VHL is based on the new informational technological paradigm, with the decentralized production and management of textual and multimedia health science information sources, connected in networks with direct and universal access, without geographical nor time limitations, as a distributed base of scientific and technical health information which is registered, organized, and stored in electronic format in the countries of the Region, being universally accessible and compatible with other international information bases.

The Latin American and Caribbean System on Health Sciences Information and BIREME face daunting immediate tasks in order to convert this futuristic proposal into a reality. Among them it is to strengthen the technical cooperation function in support of the development of the Network and of the VHL, to coordinate the cooperative production of information databases and services, the research and development of information technologies, and the mobilization of human, institutional, and financial resources for the development and support of the proposal. In this regard, at the recent *Summit II of the Americas*, held in Santiago, Chile, the leaders of the countries of the Region established the greatest priority in health for initiatives such as the VHL upon declaring:



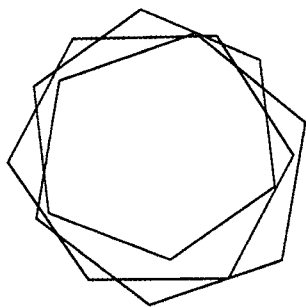
*"The Governments will strengthen and improve the national and regional networks of health information....will develop, implement and evaluate, according to needs, health information systems and technologies including telecommunications, support for epidemiological surveillance, the operation and administration of health programs and services, health education and health promotion, telemedicine, computer networks and investment in new health technologies."*

## Conclusion

According to Kranzberg, the relation between technology, and society is expressed by **Kranzberg's First Law** :

*"Technology is neither good nor bad, nor neutral."<sup>9</sup>*

This aphorism is an expression of the ambiguous strength with which the new technological paradigm of development will insert itself in the total range of our social practice. Nevertheless, however unremitting, it is also a process that can be conducted and managed by conscious social will, and as such, it corresponds to each of us to exercise, as individuals as well as collectively, our participation in the development of the new model.



For those of us who work in the field of health and the human development in Latin America and the Caribbean, the construction of the Virtual

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<sup>9</sup> Kranzberg, The Information age: evolution or revolution?, in Bruce R. Guile (ed), Information Technologies and Social Transformation, Washington D.C., National Academy of Engineering, 1985.

Health Library constitutes a conscious and necessary social action so that the health workers and the people of the Region can benefit from the new opportunities that this new informacional world can offer us. The step into a new millennium and a new model of social interaction is a challenge from which we cannot retreat. Upon assuming the commitment to make the Virtual Health Library a reality, the Pan American Health Organization and its member countries have displayed a visionary vocation similar to that which inspired the inception of the Organization nearly a century ago. By facing the challenge of adapting the new informational technologies to serve the needs and demands of the people of the Americas, the countries of the Region have commenced a new century of sanitary Pan Americanism, and have renewed their commitment for human development based on the value of the health as an irreplaceable element of a more equitable and just America, with Health for All and With All.

