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SPEECH BY MR S RAJARATNAM, SENIOR MINISTER (PRIME MINISTER'S OFFICE) AT THE 15TH ANNIVERSARY DINNER AND DANCE OF THE INSTITUTE OF PUBLIC RELATIONS OF SINGAPORE AT HOTEL MERIDIEN ON SATURDAY, 15 MARCH 1986 AT 8.00 PM

There is one chapter in the Economic Committee's report which has gone practically unnoticed. Apart from a cursory and somewhat dismissive reference to it in one newspaper, the mass media ignored it completely though it is a matter which should have been of particular interest to them. Not one speaker in the four-day Parliamentary debate on the President's address made any reference to this particular chapter - Chapter 17. Singapore businessmen, many of whom appear to be going about in deep mourning over the presumed passing away of prosperity, failed to notice the silver lining in the economic dark cloud Chapter 17 highlighted.

So my address this evening is an attempt to rescue Chapter 17 from its undeserved obscurity. The chapter in question is entitled "Information Technology" or, as the Committee refers to it with permissible familiarity, "IT". The summary headings that prefaces the chapter should, one would have thought, alerted moneytheistic Singaporeans that they were within sight of a potential gold mine. There are such headings as "Importance of IT", "IT Culture", "IT Industry" and "IT Strategy".

This is clearly money talk of a high order and a few extracts from the report would bear this out. For example: "Present trends indicate that IT will become a key technology in improving business efficiency and labour

productivity and generating new business."; "The total revenue of IT industry worldwide in 1984 was estimated to be US\$530 billion ... It has been estimated that by 1990, IT will have direct impact on the production of 30 per cent of world GDP ... IT should itself be a growth industry."

I believe this chapter was ignored because the average Singaporean, lacking what the Prime Minister has frequently referred to as the "helicopter vision" was so blinded by the dust and din of immediate concerns that he could not rise above them to see the great prospects that lay ahead.

So I propose tonight to whet the appetite and perhaps the imagination of moneytheistic Singaporeans by elaborating a little more on the dollars and cents dimensions of IT.

It was in the United States that an information industry proper had its beginnings and where it has now reached the dimensions of a major global economy. As far back as 1967, in a study undertaken by Dr Marc Porat, on behalf of the US Department of Commerce, he identified some 440 information occupations in some 200 industries which contributed significantly to American GNP. He estimated that in 1967 the information economy accounted for 45 per cent of American GNP. In the 19 years since then it has increased manifold.

I must add here that Dr Porat defined information economy to include far more than just newspapers, radio and TV. Unlike industrial economy whose wealth consists of real goods with real price tags, information economy is wealth creation not only by storing and distributing data but also by the spreading of knowledge, spiritual and moral values and, the rarest of all commodities, of wisdom.

Since 1967 the information economy has expanded phenomenally not only within the United States but also globally. Another economist in the US Department of Commerce did a study of the factors that contributed to US economic growth between 1948-1973 and concluded that about two-thirds of economic growth came about because of the increased size of a well-educated work force and consequently the availability of a larger pool of information workers.

A Massachusetts Institute of Technology (MIT) economist, Dr David Birch, in another study, computed that of the 20 million new jobs created in the US between 1970-1978 only five per cent were in manufacturing, 11 per cent in goods producing sector and the remaining 84 per cent in the information economy. Considerably more than half American workers today are information workers.

Just to give you a flavour of the kind of money being made in the information sector of US economy here are some random figures. For example a relatively minor branch of the information industry is the on-line information business. It gives subscribers direct access to any kind of information or direct them where to find it.

This service is today a US\$1.5 billion business and growing rapidly.

The American Telephone and Telegraph Company made a profit of US\$48 billion in 1982 - far surpassing the GNP of many nations. The world market for telecommunications services is expected to double by 1990.

Other enterprises like IBM, ITT, Xerox and RCA are veritable gold mines. The total revenue of IT industry worldwide was estimated at US\$530 billion in 1984. By the early 1990s it will exceed US\$1,000 billion and will be among the largest industries of the next decade.

The information economy embraces many other services, some old, some new and others waiting in the wings to make their appearance. What we are witnessing today is not the mere development of an information technology but of an information revolution presaging the emergence of an Information Society. The political implications of such a society are far reaching.

I can only touch briefly on the political, social, cultural and moral challenges this new society will pose for mankind. It will supercede, even if it does not totally obliterate the political, social, cultural and economic institutions of an industrial society as the latter did those of an earlier agricultural, feudal society. I believe, for example, that a full fledged information society will alter current political theories and practices - whether of democracy, autocracy, plutocracy, communism or facism - as drastically as feudal agricultural society was politically subverted by industrial society.

However this important subject is a matter for fuller exploration some other time, in some other place, by some other speaker.

All I will do tonight is to convey to you as graphically and convincingly as I can that we are indeed caught up in a revolutionary change, far different in scope and intensity than all earlier economic revolutions. The transition from primitive, to tribal, to feudal agricultural and finally to an industrial society was spread over some 36,000 years - because that is the life span of homo sapiens on this planet.

But the information revolution has burst upon us with unprecedented lightning speed.

An expert on communications history has illustrated this graphically by compressing homo sapiens' 36,000-year history into a 24-hour cycle starting at 12 am. Apart from the advent of speech nothing very much happened in the communications field until the appearance of cave paintings about 8 am. Then nothing happened for the rest of the day until about 8 pm that evening when someone invented writing. These were largely signs and scrawls (some of them as yet undeciphered) picture hieroglyphics, cuneiforms in baked clay and others that looked like the tentative experiments of an early Mr Pitman.

Then between nine and 10 the same night the alphabet proper was invented.

Then about five minutes before midnight printing appeared.

After that information technology really exploded. Telegraph, telephone, cinema, radio, sound motion picture, the prototype electronic computer, color TV, the Xerox machine and other communications technologies appeared at accelerating speed. Sputnik was launched a 100 seconds before mid-night. The first commercial satellite 92 seconds before midnight and then in quick succession, with shorter and shorter intervals, microelectronic circuitry, video recording and portable computers and much more at split second intervals - sometimes simultaneously.

The explosion is still going on and at speeds to be reckoned in nanoseconds.

So the Information Revolution and the Information Society to which it is playing mid-wife is no science fiction fantasy. It is real and it is here to stay. It is unfolding before our very eyes and we had better come to terms with it politically, economically and

intellectually. Those nations and peoples who cannot make the Great Leap Forward into this new society would be inconsequential and be abandoned as in earlier and more leisurely revolutions were those once thriving nations and civilisation who shut their doors, intellectually and psychologically, to the advancing industrial revolution.

That is why my reaction to the current economic crisis is somewhat different from that of the breast beaters and the doomsday men. This is not to say that I am indifferent to their pain and distress. I am. What I am saying is that wailing and complaining is no remedy for the crisis. If it were I would straightaway organise a Wailing and Complaining Salvation Ministry.

One lesson that I have learnt from my study of the rise and fall of nations is this. In a crisis the weak spend their time wailing and nursing both serious and trivial pains. Others become scavengers feeding on people's misery and discontent in the belief that that is the road to salvation.

But the strong wipe away their tears and get down to the grim business of wresting victory out of adversity.

It is to such strong men and women that my address is directed.

Can we emerge victorious from the present crisis? Yes, we can if we are prepared to pay the price of victory. It is a good bargain because the rewards will be immeasurably greater than the price demanded.

First we must understand the nature of the economic crisis. To achieve that we must stand above the dust and din of battle and survey the terrain below. If we do that we will see that the crisis springs from the efforts of a senile industrial society to resist the advance of the new and vigorous information society.

This is not just rhetoric. The economy that has been hardest hit by the recession and where unemployment and distress has been severe is the declining industrial economy and its dependents.

On the other hand information economy is expanding and garnering satisfactory profits even as the recession goes on. It is the sector which is attracting substantial new investments and where employment prospects are growing.

The crisis presages not the end of the world but the ending of an old economy even as a new one comes to life.

True the old economy will not disappear altogether, no more than did an agricultural economy after the triumph of industrial economy.

What I want to stress is that the industrial sector has far less to offer Singapore than the emerging information economy. For one thing the size of Singapore, its small domestic market, the lack of natural resources and protectionism (it's in the industrial sector this device is principally resorted to) can at best offer Singapore a very modest industrial future.

On the other hand an information economy which embraces a wide range of economic activities from telecommunications, to mass media operations, professional services, consultancy, banking, advertising, public relations, education at all levels and much more is an ideal economy for Singapore. With minor exceptions information operations take very little space. They consume very little energy relative to the profits they yield and offers scope for the setting up of small enterprises.

Most important of all its operations are dependent on brain resources (which are inexhaustible) than on natural resources.

Also information products are less subjected to tariff barriers than industrial products in a competitive world.

The infrastructure and other prerequisites for an information economy are already here because for well over a century and a half Singapore has thrived by rendering service - which is what an information economy basically is. True this infrastructure is pretty underdeveloped except for communications such as aviation, shipping and telecommunications which are all trans-national. A major characteristic of the information economy is its global dimension.

Let me hasten to add that we should enter this new global economy with a realistic appreciation of our due position in the hierarchy - which, may I suggest with prudent modesty, should be a few centimetres above the middle. We can operate as a regional middleman in the new economy as we did under the old dispensation.

I will content myself with listing some existing operations in Singapore which, with intelligent restructuring, can profitably be fitted into the information economy.

Remember the principal and saleable product in an information economy is data, knowledge, judgement and wisdom whatever the particular field. The gathering, the storing, retrieving and distribution of information is what this economy is all about. It is today a profitable and worldwide operation. Unlike communication of information by land, sea or air, the new information technology transmits



information including pictures 24 hours a day to any part of the world at the speed of light. In a way we can talk of the planet being enveloped today by an info-sphere. We Singaporeans are in an advantageous position to play the role of a regional middleman because of our proficiency in English. The gathering and distribution of information in the new economy is principally in English. The other languages, like Chinese, Malay and Tamil are valuable supplements to aid our role as middleman.

For example, your profession, public relations, can, with judicious reorganisation, operate profitably as a regional component of a global information economy.

Professional services ranging from that of medical specialists to specialists in other branches of learning who can provide information and skills should find new economic scope.

The same goes for banking and stock broking though in the latter case the exercise of dubious manipulative skills in this wayang kulit profession is something which should be sternly discouraged if we are to strengthen our role as regional middlemen.

So if we sat down and fully explored the terrain we will discover that Singapore is better equipped to prosper in an information economy than in an industrial economy.

However being equipped is one thing. Being able to use the equipment effectively to meet the requirements of an information economy is another matter altogether.

The equipment I am referring to is the brain. We all have it - more or less. Those who have more of it can meet the requirements with greater ease. Those who have less of it will have to work harder.

The only people who may not be able to find a comfortable place in an information economy will be those who rely solely on brawn power.

In talking about brawn power I am not equating it with manual skills because manual skills are also fuelled by brain power and in some cases by brain power of a very high order.

I am really referring to unskilled workers - whether manual or mental. For them life in an information economy will be bleak and unrewarding.

So my advice to young Singaporeans and their parents is this: Acquire a skill within the limits of your brain power and you will have a future in the new economy. Those who are today unemployed should use this enforced leisure to acquire skills required in an information economy.

So my advice in the current economic crisis is briefly this: If you spend the next few years trying to shore up a disintegrating industrial economy, you are in for a pretty rough time.

But if you spend the next few years readjusting and relearning to fit in with the requirements of the new economy you will once again bask in the sunshine of another long prosperity.

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