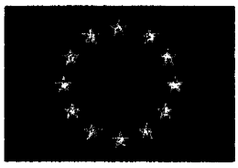
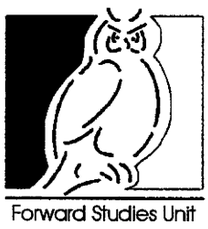


EUROPEAN COMMISSION

FORWARD STUDIES UNIT

The social impact of electronic money: A challenge to the European Union?

Bernard LIETAER



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The social impact of electronic money
A challenge to the European Union?

A Repport to the European Commission's Forward Studies Unit, Brussels,
And Instituto de Prospectiva Technologica, Sevilla

Bernard LIETAER

Working Paper, February, 1999

The rising importance of electronic money: a challenge to the European Union?

Executive Summary

We are in the middle of the biggest economic mutation since the Industrial Revolution. The main difference between the birth of the cyber-economy and the Industrial one is the speed in the expansion to global scale of the process. One pioneering force in it has been electronic money, and the development of electronic commerce can be seen as simply the rest of the economy joining in the virtual space where money has been functioning already for the past two or three decades.

The social implications of this revolution, and particularly the employment ones, are dramatic. The introduction of the Euro in this context may very well further exacerbate this problem. The Euro will indeed reduce the options available to European governments for addressing the unemployment problems. Not only will there be by definition less leeway for each government to adapt monetary policy to its national employment situation, but it is predictable that in order to establish the credibility of the new currency in both domestic and international markets the monetary policy for the Euro will have to be tight particularly during the first years of its introduction. Finally, the constraints put by the Maastricht Treaty on each country's budgetary deficit and borrowing capacity further close off the traditional solutions to an unemployment crisis. In short, the traditional solutions to unemployment reduction are now less available..

There is, however, also a silver lining to the Information Revolution. It has made possible social innovations in the use of non-traditional electronic currencies that have empowered grassroots organizations to address themselves rising unemployment problems on a local level. Successful demonstrations of such systems date back to the 1980's primarily in Canada, the UK, New Zealand and Australia. . While these experiments have remained mostly below the radar screen of official policy, they have already spontaneously sprouted up at the grassroots level in practically every European country. More important still: they have proven effective in addressing the unemployment problems at the local level, without creating inflationary pressures on the national currency or the need for increased governmental spending.

The policy recommendations flowing out of the above are the following three:

Europeanize, rather than attempt at blocking or slowing down **the new cyber-economy**. In any case, resisting it would be as useless and ultimately as counterproductive as would have been blocking the development of railroads or industrial manufacturing at the beginning of the Industrial Revolution. Within this context, European standards for the electronic Euro should be compatible with - but not necessarily identical to - the recent global consensus SET and smartcard standards. Consumer protection, and specifically privacy protection and electronic copyright are two important domains where Europe could play a pioneering role.

While introducing the Euro as planned, reduce its potentially exacerbating impact on unemployment by developing a **European Social Policy for the Information Age** which specifically uses the new tools which are becoming available in the cyber-economy

One key ingredient for such a social policy is to **encourage the use of well-designed complementary currencies in parallel with the introduction of the new Euro**. Such a strategy, while non-traditional, would make it possible to mitigate unemployment without creating inflationary pressures on the Euro or requiring additional governmental spending. Such encouragement could be achieved mostly by reducing regulatory constraints on such local complementary currency systems. Three different levels of support - passive tolerance, mildly and strongly supportive - are explored.

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1. On-Going Trends in Electronic Payment Systems

"Money has evolved from shells to green paper to the artful arrangement of binary digits" Dee Hock , Founder of the VISA credit card alliance, 1968

Banking is going to become "a little bit of application code in a smart network" John Reed, CEO Citicorp, September 1996

Glyn Davies after a survey of 5,000 years in his "History of Money" concludes that there have only been two major technological breakthroughs over this time period: the first was the invention of paper money (first introduced in China around 820 AD, and in Europe at the end of the Middle Ages), and today's electronic money. The first breakthrough - paper money - enabled the change from commodity-money (e.g. salt, gold, silver, etc.) to "modern" credit-money, which ultimately shifted the power of money creation from sovereigns to banks. It is definitely too early to fully understand all the implications of electronic money, but this Report will identify at least some of the main directions of change.

1.1. The Information Revolution

In less than two decades, it has become a cliché that what Daniel Bell coined the post-Industrial Society will be an Information or Knowledge Age. In the early 1950's IBM's first Chairman, Thomas Watson, predicted a world market for "maybe five computers". By 1975, about 50,000 were operating, and in 1997 more than 140 million. Add to that the 170 million computers-on-a-card currently in use worldwide. And that does not take into account the "invisible computers" built into routine appliances: a typical car today contains more computer-processing power than the first lunar landing craft in 1969.

The reason for this explosive proliferation is simple: never has the world seen as vertiginous a drop in the price of an industrial product. We have gotten used to the idea that today's $2,000 laptop packs more power than the $10 million mainframe of 20 years ago. If car costs and efficiency had followed the same trend, you would now drive in a Rolls Royce costing less than one Ecu from Lisbon to Athens and return via Oslo on a milliliter of gasoline.

When steampower was introduced it was not all that much cheaper than water power, and it took from 1790 to 1850 to halve its real price. Likewise, it took between 1890 and 1930 for the price of electricity to drop by just over half. Contrast that with the cost of computing power which halves every 18 months ["Moore's law" - named after the President of Intel - actually describes an even more impressive rate: every 18 months the price drops by half and computational power doubles.]

Just one facet of it - the Internet - is the topic of an estimated 12,000 articles per month in the US press alone. This of course does not include what is written on the Internet about the Internet itself. Never before has any technological shift been heralded by such an avalanche. George Gilder calls it "the biggest technological juggernaut that ever rolled." Bill Gates claims that "the

benefits and problems arising from the Internet Revolution will be much greater than those brought about by the PC revolution." Again gigantic drops in communication costs are the key engine driving the change.

Whole libraries are and will be written about the jee-whiz technologies involved. Even if we focus only on money on the Net, the topics of new payment systems and the implications of cryptography for cyber-money definitely warrant an entire book. While all this hype warrants some suspicion, the Information Revolution still could deserve its name.

After all, we are still only at the first opening moves in the new global Information Age chess game, and nobody really knows how the game will unfold. Even in the US, Personal Computers are just now reaching the faster take-off phase in the rate of adoption, as the following graph shows (Figure 1.1).

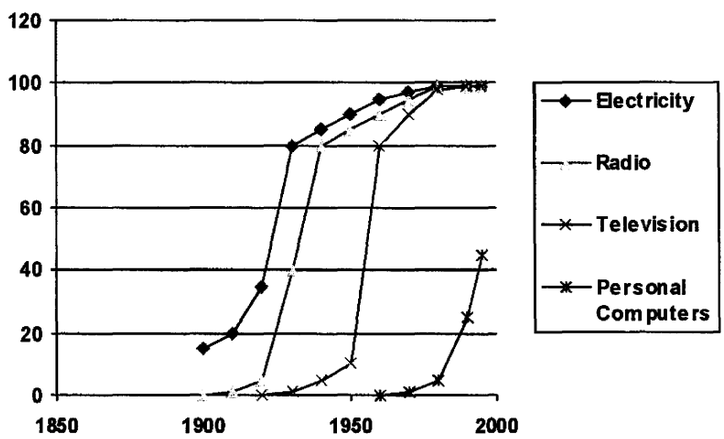


Figure 1.1 Curve of Adoption of New Technologies in the US (Source: IBM)

All indications are that Europe is engaged in an identical process, only with a few years of delay for the adoption of the Personal Computer.

1.2. Electronic Commerce

Among the oldest known texts are monetary transactions in Uruk around 3,200 BC: "writing was invented in Mesopotamia as a method of book-keeping". The only formal writing known in the pre-Colombian Inca Empire - the quipus - similarly is an accounting system.

During the second half of the 20th century, money became again the first domain to have entered the new technological world of the Information Age. Most of it has been computerized for decades. The first commercial business applications of the early days of computing were almost invariably accounting. For the past two decades all large money operations worldwide are completely electronic, and the first truly integrated global market is the one where traditional national currencies are traded around the clock. Even within most countries well over 95% of all currency is today living and moving in cyberspace. Most of your own money is likely to reside in a bank or brokerage account, i.e. in a computer somewhere. In short, money has been living in cyberspace for decades, and the development of the cybereconomy means simply other aspects of economic activity catching up with money in cyberspace.

1.2.1. *Distribution and Retail*

The Net has already started to alter the economics of the gigantic distribution and retail sector. In cyberspace more and more people can do comparison shopping and purchasing at wholesale prices on an unprecedented scale with no more effort than a click of a mouse. Instead of a retail economy with physical processes, we are already well on our way towards a wholesale economy with digital processes. In such a switch almost everything changes, to begin with prices.

1.2.1.1. Cheaper than Wholesale?

The following example provides a flavor of things to come. you can buy the Virtual Vegas Turbo Blackjack computer game in a store at $29.95 or download it from the Net for $2.95 (one tenth of its "normal" retail price). The CEO of Virtual Vegas, David Herschman, has figured out that - even with this drastic price reduction for the Net - he still makes more money on a Net sale than on a retail sale. Each $29.95 CD-ROM version of the game has to pay for the retailers' and distributors' share; for the production, packaging and shipping costs; for sales commissions and unpaid accounts. After all this, the income to Virtual Vegas is $4.50 out of which Herschman has to pay his own infrastructure to manage distribution middlemen and production steps. In contrast, each $2.95 copy of the game paid for with CyberCoin and delivered over the Net costs him only 26 cents, yielding a $2.69 profit. At the Web price, many more copies will be sold. Herschman summarizes "The profit margin on the Web is huge. We make it once and we could sell that from here to eternity".

Nor is this the end of the cost compression game: Digital Equipment Corporation is launching its Millicent payment product to compete with CyberCoin, promising to further reduce the costs of a Web transaction from 26 cents to the order of 0.1 cent (yes, one tenth of a cent!). Other companies, such as Citibank, Verifone and Microsoft are all known to work on similar products, ensuring that the transaction costs on the Internet will remain really low.

1.2.1.2. New Products?

It would be a mistake however to look at the cybereconomy simply as an unusually cost-effective new wholesale marketing outlet, or as a very special and fast growing export "country" for existing products. It promises to make possible totally different products as well. For instance, the new micro-payment technologies already offered by CyberCash or its competitor Amsterdam based Digicash, make it economically interesting to "unpack" products that we take for granted as a unit. One could charge a very small fee just for what the consumer specifically needs. Instead of buying a whole cook-book, a magazine, a CD or even a newspaper you could order for a few cents the exact sections, articles or songs you really want.

1.2.1.3. Business Opportunities

The cybereconomy has all the makings of the fastest growing economy in the world. In 1996, 71 million people used the Internet for e-mail. However, what really matters here are the 35 million "Netizens" who use the Net to surf, of which 20 million made at least one purchase on the Net for an estimated total value of $35.6 billion. Most items purchased are predictable: software, computer products, books and CD's. But this is clearly only the beginning: Chrysler's

1996 annual report reveals that 1.5% of its car sales occurred via the Net, and forecasts this to rise to 25% by the year 2000. In 1997, the sales volume of only two of the specialized on-line car sales companies (Car-By-Tel and AutoAdvantage) totaled $5 billion. Price Waterhouse estimates that by the year 2000, the number of Netizens will have soared to 168 million, and that they will buy some $175-200 billion of goods and services on the Net. No wonder that everybody is interested in creating cyber-payment services.

For some businesses, the Net has already become their biggest single distribution outlet. For example, in 1996 Best Western's website generated 48,000 hotel nights for a value of $3.5 million. The website for Dell Computers registers a daily sales volume of over $1 million in the first quarter of 1997; while Cisco's website cashes in on over $2.3 million per day. Such a website is a distributor's dream: a global retail outlet without real-estate costs, no employees, not even a light bulb is needed; the customers filling in their own orders and pre-payment slips; and orders rolling in 24 hours a day, 365 days per year. In addition, it enables those corporations to skip all intermediaries and eliminate the cost of keeping inventories of finished products: they manufacture and ship directly to the specifications of the order placed on the Net.

According to Forrester Research, 70% of the Fortune 1000 US corporations are in business on the Net in 1998. However, some of the biggest Internet players may turn out to be companies that you never heard of, which appear suddenly as giant whales breaching out of the deep. We will look at one such case study in detail just to illustrate the new business dynamic that the cyber-economy makes possible. It also makes clear what some of the implications are for Europe.

1.2.2. The Case of the Stealth Mega-Store

Quiz question: Name the largest Net merchandiser in 1997 ($1.5 billion in sales), a corporation that makes available over 1 million different products and services on-line (as a basis of comparison, a typical supermarket carries about 50,000 items), and which has detailed psychographic and transaction data about over 100 million consumers (covering about half of US households). An extra hint: the same corporation is also the world's largest franchiser in both hotel chains and in residential real estate.

Did you guess: Cendant?

If you didn't, don't feel too bad. Even most of its customers don't know its name.

Cendant is the result of a merger between two just as little know companies: CUC (Comp-U-Card) and HFS (Hospitality Franchise Systems Inc.) which have nothing in common except understanding the power of information in the Information Age. Their history is indeed a perfect case study about how the dynamics of the Information Age can concentrate power in totally new ways.

1.2.2.1. CUC

CUC was started by Walter Forbes as a computer-based shopping service in 1976. His core idea was rock-solid and simple: instead of having manufacturers ship to wholesalers and retailers who sell to the consumer, they would simply supply the CUC database with information about their goods. CUC would present that information in a palatable way to consumers who can buy at the wholesale price plus shipping costs. When a shopper buys something the manufacturer is notified and ships directly to the customer. CUC makes its money not from the merchandise but

from membership fees (now $69 per year which its club members pay to have access to wholesale prices) and from the vast amount of transaction information accumulated.

CUC also launched a series of specialized on-line services: Travelers Advantage (a full-service travel agency); AutoAdvantage (purchase and maintenance of cars); Premier Dining (the first national discount dining program); BookStacks (on-line book purchases); MusicSpot (CD's); and Shoppers Advantage (a general merchandising on-line service which by 1993 had 50 million members buying from a database of more than 250,000 products). It also acquired successively Madison Financial Corporation (now FISI Madison, the world's largest financial marketing organization); Benefit Consultants (insurances); Entertainment Publication (publisher of discount books); Sierra-On-Line (a software firm) and a large European licensee.

Forbes also cut deals with America-On-Line, Prodigy, Compuserve, Citibank, Sears, and other similar "brandnames" to provide their on-line shopping services. So without any CUC publicity (on-line or otherwise), and all shipping being handled directly from the manufacturer, most customers have no idea that they ever dealt with CUC. Total sales volumes don't even have to be reported because they are directly credited to the manufacturers or service suppliers.

1.2.2.2. HFS

Hospitality Franchise Systems, Inc. (HFS) comes from a totally different world, except that most of its customers are just as ignorant of its existence as is the case for CUC. It was founded in the early 1990s' by Henry Silverman when he engineered the acquisition of the licenses of the hotel chains Ramada Inn and Howard Johnson for $170 million, and Days Inn for $295 million; and became a publicly owned corporation in 1992 under the HFS name. It further acquires Super 8 for another $120 million, making it the world's largest hotel franchiser. Silverman explains that few people understand the advantages of being a franchiser instead of an outright owner: the franchiser provides advertising for the brandname, runs the reservation systems, and supplies training and inspection on the franchisees. In short, it handles only the clean information aspects and is paid a hefty, predictable fee for it. It leaves all the messy and unpredictable aspects to the franchisees, such as the changes in value of the real-estate, the continuous maintenance and upgrades needed, the fluctuations of customer flows, and of course all the labor intensive components.

Silverman made also some other at-first sight unrelated acquisitions such as Century 21, ERA and Coldwell Banking in 1995, making HFS the world's largest franchiser of residential real-estate. Later he also acquired for $1.8 billion PHH corporation, itself a conglomerate of corporate relocation and financial services. But the clearest demonstration of the underlying strategy was the way the $800 million acquisition of Avis car rental was handled. Even before the deal was closed, HFS announced that it would be taking the second largest car rental company public: it would sell off to the public Avis's 174,000 vehicles, 20,000 employees and 540 car rental car locations. The only thing that HFS would keep for itself is Avis's information and reservation system which it would run for a nice predictable charge, and of course the Avis brandname for further licensing. As Wall Street has not yet a name for this strategy, I am proposing the term "information asset stripping".

As a consequence of this strategy between 1992 and 1997 HFS's total revenues multiplied by a factor of ten to $2 billion, and its net profits multiplied by twenty to $475 million. But the most valuable asset is definitely HFS's psychographic, demographic, and transaction data it has accumulated from all its activities about 100 million US consumers, covering half of all the US households.

1.2.2.3. CUC + HFS = ?

It was indeed that latter asset which made the 1995 meeting between Forbes and Silverman so productive for both parties. They entered into a partnership which would match CUC's marketing muscle with HFS's client information base.

Under the deal, CUC would market its travel, shopping, dining, and auto-clubs to the millions of guests of HFS. However, this is not done by mindless junkmail, primitive cold calling or e-mail spamming. When you call any of HFS's hotels for a reservation, after the booking is completed you will be asked whether you are interesting in hearing about a discount travel club that would ensure some significant savings during your trip. A $20 dollar free gas coupon is part of the incentive. If you say yes, you will be switched to a CUC operator to hear the special offerings which are available to you if you join the club. The net result: a 30% positive response (compared to the normal 1 or 2% conversion rate of direct marketing). If you were to fly, you may want to consider this special deal for an Avis car to drive to the hotel.

Similarly, if your company relocates using the services of PHH Corporation, Century 21 would be delighted to supply your staff with great housing conveniently located near the new location. Your employees will of course have to supply all their personal financial data necessary to obtain the mortgage from FISI Madison. But a mortgage requires a life insurance of course, for which they have to file all the relevant medical information with Benefit Consultants. When they finally buy that house via Century 21 they will receive as housewarming gift from CUC's Welcome Wagon (a service that delivers coupons for local products and merchants to new homeowners), a list of local dining opportunities available through Premier Dining; and some great offers on discount books about the area published by Entertainment Publications.

Cendant corporation was formally created from a merger between CUC and HFS via a stock swap making the whole group capitalization worth $22 billion. Even Wall Street at first did not understand the Information Age logic behind the deal so both stocks first dropped by 8%, until they recovered after analysts had been briefed about the untraditional synergies available.

The group can currently supply about 20% of a typical American household goods and services (a data base of 1 million items), and it plans by 1999 to supply 95% of all needs (about 3 million types of goods and services). In an unusual twist, Forbes and Silverman, respectively Chairman and CEO of Cendant, will switch jobs in the year 2000.

By the year 2007, according to Forbes, electronic commerce will capture 20-25% of the gigantic $2 trillion retail business in the US. Forbes explains: "[the traditional retail industry's] basic cost - bricks, mortar, real estate, people, taxes, health care - are all going up. They have inventory, we don't. Our basic costs - communications, database, hardware - are all going down. The advantages of interactive shopping are getting greater." When asked what will happen to conventional stores. He answers "Twenty to twenty five percent will just go away" and he points to the lengthening list of bankruptcies of Montgomery Ward, Woolworth's, Caldor, and Bradlees. "Or they adapt: malls are already becoming entertainment, baby-sitting sorts of places. The amount of food and fun is going up, and the amount of product is going down. They are already responding to a future that's not even here yet." He also forecasts that the concentration of power in the cybereconomy will be much higher than in the old Industrial economy. "At most ten companies will have 80% of all the on-line business. It could even be five, because scale, as materialized by price, is going to be so incredibly important." Cendant has started consolidating its different Shopping Advantage websites into a single "one-click" shopping site called netMarket. Given that the Net is global, these five to ten companies can serve the world of course, not just the US market.

Cendant now also issues its own currency as well. It is called "netMarket Cash" and you obtain it as a premium for frequent purchasing (5% of the value of a purchase is automatically credited to your netMarket Cash Account). It is redeemable against future purchases: one million products to choose from, going to three million within three years...

Is netMarket Cash a private corporate currency in the making? This question will be addressed later in the "New Money" section of this chapter.

1.2.2.4. Implications

The Cendant case is interesting because it shows how different the economics of the Information Age can be. There is nothing illegal, immoral or even politically incorrect in the way Cendant can concentrate power in ways unthinkable in the physical world. Nevertheless, the potential for abuse in a continuous accumulation of information about an individual's private life is clearly there. No police state has ever been able to reconstruct people's lifes at that level of detail

Another key implication should be obvious: the manpower needed in cyber-distribution is insignificant compared to the traditional wholesale-retail system.

1.3. Payment Systems

The main stumbling block that has been holding back a full scale Internet distribution economy has been a reliable, secure, fully electronic payment system. Until now, most payments for Internet purchases are handled outside of the Net via credit cards, a cumbersome paper-based system. Since 1997 a secure electronic payment system specifically designed for the Net can become a reality.

In the physical world a variety of payment instruments have been developed over time to meet the needs of different levels of convenience, portability, risks and costs including familiar forms such as cash, checks, debit and credit cards. For the Internet, a series of digital analogs have similarly been created. They include electronic cash, electronic checks, electronic certificates and smartcards, each of which provides again different levels of convenience, portability, security and costs

The year 1997 will go down in history as the year when two key components of these electronic analogs were for the first time standardized on an industry-wide basis. Key agreements were indeed reached over a SET (Secure Electronic Transfer) protocol, and on a smartcard software standard.

The smartcard agreement was a comparatively low-key affair reached in the final months of 1997 between all the main manufacturers of smartcards in Europe, the US and Asia What it will ultimately enable is that a program designed for one smartcard system can be loaded and operated on any other smartcard system. This "platform interoperability" will become increasingly important to enable smartcards to remain competitive in the imminent electronic payment explosion.

1.3.1. SET: a new global electronic payment standard ?

Because it involved a much wider range of participants, the SET agreement was a much more visible saga in which main players repeatedly threatened to drop out of negotiations and start their own separate alliance and standard. The initial draft version of SET specification was made available for public comment by VISA and MasterCard on February 23, 1996. A revised and improved industry-wide agreement was negotiated with Microsoft and several other software and consumer finance heavyweights over the next year. The formal consensus SET protocol version 1.0 was finally released on June 1, 1997. This release has played the role of the pistol shot that launched the settlers for a land rush in the Wild West. Microsoft released a few months later its first "Virtual Wallet" as part of its Internet Explorer 4.0. Visa, Microsoft, Intuit, VeriSign, IBM, MasterCard, Cybercash, Digicash, Netscape, Open Market Inc. and dozens of other software suppliers - all using the SET protocol - will fight it out on the Net to try to impose their brand-name before the end of the century. Given the players involved, the SET protocol is now expected to become the de facto global Internet payment standard. However, there is already talk for the need of "SET Lite" substandard which would be less complex to implement and maintain. We are definitely one significant step forward closer to a de facto Internet payment standard, but the competition to establish new brands of electronic money has really just started.

1.3.2. European Situation

Some European companies are involved in the above international standardization processes. In addition the European Union has engaged in its own efforts at standardizing. A meeting on the "Smart Euro" convened on June 25, 1997 in Brussels inventoried no less than 18 different commercial electronic purse schemes in Europe Three different Working Groups on Interoperability have been established by banks and by payment associations with overlapping memberships and different scopes. The European Committee for Banking Standards (ECBS) has produced a document identifying basic principles of interoperability, and proposing three possible models: one single purse accepted in all countries, more than one scheme on the same smartcard, and different cards served by the same terminal.

The new cyber-economy is definitely going to be global. So whatever the mechanism used for setting European standards it would be important that the results remain compatible with the global standards as identified above. Compatibility does not necessarily mean identity: for instance, it might be useful to develop European standards which further refine some of the items open to user determination in the SET protocol.

1.4. New Money

However, even all of the above is really only the beginning of the story. The real revolution of opportunities unleashed by the Information Age will start manifesting when different kinds of currency follow the same electronic path that the national currencies are now blazing. The cybersphere is indeed also the ideal new money frontier, the ideal space where money creativity will manifest.

The reason the cybersphere will accelerate money innovations has to do with some of its very unusual characteristics which contrast it with ordinary space. If big business buys up in physical space New York's Fifth Avenue, Paris' Faubourg Saint Honoré or London's City, there is

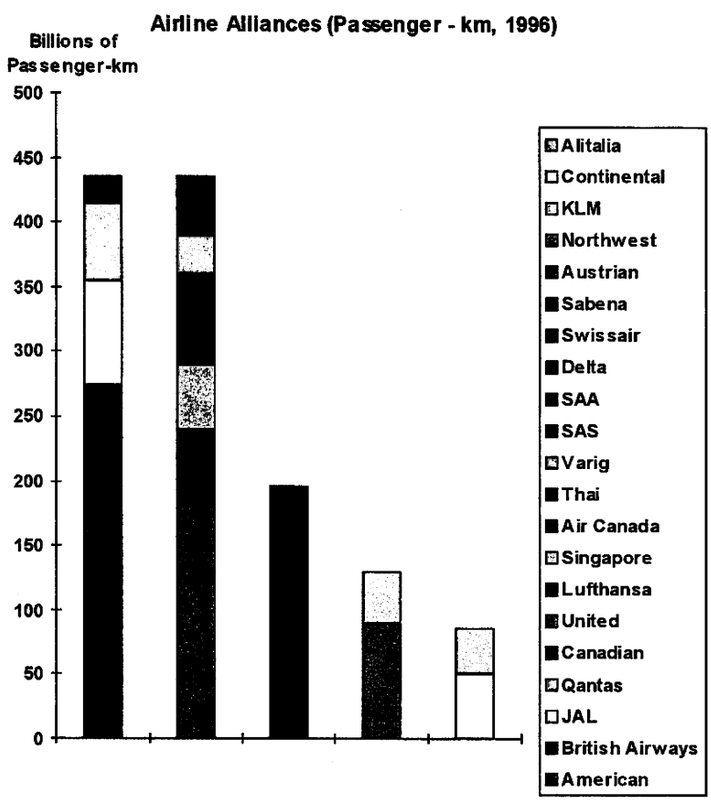
simply no room for an alternative system to exist next to it, not to speak of flourish there. In contrast, cyberspace itself is "non-rival": there is always room for another website, another approach, another viewpoint, which is just as accessible as any other site. Cyberspace as a self-organizing chaos could very well peacefully host several completely different types of complementary money systems operating in parallel.

Everybody expects the Information Age to significantly change the way we exchange goods and services and many other aspects of our economy; even bankers as John Reed agree that the banking system itself will just become "a bit of application software on an intelligent network". Why should we expect that one of the most conspicuous legacies of the Industrial Age - our national currencies - will remain impervious to change?

1.4.1. *The Precedents of Credit Cards and Frequent Flyer Miles*

Credit cards are one of today's main profit centers for the financial sector (e.g.: they represent to Citibank in the order of $2 billion, about half of its annual profits). However, they were initially issued only by oil companies to foster brand-loyalty to purchase gasoline, oil changes and the frequent repairs needed in the early American automobile industry. The first credit card issued by a non-oil company (Diners Club) dates from 1950. The banking sector got involved in a significant way only in the 1970's.

A similar process has started over the past decade in the airline industry with frequent flyer miles. Initially, frequent flyer miles were simply a marketing incentive to foster brand-loyalty among regular business travelers. Frequent flyer miles could be earned only by buying airline tickets and redeemed exclusively for tickets from the same airline. Today, one can earn frequent flyer miles by making almost any purchase, and they can be redeemed in long-distance phone calls, limousine and taxi services, hotel and resort expenses, and an increasingly wider range of goods as well.



In addition airline alliances now provide convertibility among different airlines frequent flyer services. Figure 1.2 shows the 1996 travel volume produced by the five major airline alliances in the world.

Figure 1.2 Five Major Airline Alliances

The two largest regroup American Airlines, British Airways, JAL, Qantas and Canadian on the one side; and United, Lufthansa, Singapore, Air Canada, Thai, Varig, SAS and SAA on the other.

There are also three smaller alliances (Delta, Swissair, Sabena and Austrian Airlines) ; (Northwest and KLM) and (Continental and Alitalia).

All evidence points to the fact that it is only a question of time before these frequent flyer miles become a fully fledged corporate scrip, i.e. a private currency. The credit card precedent has indeed shown how brand loyalty gimmicks can evolve into full-scale financial products. Two aspects of the Frequent Flyer case are to be highlighted:

Such specialized currencies are a direct product of information technology, they would not be economically feasible without widespread and cheap computer processing.

None of the airline alliances - and therefore none the frequent flyer corporate scrip that is issued - relate to any one national currency, but is instead of a global nature.

Both these features are likely to be found in any future corporate scrips that may emerge on the Internet as well.

Neither is frequent flyer miles the only corporate scrip in the making. We already mentioned earlier the creation by Cendant of its "netMarket" currency redeemable in one million different goods and services on the Net. Or would Cendant itself only be one of the partners in a joint venture which creates an on-line currency backed by real goods and services? As the cybereconomy takes off, we should expect specialized corporations to be set up - with a strong and very liquid balance sheet - which will issue Internet currencies. Why should a German buying a product from an Indian company on the Net be paying in Euros, Rupees or dollars?

Alan Greenspan, Chairman of the Federal Reserve board also foresees "new private currency markets in the 21st century' and has vowed not to impede their development or stifle technological innovation in the financial and payment arena.

1.4.2. The End of the Monopoly of National Currencies

A revealing sign that the official national currencies are not fulfilling all the needs of modern commerce has been the large-scale reappearance of barter in national and international exchanges. Conventional wisdom - in this case dating back to Aristotle - claims that barter is just a primitive form of trade which has no role in a developed economy. The postwar version of this practice, starting in trades with the Soviet Union or the Third World, was therefore initially attributed to the scarcity of hard currencies in these countries. However, this cannot explain the process, because barter has suddenly been growing even faster within hard currency countries. For instance, in 1992 there were already 520 barter exchanges in the US with thousands of members each. The value of barter transactions in the US and Canada totaled almost $6.5 billion in 1994, and is increasing at an annual rate of about 10% (or about three times faster than normal exchanges). The magazine "Barter News" covers the industry's development and now has 30,000 subscribers. A current estimate of the component of international trade which is handled by barter is about 25%.

Other types of non-national currencies already in the making are described in the following extract from the Washington Post.

Corporate Currencies in the Making
(extract from The Washington Post, Friday, July 10,1992)

by Michael Schrage

"In fact, one of the most intriguing financial phenomena of this decade will be the inexorable rise in the importance of 'private money' issued by companies to lock their customers into their 'economic systems'. Once upon a time, this kind of private money - or scrip - was associated with railroad towns, the armed forces and the Great Depression. Today, think of these shadow currencies as the 'scrip of the elite'. While Walt Disney, or say, American Airlines won't have its own Paul Volcker or Alan Greenspan, these companies are going to be just as careful about managing 'money supply' and 'inflation rates' as their Fed counterparts. Just as the global economy has become more integrated over the past 20 years, America's shadow economy of frequent-flier, frequent-caller and frequent-purchaser programs are also blending seamlessly.

The issue is no longer individual or frequent-purchaser programs to buy brand loyalty - it's the gradual fusion of these plans to create a new kind of consumer-credit economy. It's only a matter of time before a new generation of 'central bankers' emerges to coordinate the exchange-rate issues.

Citicorp credit card holders can 'buy' frequent-flier miles on American Airlines as well as hotel and rental car discounts. Selected American Express card holders can buy 'membership miles' on other frequent-flier programs or purchase phone time on MCI or Sprint via the Connect-Plus programs. Corporate Scrips - frequent-flier points and frequent-traveler credits - are becoming ever more convertible to one another. This is an economy that is now worth billions - and growing.

"In the customer's mind, it may well be currency", said Alfred J. Kelly Jr., vice-president of frequent-traveler marketing at American Express Travel Related Services. "There is no question that you'll see more partnerships between organizations as they try to provide additional value to customers. We're trying to create segment-specific programs that not only provide value to our customers but also instill loyalty to us and our partners."

For example, Kelly noted, if American Express customers want to have "convertibility" between Membership Miles credits and Connect-Plus, that's something Amex's 'central bank' might be prepared to arrange. All of a sudden, Amex credits begin to rival dollars as a medium of exchange to purchase both travel and communication. Private currencies are on the rise not just because companies are pushing them, but because they are what the customers want. If the ruble can be convertible, why not the American Airlines frequent-miles program?

Indeed, as sophisticated information technology continues to seep through the economy, the ability to grow and manage private currencies increases. It becomes both cheap and easy to track individual purchases and credits. "Just as people try to manage their credit cards, they will soon be managing their 'credits' to handle a variety of shadow currencies."

In summary, the new possibilities offered by today's Information technology and the logic of the cyber-economy both point to the fact that the monopoly that national currencies have enjoyed as medium of exchange is coming to an end.. The development of barter both internationally and nationally, and the emergence of new types of private scrip even before Internet has come into bloom further proves that the development of the cyber-economy will include not only new forms of money (e.g. smartcards) but also new kinds of currency (e.g.: netMarket cash, and other types of private scrip).

One important new type of non-traditional currency that becomes possible with the new technologies is particularly important from a social viewpoint: complementary currencies of which over 1,400 different communities around the world have availed themselves mostly to counteract high unemployment problems. We will explore in chapter 4 the nature and uses of such currencies, because they are among the very useful social innovations which would enable Europe to address its own unemployment problem, while living with a tight Euro monetary policy and governmental budget constraints. .

2. Chapter 2: Unemployment - A Negative Social Implication of the Information Age?

"Confusion is the word we invented to refer to an order we don't yet understand" Henry Miller

There are many important positive consequences and opportunities arising from the dawning of the Information Age in general and the cyber-economy in particular. Increased economic efficiency, reduced prices to the consumer, previously unthinkable new services and products come to mind. However, there is also a negative consequence, which particularly for Europe may turn out to be a major one: increased unemployment at the very least during the transition period of the next couple of decades.

All trends point to the fact that in the Information Age much less manpower will be required to produce the needed goods and services than was the case in the Industrial Age. Production jobs have been dropping systematically in all developed countries for decades, but most of these job losses have been replaced by new jobs in services. However we have seen in the previous chapter that distribution and other services are next in line to be dramatically "downsized" under the pressures of the cybereconomy. At the very least the Information Age will require very different skills, and the transition will leave large groups of workers with out-of-date skills under- or unemployed. At the same time, the globalization of the job markets has reduced the effectiveness of Keynesian management of national currencies to create full employment.

2.1. Today's Job Problem

Information Age Unemployment in the Making

A robot is being tested to perform hip replacement surgery.
The first novel written in its entirety by a computer program - a torrid romance rated no better or worse than the average - was published in New York in 1993.
The latest performance by the Washington Opera Company of *Don Carlos* had only the conductor, two pianists and a synthesizer in the pit.
In 1993, Sears eliminated 50,000 jobs from its merchandising division, reducing its workforce by 14%. (That same year sales went up a nice 10%. This was before the emerging trend towards electronic home shopping even started.)
The electronic home shopping cyber-malls are expected to take over 20% of the two trillion-dollar-a-year US retail market by 2007 (the largest of the service sectors, where all the new jobs are supposed to come from).
Between 1983 and 1993 - when the ATM's were generalized - US banks eliminated 179,000 human tellers or 37% of their workforce. Deloitte Touche forecasts another drop of 50% in banking personnel within 5 years.

Conventional wisdom states that unemployment is mostly a blue-collar problem, and only a temporary one at that. But this assumption is now hopelessly out of date, even in activities which have long been considered immune to technological obsolescence or corporate layoffs (see byline):

As far as the 'temporary' nature of unemployment is concerned, it is often implicitly assumed that - as in previous business cycles - the economy will pick up and the demand for labor will follow. Theory predicts that normal or "frictional" unemployment is indeed to be expected. It is part of the market allocation system that even in a booming economy, some people will be in-between jobs.

However, millions of people around the world are starting to wonder.

What is less normal, for example, is that the "frictional" unemployment level is slowly creeping up decade after decade. This is even more abnormal if one takes into account that people's ability to move around and the efficiency of our information systems to match jobs with people has increased over the same time period.

In Western Europe, the unemployment rate has been stubbornly stuck at a very uncomfortable two-digit level for a decade. In Autumn 1997, in Germany unemployment is at 11.7%, in Italy 12.4%, in France 12.5%, in Belgium 14.1%, and in Spain a mind-boggling 20.8%.

For the US, the official statistics of unemployment are clearly bucking this trend. But US wages peaked in 1973 and have been declining ever since, while Americans work an average of one month more per year than they did two decades ago.

Even Fortune Magazine has been wondering why "nearly half of all the new full-time jobs created in the 1980's paid less than $13,000 a year, which is below the poverty level for a family of four". Also, education levels don't necessarily help anymore. As reported by the Wall Street Journal, one college graduate out of three is now obliged to take a job which doesn't require a college degree.

The main difference between America and Europe is that in America, people end up accepting employment below their competence and training. Is a college graduate flipping hamburgers to be interpreted as a sign of a healthy economy and the high-tech society of the future?

Even in Japan, where employment by the same company is practically considered a birthright, unemployment keeps inching up.

What is going on?

2.2. The Age of Downsizing

Most of us have been trained to believe that we learn a profession, are hired by a company to perform a job in that profession, and - if we do all the right things - we will move up through the ranks until retirement. But this whole idea has already become as obsolete as the dodo.

For the past three decades businesses have invested billions of dollars in information-processing equipment. The rate of growth of such investments has been higher than any technology in history. For instance, the share of Information Technology investments in US firms has jumped from 7% of total investments in 1970 to 40% in 1996. Add the billions of dollars spent on software, and the amount spent on Information Technology, annually, now exceeds investments in all other production equipment combined.

To understand the true scale of this, one needs to multiply this extraordinary increase in dollar investments by an even more remarkable drop in unit cost. Computer processing costs have continued to drop by 30% per year for the past two decades, and all experts agree this will continue for at least another decade or two.

Initially repetitive tasks were computerized in one area after another of the corporation. However, all of these computer applications were really being built around the existing organizational structure and management procedures. One day someone thought to reverse the process by asking the simple question: "how should we organize ourselves to best take advantage of the available information technologies?"

Re-engineering was born.

So were "strategic layoffs".

In all fairness, such layoffs were not the intent of the original re-engineering inventors. One of the earlier pioneers was Thomas Davenport, research VP at CSC Index (the 'home' of Reengineering). In an article in Fast Company, Davenport reported that: "Re-engineering did not start out as a code word for mindless corporate bloodletting. It wasn't supposed to be the last gasp of Industrial Age management. I know because I was there at the beginning. I was one of the creators.... But the fact is, once out of the bottle, the re-engineering genie quickly turned ugly."

And like all genies, it cannot be put back into the bottle.

Large corporations worldwide have been shedding people at a rate of about 2 million people per year. And this is happening for the first time at all levels in the corporation. When Kodak reduced its number of management layers from thirteen to four, a lot of people who never thought it could happen to them found themselves out of work. Of course, a lot of new jobs are being created outside these corporations, but they usually do not measure up in terms of income level or security that people were used to and grown to expect.

What is important to realize is that these "strategic layoffs" are of a totally different nature from the normal cyclical layoffs of yesteryear. It was considered normal for example that factory workers would be let go whenever inventories of finished goods piled up as the business cycle moved into low gear. They would also be hired back as soon as these inventories were absorbed and the good days of the cycle returned. But with strategic layoffs, there is no reason to expect that the business cycle will reverse the trend. What is going is gone forever.

The extent to which the writing is on the wall can be comprehended by the comparison of two statistics quoted by William Greider :

- Percentage growth in sales of the world's 500 largest multinational corporations over the past 20 years: 700%

- Percentage growth in employment numbers by these corporations over the same time period: 0%

In short, the global 500 have managed to multiply their production and sales by a factor of 7 with the same workforce as 20 years ago. Another data point: the top 200 world corporations now control 28% of the global economy, but need only 16.8 million employees - a mere 0.3% of the world's population - to do so.

Growth without increased employment is therefore not a forecast; it is an established fact. And we should also be aware that we are still at the early phases of the true impact of the Information revolution...

Even the people who remain or are hired in these corporations face a very different process from previous times. The old criteria for hiring used to be the matching of job specifications to the classical three E's: Experience, Endorsements and Education.

Today everything is different at the pace-setting corporations such as CNN, Intel or Microsoft: "Nobody has a job. Even if someone is hired for a job, we forget about that as soon as he or she is in. The work is being done mostly in project teams which may often include outsiders. People have assignments, "own" a problem or an opportunity, but not a job."

In addition to straightforward layoffs, the need for additional flexibility has pushed corporations to redefine their own boundaries by:

Outsourcing: Xerox machines are being installed by Ryder truck drivers; Commodore computers are being repaired by the Fedex personnel which used to only deliver the parts.

Delocalization: One of the largest US insurance companies, Metropolitan Life, is billing from Ireland; British Airways is handling its accounting in Bangladesh; California software companies are debugging from India.

Temping: probably the most significant of all these new trends from a society viewpoint. The largest single employer in the US is now Manpower, whose business is to place temporary personnel in corporate jobs.

If you believe that all this is happening only in 'greedy private businesses', think again. Even the military - historically a rather eager employer of able bodies - is embracing the new way of thinking. The 1997 strategic review of America's defense capabilities concluded that as many as 50,000 active-duty troops should be cut, especially in the army, to help pay for weapons such as computerized artillery systems and electronic detectors of biological weapons. The Quadrennial Defense Review, analyzing what will be needed from now to 2010, has focused on cutting 'infrastructure costs' (now 40% of total Defense Department appropriations). This covers everything not directly related to its 'core competence' of fighting wars: from the military bases' cafeteria managers to schoolteachers, day-care centers to accountants. You guessed it: they are now 'privatizing' and 'outsourcing' these functions.

None of this should be seen as a short-term fad. A UK survey funded by the Department of Education and Employment and published by Business Strategies, a consultancy with close links to the Treasury, concludes that no new full-time employment is to be expected in Britain during the next ten years. While an optimistic forecast is supplied for self-employment and part time jobs totaling 1.5 million over that time period, none is expected to come from what was once considered 'normal' full-time jobs.

Nor should any of this be considered as a purely Anglo-Saxon trend. A survey of 4720 organizations in fourteen European countries performed by the Cranfield School of Management on behalf of the European Commission reports a staggering increase in part-time or fixed-term (up to 3 months) employment even just in the past year. The largest increase was in the Netherlands, where 70% of the corporations increased their use of part timers. More than 50% of the German, Italian, Finnish and Swedish corporations are now doing the same. The rest of Europe has registered an increase in 'only' 30% to 50% of the corporations.

Dr. William Bridges, who made an in-depth survey of the trends in jobs in the pace-setting US corporations, asks the question: "What is the percentage of jobs which are performed by temporary labor?" Most people's estimates fall in the range between 2% and 20%.

His answer: "In fact, it is 100%; 85% of us still happen to be in denial."

2.3. Tough Times Ahead?

The International Metalworkers Federation in Geneva forecasts that "within 30 years, as little as 2 percent of the world's current labor force will be needed to produce all the goods necessary for total demand". The interesting question is, of course, what will the other 98% do?

Some may argue: So what, jobs are disappearing? It has all happened before:

in 1800 over 80% of the US population was occupied in farming;

by 1900 this was down to 48%;

by 1950 to 11%,

and now to an insignificant 2.9%.

And that 2.9% not only feeds the entire nation better than the 80% ever did, but a good deal of the world as well! All these people who moved out of farming found jobs in the cities in industry, the trades, and services.

This is, of course, true.

However, there is a structural difference when we are dealing with an Information Revolution instead of an Industrial Revolution. A farmer became a stagecoach maker, and the stagecoach worker could learn how to make automobiles. Every time he would have to change jobs he would earn at least the same money as before, and typically much more. But what is a no-longer-needed information handler to do, flip hamburgers?

On the other hand, corporate executives who do not shape up their companies for the growing global competition do so often at their own and/or their company's peril. Trying to turn the technological clock back has never really worked: the Luddite revolt against the introduction of machinery in the industrial revolution illustrates what would predictably happen. The corporations or areas where the Luddites succeeded in stopping or slowing the process simply went bankrupt. So nobody wins in that game.

However, this time we may well remain stuck between a rock and a hard place. Because - while it makes sense for each corporation to improve its competitiveness by downsizing - this time all the pieces just don't add up. When Henry Ford decided to make a car that was so cheap that his factory workers could buy it, he put in motion a virtuous circle between more cars, more workers, more cars, more workers.

Jobless growth may very well turn this virtuous circle into a vicious one, operating in the other direction. Every time people are laid off or have their income reduced, they are going to drop out of the market for at least some of these great new widgets that the corporations keep producing. Even if each corporation is better off at each step, the total market pie is shrinking, so cumulatively we may suddenly find everyone worse off, including the corporation itself.

The fact that this is a global game further complicates the picture. Plants that are being built in the Third World are just as technologically advanced as those in the First World.

Wassily Leontieff, Nobel-winning economist, has summarized the overall process as follows: "The role of humans as the most important factor of production is bound to diminish in the same way that the role of horses in agricultural production was first diminished and then eliminated by the introduction of tractors".

We could let the horses peacefully die out, but what do we do with people? Remember, the global population will reach seven billion by the year 1999, eight billion by the year 2009...

2.4. Keynes' Foresight

John Maynard Keynes, in his Essay on Persuasion, predicted almost seventy years ago with remarkable foresight that a time would come when the production problem would be solved, and that the transition was likely to be a painful one:

"If the economic problem [the struggle for subsistence] is solved, mankind will be deprived of its traditional purpose. [...] Thus for the first time since his creation man will be faced by his real, his permanent problem [...] There is no country and no people, I think, who can look forward to the age of leisure and abundance without a dread. It is a fearful problem for the ordinary person, with no special talents to occupy himself, especially if he no longer has roots to the soil or in custom or in the beloved conventions of a traditional society."

The writing is on the wall: we are in such a predicament now.

Nor was Keynes the only one to foresee such problems. Norbert Wiener, the originator of cybernetics, was also one of the very first to warn on the social implications of computers: "Let us remember that the automatic machine [i.e. computer driven production equipment] ...is the precise economic equivalent of slave labor. Any labor which competes with slave labor must accept economic conditions of slave labor. It is perfectly clear that this will produce an unemployment situation in comparison with which the present recession and even the depression of the thirties will seem a pleasant joke."

3. Chapter 3: Implications for the Introduction of the Euro

"The future is like everything else, It isn't what it used to be" Charles Kettering

The Treaty on European Union, signed in Maastricht on February 7, 1992 (the "Maastricht Treaty") calls upon the member states of the European Union to form an economic and monetary union ("EMU") in three stages by the turn of the century. The new single currency - the Euro - will be managed by a single monetary policy defined by the European Central Bank (ECB). An important step in this process is the determination on April 1, 1998 by the European Council of the list of countries that will be allowed to participate in the first wave of Euro members to be launched on January 1, 1999. Specific standards of low inflation and sound public finances are to be the main technical criteria for admission.

3.1. The Introduction of the Euro

The EMU project is both ambitious and far-reaching. Nothing has been tried on this scale in recent monetary history. Given the unprecedented technical complexities of today's financial system such a massive simultaneous change has never been attempted.

"Yet the majority view is now that the EMU will proceed on schedule. This expectation reflects the perceived strength of political determination on the part of continental European leaders and their broad consensus on the approach to macro-economics management. It is supported by the fact that a high degree of convergence has been achieved in inflation control and control on public spending"

The Euro project is a vital necessity if the European Union is to thrive during the next century. However, accepting the goal of the EMU should not blind us to the unusual difficulties that the timing of its implementation will raise particularly in the domain of unemployment.

3.2. The Euro Quandary

While important positive reasons exist to introduce the Euro now, there is one significant negative in doing it at this time. The main problem in the timing of the introduction of the Euro is that it coincides with a level of unemployment as described in the previous chapter. Such levels of unemployment are unprecedented since the Treaty of Rome created the European Common Market in 1958. For several countries including Germany the current level is even the highest since the Great Depression of the 1930's.

The introduction of the Euro will reduce the room of maneuver for participating countries to reduce their unemployment levels in three converging ways.

Each government participating in the EMU is giving the levers of control over the Euro money supply to the European Central Bank. This European Central Bank will by definition be less responsive to the requirements of any one country's unemployment situation.

The European Central Bank (ECB) is bound to follow a tight monetary policy from its inception. The Maastricht Treaty gives it indeed full independence from any government pressure and a mandate to ensure price stability before any other objective. The main consequence will be according to Fred Bergsten: "The Euro will probably be strong from its inception... The ECB will be especially chary of any depreciation of the Euro's exchange rate, and is likely to view Euro appreciation as an early sign of success. Since the ECB lacks the 50-year credibility accumulated by the Bundesbank, it will have to demonstrate that it is tougher than its forerunner in pursuing monetary policy." A strong Euro means of course in practice a further reduction of the opportunities to reduce the unemployment level.

Finally, the only other traditional tool available - the fiscal one - has similarly been put under severe constraints. The maximum limit of 3% of government deficit financing is supposed to be a permanent one, and most governments are entering the Euro with their spending at or close to this straightjacket target limit. In practice this means again that little room for maneuver exists to reduce unemployment via the fiscal tools as well. If the fiscal policy constraints are relaxed the ECB policies would even get tighter. "Combining budgetary tolerance with a resolute ECB will further strengthen the new currency. The proper analogy is with the Federal Reserve, which produced a sky-high dollar in the early 1980's in the face of Reagan's huge budget deficits, or the Bundesbank, which produced a strong deutsche mark in the face of large deficits in the early 1990's triggered by German reunification. The ECB is likely to out-Fed and out-Bundesbank its most distinguished role models"

To summarize, an unprecedented set of circumstances is now converging over the next decade. Some, like the shift towards an Information Age, are at this point inevitable. Others, like the introduction of the Euro and the concomitant budgetary constraints imposed by the Maastricht Treaty, have powerful and valid arguments in their favor. These commitments were also made at a time when few people expected that the unemployment levels in Europe would remain stuck at the levels where they are now.

Bottom line: all signs are that the introduction of the Euro in such circumstances amounts to European governments painting themselves in a corner of untenably high unemployment levels without any of the traditional tools to do something about it.

3.3. Social and Political Consequences

Even before the introduction of the Euro the socio-political temperature in many European countries is uncomfortably high. If after January 1, 1999 the unemployment situation does not miraculously improve, one should expect the tensions to further rise, to the benefit of only the more extremist and nationalist political parties.

It is also to be expected that the European Union will be blamed for the growing unemployment situation - and if the European Central Bank feels obliged to follow the policies described above - the blame will at least partially be valid.

What is at stake ranges from an escalation of social unrest and political extremism to a loss of legitimacy of the European project.

4. Chapter 4: Complementary Currencies - Employment Creating Electronic Money

"What idealists have dreamt about, What hippies used to talk about, Now people are just doing" Anonymous

Ever since Keynes' ground-breaking work in the 1920's and 1930's the trade-off between employment, money supply and inflation has been a mainstay of the economic debate. However, one hidden assumption has remained deeply embedded in this entire debate: that there is only one currency involved, specifically the national currency, one per country. Once we lift that assumption, a whole new set of options become available.

The idea that multiple currencies could change the trade-off between inflation and employment may be considered controversial from a traditional economic theory viewpoint. We should first of all face the reality that practice is ahead of theory in this domain. So most of the evidence provided will be based not on theory but on fact. If the British are willing to consider "a fact more respectable than the Lord Mayor of London", the case studies described below should provide some validity to the claims presented here. In the next chapter some of the theoretical questions will be addressed.

One key observation about the current wave of computerization - both the Personal Computer and Internet - is that they tend to atomize production structure to the individual level (e.g. some activities such as desk-top publishing or very sophisticated financial management that used to require whole teams can now be accomplished by an individual on his or her PC). Similarly, no centralized panacea will solve Europe's unemployment problems. The approach proposed here - complementary currencies - is therefore appropriately highly decentralized and works well on a small scale in each of its applications.

We have seen that information technologies have made possible the emergence of several new kinds of non-traditional currencies. Several types of private corporate scrips are already operational, and more should definitely be expected within the cybereconomy environment. In addition to these business-based currencies, there are now also new kinds of electronic currencies which are typically started by non-profit organizations for social purposes. Mainstream academics or politics has until now paid scant attention to this social innovation. But they have proven successful in their stated aim to help reduce local unemployment, often with startling results.

4.1. Some Distinctions

As a starting point refreshing some distinctions may be useful. For example, in some of the literature on new currencies, some confusion has sometimes arisen between barter and complementary currencies. Sometimes barter is erroneously described as any exchange that does not involve the "normal" national currency.

The traditional definition of barter is the direct exchange of goods or services without any form of currency. Barter requires as a prerequisite that the two people involved each have something

that the other wants. This is a strong constraint to the fluidity of exchanges; which is why money was invented as a medium of exchange in the first place.

In contrast, a complementary currency refers to an agreement within a community to accept a non-national currency as a medium of exchange. Such currencies are called complementary because their intent is not to replace the conventional national currency but to perform social functions that the official currency was not designed to fulfill. It is also complementary because most participants use the normal national currency and a complementary currency in parallel. It is even often the case that a single transaction includes partial payments in both currencies at the same time. One of the systems described below (the Minneapolis dual currency smartcard) is even designed specifically to smoothly operate with both national and local currencies simultaneously.

Another useful distinction is the one between fiat money and mutual credit currencies.

A fiat currency is a currency which is created "out of nothing" by an authority. The term has a biblical origin from Genesis ("fiat lux" = let light be) referring to God's capacity to create something out of nothing. All our national currencies, including the dollar and the Euro in the future, are fiat currencies. So are some of the private currencies such as Cendant's netMarket cash which was described earlier.

In contrast, mutual credit currencies are created by the participants themselves in a transaction as a simultaneous debit and credit. A more detailed description on how such currencies operate will be provided hereafter in the case of Time Dollars and LETS, both mutual credit currencies. Mutual credit systems were re-invented in the early 1980's by David Weston and Michael Linton in British Colombia (Canada). Tom Greco found references to the core idea of such Mutual Credit Systems already back in colonial Massachusetts. In fact mutual credit systems are simply a monetary formalization of the tradition of helping each other that is embedded in almost all traditional societies, including in the countryside in Europe until one or two generations ago. In Southern France for example it used to be called "aller aux aïdats".

4.2. An Overview of Complementary Currency Systems

It is not the first time even during this century that non-national currencies have appeared on the scene: they were very popular in Europe, the US and many other areas of high unemployment after the crash of 1929. However the current systems have appeared without such a major crash. They are also more sophisticated, are typically computer-driven and have proven very helpful in terms of solving local unemployment issues. Figure 4.1 summarizes the dramatic growth of all types of complementary currencies over the past decade in a sample of a dozen countries. .

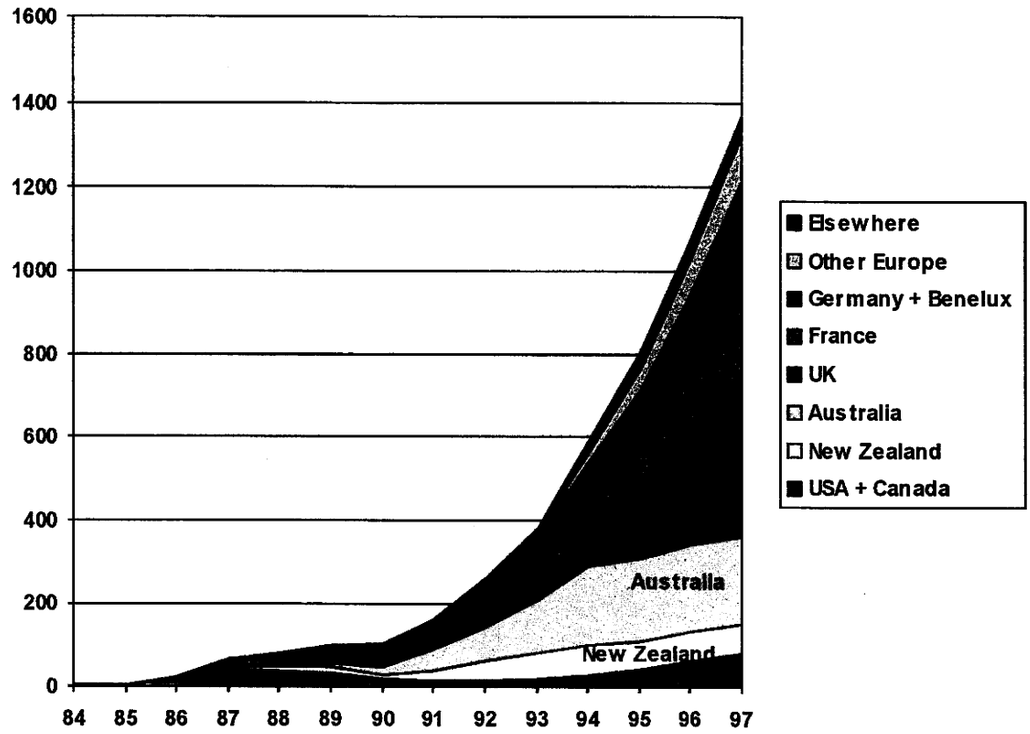


Figure 4.1 Number of Complementary Currency Systems Operational in Twelve Countries 1984-1996

In the balance of this chapter we will have a look at the different types of such complementary currencies currently operational, and how they came to be implemented in specific countries.

4.3. Time Dollars

Edgar S. Cahn, a prominent Washington lawyer, professor at District of Columbia Law School is the unlikely inventor of Time Dollars.

He developed his Time Dollar concept in 1986, initially for retirement homes in Florida, a school district in Chicago and a social project in Washington DC. Now it has spread into hundreds of applications, mostly in the US. One important incentive is that the Internal Revenue Service (IRS, the US tax authority) has ruled that Time Dollar transactions are tax free.

The Time Dollars system has an elegant simplicity. Here is how it works:

Joe doesn't have good eyesight and can't drive a car any more. But he needs a special pair of new shoes from the other side of town. Julia agrees to drive to get the shoes. It takes an hour to get them. Julia gets a credit for an hour, while Joe gets a one hour debit, which they can mark on the blackboard near the superintendent's office.

Julia can spend her credit on the cookies baked by another neighbor, while Joe will compensate for his debit by tending the community garden or something else that his bad eyesight allows him to do.

If, in the above example, Joe was going to spend one hour working in Julia's garden, that would be simply barter. However, the fact that Joe is going to work for an hour in the garden of

someone else in the community to cancel his Time-dollar debit, and that Julia can use her credit to buy Jane's cookies, makes Time-dollars exchanges much easier to complete than barter. Joe and Julia do not need to have matching needs and resources to complete the transaction.

That is why Time Dollars is money: i.e. an agreement within a community to use something (in this case, hours of service) as a medium of exchange.

In other words, Joe and Julia have created complementary money. It is as simple as that.

When Time is Money

(extract from *New York Times*: Saturday, January 9, 1993)

By Edgar S. Cahn

Washington

There is a kind of money that is immune to inflation, recession, taxation and government budget cuts. It is called Time Dollar, and like currency it puts supply and demand together. But Time Dollars are service credits that reward people - with purchasing power as well as affirmation of self-worth - for helping others. Here's how they work.

Daisy Alexander lives in a seniors' housing complex across the street from an elementary school; she needs a cane to walk. Every time she spends an hour tutoring kindergarten students, she earns a Time Dollar. Then, she can use Time Dollars to get help. In turn, the person who does her shopping earns time dollars that can be expended for other services. Ms Alexander's Time Dollars are deposited in a Time Dollar bank run by a consortium of volunteer organizations; the bank credits her account and sends her regular account statements [...]

In Miami, a day-care center is staffed almost entirely by Time-Dollar volunteers,; there is only one paid professional. The volunteers, mostly grandmothers, give the love, discipline, teaching and attention that working parents no longer have time for. Parents pay for the day care with Time Dollars and real currency.

Next month, people whose homes were damaged by Hurricane Andrew will be able to take out two-tier home repair loans: real currency for materials and Time-Dollars for labor. The AFL-CIO will provide skilled craftsmen and train volunteers.

In Washington, a hospital program allows people to exchange two Time-Dollars and $13 for $30 worth of groceries. An El Paso, Tex. health clinic lets patients pay part of their bills with Time Dollars earned staffing a program for pregnant teen-agers, conducting a nutrition and diabetes program and running a transportation pool that helps people get to clinics.

We could help transform public housing complexes into safe and secure neighborhoods by making residents pay service fees with Time Dollars they earn improving their buildings and helping each other. People testing HIV positive could earn Time Dollars helping those with AIDS, saving against the time when they may need help.

Well-off volunteers could become philanthropists, giving their Time Dollars to the frail and the infirm. College students could pay part of their tuition with community service and pay back part of their loans with Time Dollars. Project Head Start could be expanded if the staff were augmented by Time Dollar volunteers [...]

We have two economies: the market economy and the household economy. The market economy may be in trouble, but the real source of many of our problems is the devastated family economy. We live next door to one another but live as strangers. Time Dollars help knit neighbors into community.

Particularly in recession, we tend to forget that a society's real wealth is not money. Our fixation with budget deficits and cutbacks offers us little choice but increased insensitivity to human suffering. Time Dollars enable us to break out of that gridlock.

As of July 1997 more than 200 towns and social service programs have started Time Dollar systems in the US. One of the pioneering states was Missouri, which was the first to officially include Time Dollars as a key ingredient in its social policy. By 1995 there were 37 systems in Missouri . The overhaul of the US welfare system, which became law in 1996, is decentralizing many programs to the State level. We can now expect many states to follow Missouri in discovering the virtues of Time-Dollars, or some variation of it. By July 1997, Time Dollar systems have already spread to 30 States, including for instance Maine and Massachusetts where one of the first systems began with a $200,000 grant from the Robert Woods Foundation. Maine for instance has assigned a full-time State-level coordinator to start dozens of networks and then link them together.

The Time Dollar concept is definitely ready to spread out outside of the traditional US circles. For example, Pat MacMaster has started three projects within the Cambodian immigrant society in the US: Long Beach CA with a 50,000 Cambodian population , Lowell Chelsea (where 25% of the city is Cambodian) and Riviera Mass. They are using a "TimeKeeper" software which they downloaded free from the Internet to keep track of the hours for all participants.

The costs of starting such a system are practically nil: it can be done using a blackboard or a piece of paper. However most systems use a "Timekeeper" computer program offered for free on the timedollar website. All participants' names are listed with little pluses and minuses. It expands automatically to whatever person-hours are available. There are no problems of inflation in this system: no more time can be created than the 24 hours a day, and only a small fraction of that is available for exchange anyway.

Furthermore, whenever someone is getting a credit, someone else is automatically creating a debit. As with all Mutual Credit Systems, the sum of all the Time Dollars in the system is theoretically always zero at any point in time. But Joe got his shoes, Julia her cookies, and the community a vegetable garden, and not one dollar was needed to make it all happen.

But the goods and services exchanged are only the tip of the iceberg. A comparative survey was made of retirement homes: those using the Time Dollar approach compared with those that didn't.

In the retirement homes using the Time Dollar approach, they found that the process of helping each other while earning credits knits the group together. People say hello to each other. When there is a birthday, it becomes a big party for the entire home. People watch out for each other. There is a potluck dinner once a week, they start a communal garden. In short, community has been created.

This simple device has indeed changed the way people relate to each other. People feel that their contributions are rewarded. They feel valued. One totally unexpected side effect appeared: everyone seemed to get healthier. In Brooklyn, New York, a health insurance company called Elderplan has decided to accept 25% of the premiums for its senior health programs in Time Dollars. Elderplan has even created its own "care bank" where 125 participants log in an average of 800 hours of service per month. It started as a home repair service where small repairs problems are fixed before they cause accidents under the motto: "a broken towel bar is a broken hip waiting to happen". It is certainly clever marketing, but Elderplan also did it because they noticed that seniors participating in Time Dollar systems have fewer health problems. The bottom line is that their health care is less expensive for the insurance company. In a Europe where seniors are becoming an ever-increasing segment of society and where the medical expenses involved may bankrupt entire countries should such simple and cost-effective approaches not be considered more seriously?

4.4. Japanese Healthcare Currencies

In a development completely independent from the above, the Japanese seem to have asked that very same question. The Japanese population is aging faster than in any other First World country, and in order to deal with it a new type of Time-Saving account has been designed. In this system, the time that a volunteer spends helping older or handicapped person in their daily routines is credited to a computerized Time Account. There are different values assigned to different kinds of tasks or hours (for instance, a meal served outside the 9am to 5 pm range has a higher value than those within that time range. Personal body care has a higher value than household chores). This service time is guaranteed to become available to the person or member of their family in the future when they need similar help. The local and national government have provided a national clearing network, so that someone can provide help in Tokyo which becomes available for their parents elsewhere in the province. Many people just volunteer the work, and hope they will never need it, so it becomes a kind of insurance plan, which complements the available normal health insurance programs. Others not only volunteer, but also give their Time-credits away to people who they think need them more; so it is like giving double your time.

This whole process is also preferred by the elderly themselves because the service turns out to be more caring than the professional services which are paid in Yen! Even more important according to elderly is that it provides a more comfortable emotional space for them, as they would otherwise be embarrassed to ask for free services..

There are already 800,000 retired people needing help and another 1 million handicapped people in Japan, and the Ministry of Health statistics forecasts a vast increase in this problem in the foreseeable future. Such a "Time Saving" system is more cost effective and nurturing than the system which prevails in the West. Also, as seems often the case when well-designed complementary currencies are used, there is an increase in volunteer help. This should put to rest concerns that paying volunteers to do community service with complementary currency does not inhibit those not getting paid from volunteering. The reason may be just that there is a better community atmosphere in general which promotes taking care of each other. Maybe with this system, volunteers also feel more acknowledged.

4.5. LETS

The most frequent systems currently operating in the world are the Local Exchange Trading Systems (LETS for short).

4.5.1. Canadian Prototypes

In 1983, Michael Linton had implemented in Vancouver, Canada, a very simple but effective way to stretch the remaining scarce dollars circulating in high-unemployment communities. He incorporated a local non-profit corporation which is basically a mutual credit company, whose only indispensable asset was a personal computer. It is a membership organization, and one pays a small entrance fee to cover the set-up costs.

By coincidence at the other side of the country in the Northeastern provinces of Canada, years of over-fishing created a sudden necessity for fishing quotas to try to replenish the stocks. Just as suddenly, this brought to a halt entire fishing communities in the Maritime Provinces.

Previously prosperous villages suddenly found themselves at the brink of disaster with 30-40% unemployment levels. The LETS model became a way to address this crisis.

So let us follow Amy who has decided to participate in her local LETS-Happyville system after she had paid her $5 set-up fee and $10 yearly membership fee. Amy's account begins at zero balance. She sees from the (electronic and/or physical) notice-board that Sarah is offering automobile tune-ups, and John is the local dentist participating in the system. She also sees that Harold wants fresh-baked whole wheat bread. Amy sees potential trades in all of these. She negotiates with Sarah for her car tune-up for 30 "green dollars" plus $20 in cash for the new spark plugs. She gets her dental treatment from John for 50 "green dollars" and $10 in cash. She agrees to provide Harold with two breads this week for 10 "green dollars" and finds out that he also would like some of the vegetables from her garden for another 30 "green dollars".

The cash component is handled by all the participants directly as in any ordinary sales transaction, and only the "green dollars" component is called in by phone or by a note to the LETS system. At the end, Amy ends up obtaining what she needs for only $30 dollars in cash for a total value of $110 of goods and services. She also ends up still owing another 40 "green dollars" to the community as a whole. In most systems, there is no interest charge on any balances. Finally, the information about anybody's outstanding debit or credit balance is available to all participants so that there is a self-policing process to avoid people abusing the system by continuing to accumulate unreasonably high debit balances.

Canada has 25 to 30 operating LETS systems at this point.

However, LETS became much bigger in the UK than in its country of origin. From there it spread to a dozen other countries, primarily in regions where high unemployment levels prevailed.

4.5.2. UK

In 1994, Alan Wheatley, a Reuter journalist, filed this report:

> "Manchester, England,
> Warminster has its 'link'. Tomes its 'acorn' and Manchester its 'bobbin'.
>
> They are the currencies of some of the 200 or so local exchanges trading schemes (LETS) that have sprung up in Britain, most of them in the past 18 months, as self-help initiatives to revive economic activity in communities ravaged by recession. "I think they've become so popular because cash is short. That's the common story everywhere," says Siobhan Harpur, who works at the National Museum for Labor History in Manchester, and who helped set up a scheme in that city of 3 million people [...]
>
> The local council is encouraging the scheme by extending a 10,000 Pound loan to be repaid in bobbins, which the council will use to buy child-minding and other services...

> Ed Mayo, director of the New Economics Foundation, an "alternative economics" think tank, says local currency schemes could be particularly useful in greasing the wheels of commerce between cash-strapped small businesses. 'They have tight credit lines and could well benefit from local schemes to trade between themselves' says Mayo, who is founding a LETS in Greenwich, southeast London. [...]
>
> It would be wrong to dismiss local currencies as the passing fad of misty-eyed do-gooders. Some people get involved because they're interested in recreating a community,' Mayo says. 'But for others it's not a hobby, it's a livelihood. It gives them access to goods and services they might not otherwise be able to get hold of.'
>
> Geoff Mulgan, director of the Demos think tank, believes parallel economies such as LETS could provide jobs for many people without the skills or competence to participate in what he calls the money-based 'first economy'. 'Moreover, they may turn out to fit better within the culture of much of modern Britain, and in particular the culture of the young unemployed, than traditional solutions,' Mulgan says."

As a curiosity, let us also mention a British originality: a LETS system that is not local, named LETS PLANET. It specializes in exchanging vacation homes anywhere in the world.

A group of dedicated volunteers were behind the remarkable community information campaign which made the UK a fertile ground for local currency efforts. Among them, the group centered around LETSLINK UK such as Liz Shephard and Harry Turner were key agents in this process. Several innovations or expansions on the original model resulted from all this such as: the increased importance of the "Directory of Wants and Offers", specialized LETS projects for mental health care, or new software developments. The Schumacher Award for "triumph of individual effort" formally recognized all these efforts.

As of 1997, there are well over 400 LETS systems operational in the UK, a 100% growth since Alan Wheatley's report.

Another indication of the depth of the social experimentation with money that is going on in the UK is that there are now 500 credit unions (community created pools of 'normal' national currency to lend among members) operational in the country.

The Minister for Social Security, Mr. Peter Baldwin announced on December 8, 1993, that "LETS type credits will not be counted as income for the purpose of the Social Security income test. LETS type schemes are a useful community initiative which should not be artificially discouraged by Social Security arrangements. I believe there is a strong case for giving Social Security clients the flexibility to participate in such schemes. In particular, LETS type schemes represent a form of activity that assists our clients in keeping in contact with labor market skills and habits, and indeed, in contact with the labor market itself."

4.5.3. New Zealand

David James, a Quaker from Whangarei, and Vivian Hutchinson, a community activist from New Plymouth, both in New Zealand, participated in a Quaker-organized alternative economics workshop in London in 1984.

Back home, the new Lange-Douglas government had commenced the most significant restructuring of economic policies since the Great Depression. These new policies, combined with a global economic slowdown, created high unemployment, particularly in the rural/forestry areas.

By 1986, both the ideas and the social stress had reached critical mass, and David James launched the first New Zealand "green dollar" scheme: the Whangarei Exchange and Barter System (WEBS for short). He further conducted workshops to disseminate the idea. A government official, Hilary Allison, Regional Manager of the Alternative Employment Program of the Department of Internal Affairs in Dunedin, decided to fund an information tour of Otago and Southland in 1988. The national Television news broadcast (TVNZ) covered the success story of Whangarei, and the process spread like wildfire across the country.

We know more about the New Zealand situation than many others thanks to the first Ph.D. Thesis about LETS systems, by Mark Jackson.

Last but not least, there have been substantial debates and evaluations in New Zealand within the Internal Revenue Department (IRD, the tax authority) and the Department of Social Welfare (DSW, the administrator of the welfare and unemployment support system).

The tax authority has followed a general ruling that whenever systematic professional services are involved (e.g. a plumber doing a plumbing job), the green dollar income should be accounted for as regular income and taxes are due in NZ$. However, when the activity is outside of the normal activity (e.g. that same plumber repairing a car and getting paid in green dollars), then no taxes are due.

The Department of Social Welfare has directly been instrumental in funding a number of start-up projects in LETS systems. However, different regional offices of the DSW within the country had different interpretations about whether green income was making the participant ineligible for regular unemployment benefits or not. Finally, after an evaluation of the social effects in the field, the DSW ruled not to consider the green dollars as a reason to exclude people from the normal support system because

(a) the green dollar systems help the beneficiaries to maintain and acquire skills;

(b) participation helps maintain motivation to search for 'normal' jobs; and

(c) they are often a springboard to regular self-employment in the mainstream economy.

4.5.4. Australia

Currently, Australia has the highest ratio of local currency systems per capita. Although the government has not been as actively involved as in New Zealand in supporting LETS systems, the latest estimate is that there are over 200 systems operational today. One of the best known is the Blue Mountains LETS near Sidney, with well over 1,000 members.

In 1992, a purely Australian conference on LETS administration attracted 70 participants. After evaluating the results in the field, at least one of the provincial governments, the one of Western Australia, has allocated $50,000 in order to help launch new LETS systems in that region.

4.5.5. The French case: "Le Grain de Sel"

Complementary currencies are now operational in practically every country of the European Union. As a sample, we will take the case of France because it illustrates the process well.

The initiator or the first French system was Claude Freysonnet, a young Agricultural expert from the Ariège, Southwestern France. Her region is one where a lot of people have moved over the past decade looking for a refuge from the stress of the big cities, and "live a simpler life

closer to nature". However, as the French unemployment level suddenly shot up to 12%, it hit these newcomers particularly hard. They had not really meant that simple...

Many of them were customers for Claude Freysonnet's production of organic produce and cheeses, so she was increasingly affected as well.

In 1993, she heard about LETS currencies from Phillip Forrer, a Dutch friend. And presto, here comes "le Grain de Sel" (literally the "grain of salt", which in French, as in English, has the double meaning of something not taken quite seriously). SEL is also the acronym for "Systëme d'Echange Local" (Local Exchange System).

Today, Claude sells her excess production completely to the 300 participants of her "Grain de Sel" network of Ariëge. She has spent her own "Grain de Sel" income on fruit trees for her garden, bicycles for the kids, even the car she drives. Another participant in her network, Eric, unemployed, lives in a house which he rents in exchange for doing the repairs it needs, he eats organic food, drives around on his motorcycle, and just got a new kitten. Everything is paid in "Grains de Sel". He in turn trades his skills as an accountant and a handyman, which are used by Chantal, 35, who in exchange, lodges in her big house a group of children on week-ends and summer vacations. Marcel, 65, claims that "he finally has been able to realize some dreams which never came to fruition under the normal money system." In addition to the one-to-one deals that we find in typical LETS systems, every fortnight in Ariëge, there is new tradition: a very special big party in the market place of Poix. People come to trade not only their cheeses, fruits and cakes, as in the normal market days, but also hours of plumbing, hair cuts, sailing or English lessons. Only "Grains de Sel" accepted!

Many people from all around the area come just "because it is more fun this way".

Two and a half years later, Claude Freysonnet has imitators in France. A lot of imitators. There are now over 200 "Grain de Sel" networks in France. Some have decided to call their unit of account "la Truffe" or "Le Coquillage"(the truffle, the seashell).

In addition, there are some 350 centers specializing exclusively in trading knowledge and information ("Réseaux d'Echange du Savoir"). That concept has been around in neighboring countries as well. A typical example is what happens in "La Maison de l'Amitié" ("the house of friendships") in the little town of Beauraing, Belgium. Their little brochure has as cover title "I teach you, you teach me, we learn together". Bernardette exchanges lessons in accounting for a special jam recipe, Jean exchanges training about how to raise chickens against the way to bake traditional breads, Dominique and Sophie receive cooking lessons from Marie who is interested in lessons in Dutch. "It's a way to have relations which go beyond the simple 'good morning'. It's a great way to make friends. I have noticed that - once I understood the underlying principle - I dared more freely to ask for what I need. The other day I organized a workshop on Thai cuisine at home, and I just went out to invite my neighbors. It even has spread to the children. My daughter told me 'Caroline is a bit weak in spelling... I could help her'. I have been able to break the traditional barriers and treat everybody as an equal.".

This process has spawned a book on how to start your own information exchange center.

Every Saturday at 12.30 PM on the Television network 'France 2' there is a program entitled "Troc Moi Tout" (Barter Everything), which is the electronic version of a periodical called 'Troc Tout" . Three cable television programs (Paris Premiere, MCM-Euromusiques, and Eurosport) are providing a support system to advertise whatever anybody wants to exchange.

According to a survey made in December 1994 by the CREDOC (Centre de Recherche pour l'Etude et l'Observation des Conditions de vie) one out of four French now are performing

exchanges not using the official French Franc: 2% of all the French now trade mostly that way, 10% regularly, another 13% occasionally.

4.6. Minneapolis Dual Currency Smartcards

Joel Hodroff, founder of Commonweal, Inc. in Minneapolis, Minnesota has created what I suspect to be the first really integrated dual currency design. He also has obtained impressive endorsements from the business community (including presidents of several banks and of the largest shopping mall in the world), city and labor union leaders, county and state politicians, community activists, technology experts, and other opinion leaders.

The Currency Exchange Network (CEN) is designed as a win-win proposition for all participants. Businesses gain new customers and improve their profitability. Non-profits stretch their dollars at no cost to themselves, and earn referral fees ("cause related marketing") every time one of their members makes a purchase with their smart electronic card (the Commonweal "HeroCard"). And, perhaps most importantly, communities have a way to mobilize otherwise underutilized human and other resources to solve their local problems.

All the pieces of the puzzle, including the technologies, are currently available and have all been successfully market-tested separately. What is new is putting them all together in an integrated design.

The secret is a dual, complementary currency system.

Here is how it works.

4.6.1. The Concept

A smart debit card (the "HeroCard") is encoded with the information necessary to make debits in both US$ and local currency in a single payment action. Such smartcards have been tested extensively for payment systems, particularly in France and in Swindon, UK, (the Globex project). The Globex card, for example, has the capacity to use up to five different currencies, although in the UK experiment only one (the normal national currency) was activated.

In the Minneapolis case, two of the currencies would be activated: the normal US$ and C$D. C$D is an acronym for Commonweal Service Dollars. Its unit of account is 1 C$D = 1 US$, and one service hour is valued at 10 C$D

There are two complementary organizations in the Currency Exchange Network: one a for-profit business and the other a non-profit arm. The former deals primarily with the business participants and makes its money as any credit card clearing business does, while the latter makes the C$D available to the non-profit community of the area.

The process of C$D creation starts in the business world. Practically all businesses are designed with spare capacity in order to be able to deal with the high seasons or hours. This spare capacity is therefore lying idle most of the time: movie houses in matinees, even the most popular restaurants in the earlier hours, resort hotels during week-days. Most manufacturing processes similarly lend themselves to making a few extra runs whose marginal costs are only a fraction of the normal costs. For example, furniture makers or clothing manufacturers can produce at a low marginal cost extra items of a series, and often do so. Today, in most cases this extra capacity is left just to lie idle. The more entrepreneurial businesses try to make something extra on it by

off-loading the surplus items in barter or discount deals. All this is already very common in many types of businesses from hotel rooms to two-for-one dining in restaurants, from textiles to sports goods.

In Minneapolis, businesses now have an additional option: joining the Currency Exchange Network and getting paid in C$D. (For example, a restaurant could decide to accept C$D for up to 50% of the bill for any customer before 7 PM instead of the usual two-for-one early dining discount. It could choose to accept only 40% in C$D after that hour. Or a movie house could accept up to 90% in C$D during matinees because their marginal dollar cost once they project a movie is, in fact, zero for one additional customer as long as seats are available.)

What C$D do for non-profits is to "stretch their dollars": they can now pay their social workers with a mix of dollars and C$D. In addition, the participating non-profits receive a percentage of all the transactions whenever their supporters or members use their HeroCard. Each card user has indeed the option - when (s)he joins the Currency Exchange Network - to choose one or several non-profits or causes to whom an agreed percentage of the value of any transaction on the card would be credited. Such cause-related marketing has proven to be one of the most successful new marketing devices in the past decade.

One important feature of the Minneapolis approach is that after a C$D has been redeemed in a business, it disappears (in this aspect C$Ds are similar to frequent-flyer miles or discount coupons). New C$D are then issued to reward new community services. This limits the problems that can arise in decisions of quantities of money to be issued, given that they automatically self-destroy after one commercial use.

4.6.2. Advantages of the CEN Approach

This design combines the advantages of three different alternative currency systems in use elsewhere: the Time-Dollars; Barter dollars and Corporate Scrip (best known example today is the frequent flier miles used by airlines).

It enables people who have more time and less money to fully participate in the economy (as with Time-Dollars). It is also very effective marketing , because it increases customer loyalty without having to cannibalize their normal dollar-based clients.

It is really a win-win for the entire community, as shown for each type of stakeholder.

4.6.2.1. For participating businesses:

From the participating businesses' viewpoint, there is one significant advantage even beyond customer loyalty , cause-related marketing and the label of good "community supporter' already mentioned.

Businesses get clients they would not get without this system, and they still make a dollar profit on each transaction. (because the dollar component should always more than cover the marginal dollar costs, including taxes.)

Finally, the improvement in the neighborhoods where services are provided that otherwise would not occur is good for business overall.

4.6.2.2. For Non-profit Organizations

They are also among the big winners in this new game. They often can double their activities with the same dollar-base revenue. Not only do they receive the C$D for nothing from the Currency Exchange Network, they also obtain a continuous dollar and C$D income from their members and supporters via the cause-related marketing aspect. The community involvement in the selection and allocation of C$D also gives the more active non-profits a wider recognition. Finally, as has already been observed in Time-Dollar projects or the Japanese Time-Savings accounts , the overall quantity of volunteer time given increases when community giving receives more visibility.

4.6.2.3. For the unemployed and poorer people

This system enables people to change time into money. The poorer people can therefore more fully participate in the economic system, as they are typically those who have more time than money to spend. It therefore increases their earning power significantly. It also provides them with a second career chance in the non-profit world which would otherwise not exist The discreet nature of the payment system (nobody but themselves and the cashier has to know whether they are paying in dollars or C$D) also ensures more dignity than food stamps or social security checks. It is also free of the hassles of more bureaucratic programs.

4.6.2.4. For the Rest of the Community

Even the people who do not want to participate at all in any part of the system derive a significant benefit from this approach. If the Currency Exchange Network did not exist, a number of functions in their community would either not happen at all or would have to be subsidized by their taxes.

What the Currency Exchange Network system does is, in fact, mobilize otherwise unused resources in the community to solve problems that need solving. It achieves this while using the market system every step of the way and without taxation.

4.6.3. Current Status

As of early 1998, the Commonweal system is in its pilot implementation phase in the Lyndale neighborhood of Minneapolis. Besides the non-profit sector, the Chamber of Commerce and mainstream businesses are involved, including the National City Bank which provides the accounting system and statements in C$Ds.

4.7. Curitiba Tokens

This last example comes from Brazil and is included here notwithstanding that the complementary currency used is not electronic, but low-tech tokens instead. For the record, such low-tech solution does not take anything away from its effectiveness, and in this case even adds to its social benefits. It is included because it is the only case I know where complementary currency concepts have been applied for over 25 years, and from which long-term macro-economic results can be evaluated.

In 1971, Jaime Lerner became the mayor of Curitiba, the capital of the southeastern state of Parana, Brazil. He was by profession an architect.

Quite typical for the region, the urban population had mushroomed from 120,000 people in 1942 to over a million in 1971 when Jaime became Mayor (by 1997 it has grown to 2.3 million). Again, quite typically, the majority of these people lived in "favelas", the shanty towns made out of cardboard and corrugated metal.

One of Jaime Lerner's first big headaches was garbage. The town garbage collection trucks could not even get into the favelas because there were no streets for the trucks to use. As a consequence, the garbage just piled up, rodents got into it and all kinds of diseases broke out. A mountain sized mess...

Because they didn't have the money to apply normal solutions, Lerner's team just invented another way. Large metallic bins were placed on the streets at the edge of the favelas. The bins had big labels on them which said: glass, paper, plastics, biodegradable material and so on. They were also color coded for those who couldn't read. Anyone who brought down a garbage bag full of presorted garbage was given a bus token. For the biodegradable materials they are given a plastic chit exchangeable for a food parcel. A school-based garbage collection system also supplies the poorer students with notebooks.

Soon the hills were picked clean by tens of thousands of kids, who learned quickly to distinguish even different types of plastic. The parents use the tokens to take the bus downtown where the jobs are.

What Jaime Lerner did, from our perspective, is reinvent Curitiba complementary money. His bus tokens and food chits are playing exactly that role. His program "Garbage which is Not Garbage" could just as well have been baptized "Garbage which is Your Money".

Today, seventy percent of all Curitiba households participate in this process. The sixty-two poorer neighborhoods alone exchanged 11,000 tons of garbage for nearly a million bus tokens and 1,200 tons of food. In the past three years, more than 100 schools have traded 200 tons of garbage for 1.9 million notebooks. The paper recycling component alone saves the equivalent of 1,200 trees each day.

Let it be clear that Lerner's team did not start off with the idea to 'create a currency'. What happened instead is that they used an integrated systems analysis for the major issues at hand, and spontaneously ended up creating a complementary currency to solve them because it enabled them to "create a complementary economic loop that the normal national currency was not designed to handle" . For instance, the "garbage loop" includes besides garbage and public transport the marginal farmers of the area whose fruits which do not meet "supermarket esthetic quality standards" are provided to children who otherwise would have food deficiencies.

What started as a garbage and public health problem, has become a way to solve public transportation and unemployment problems in a unique innovative process. The secret - according to the planners themselves - is not that this city or population has something unique, but simply that a complementary economy driven by a complementary currency made possible new ways to tackle the problems at hand.

The net result is a city where many things run against conventional wisdom. Some examples follow.

Curitiba: an Other Development Strategy

Public transportation is encouraged over individual car usage. This is accomplished by making the public transport *better and more convenient* than the private variety. For example, it is *speedier* because of an original speed-loading process: the bus tokens enable the users to enter into specially designed raised-tube bus stops; when the bus arrives, several sections of both the bus and the unit open so that people can move in and out in large groups in a few seconds, and no time is lost collecting the money or tokens. Similarly, the special express lanes for public transport have made bus use the fastest and most convenient way to move around anywhere. A single fare (at .65 R$ or about 50 cents) enables someone to move over the entire system, including any connections to feeder and inter-district public transport systems, independently of distance covered. The real test is that this public transport system has become the preferred way. In fact one out of four people using public transportation own cars, but prefer not to use them to get around town. Because of the efficiency of the public transport system, fewer cars are needed, and it has been possible to create several pedestrian streets in downtown, including the Main Boulevard which became a pedestrian walkway in 1961. These pedestrian streets are now used for local music or popular theater performances or children's art festivals. There are also arcades of shops and restaurants which stay open 24 hours per day and maintain the vitality of the downtown area, instead of the ghost-towns that characterize most city centers.

Conventional city planning claims that any city over 1 million inhabitants must have a subway system to avoid traffic congestion. Similarly, cities that generate more than 1,000 tons of solid waste a day need expensive mechanical garbage-separation plants. Curitiba has neither. And the investment needed for their public transport system costs only 5% of an equivalent underground system. The savings has allowed Curitiba to keep its fleet of buses among the newest in the world.

There is a Free University for the Environment offering practical short courses at no cost for homemakers, building superintendents, shopkeepers and taxi-drivers. They are taught the environmental implications of their daily activities. It is a breathtaking architectural building made mostly out of recycled telephone poles, in what is now an idyllic setting near a lake. It used to be a useless and abandoned industrial stone mine.

Curitiba is the only town in Brazil that now has a significantly lower pollution level than in the 1950's; it has also a lower crime rate and a higher educational level than comparative Brazilian cities. It is the only city in Brazil today that has actually turned down grants from the federal government, because they have solutions which involve less red tape.

A botanical garden has been planted on what was once the inner city dump, which now serves as a recreation and research center. In addition, there are currently 16 different nature parks around the city, based on different themes. As a consequence, Curitiba has 52 square meters of nature per inhabitant (the UN ideal standard is 48 square meters of green surface per city inhabitant, a level rarely, if ever, reached by cities in either developed countries or the Third World). Furthermore, all these nature parks are easily accessible from the transportation network, so that the ordinary people can - and do - fully take advantage of them.

Curitiba was recognized in 1992 by the United Nations as the model ecological town in the world. And Jaime Lerner has received international recognition for his initiatives.. Some other cities have started to take notice. About 20 cities in Brazil have started to implement the integrated public transport system. Cape Town has copied several features of it. City planners from Buenos Aires, Santiago de Chile, Montreal, Paris, Prague, Mexico and Lagos have been impressed by what they saw.

Perhaps the clearest political signal that all this works: every time Jaime Lerner presented himself for election, he was reelected by a landslide. Today, he is Governor of the State. A movement has started to draft him as next President of Brazil.

The Curitiba story demonstrates that there are political careers to be made in relation to complementary currency. Indeed, Jaime Lerner's story cannot be attributed to personal charisma or ethnic background. The proof is that not one but at least three different political careers have already been launched on the strength of these ideas. The two mayors who succeeded Lerner - Rafael Creca and Cassio Inaguchi, with quite different personalities and ethnic backgrounds - started as staff members in Jaime Lerner's planning team.

What is required for succeeding on this path is imagination and an ability to get things done.

Finally, the impact of Curitiba's specialized currency systems is measurable in traditional economic terms. The average Curitibano makes about 3.3 times the Brazilian minimum salary, but his real total income is about 5 times that minimum salary. The difference is income directly derived from the complementary economic loops, such as the food for garbage systems. Another sign is that Curitiba has what is widely considered the most developed social support system in Brazil and one of its most vibrant cultural and educational programs, and still doesn't have a higher tax rate than the rest of the country.

Even at the traditional macro-economic statistical level there are clear indications that something unusual is going on in Curitiba. The Domestic Product of Curitiba increased between 1975 and 1995 by some 75% more than the entire State of Parana, and 48% more than Brazil as a whole. Such difference in growth rate has remained valid in the recent past: between 1993 and 1995, Curitiba's Domestic Product grew 41% faster than the State of Parana and 70% faster than Brazil's.

Curitiba's success has attracted an internal immigration so that the Curitibano population also grew faster than the State of Parana or the country as a whole. On a per capita basis the difference is therefore slightly less impressive, but still quite significant. Between 1980 and 1995, Curitiba's Domestic Product per capita grew 45% faster than the State of Parana or Brazil as a whole.

Curitiba is a practical case study where 25 years of experience show that a whole system approach using both the traditional national currency and well designed specific complementary currencies is beneficial to everybody, including participants who are focused exclusively on the traditional economy. It enabled one Third World city to join First World living standards in one generation's time.

4.8. Conclusion

The main point in this chapter was that the Information Age has made it easier to implement some important new social innovations. Mostly below the radar of traditional economics or politics, such social innovators have already used complementary currencies to successfully address local problems. Very little theoretical economic work has been on this topic. It is clear that in all these cases people freely chose to use these complementary currencies and that they therefore must provide some important benefit to compensate for the inconvenience of having to deal with two currencies instead of one. One typical first reaction by traditional economists to the appearance of non-traditional currencies is to try to explain it away by suspecting tax avoidance or evasion. While there is certainly people who may not report such income (just as is

the case with income in national currencies), such a tax avoidance explanation cannot explain the process, because the most popular form of complementary currencies (LETS) is completely computerized and is much easier to monitor by tax authorities than for example cash transactions in national currency.

There is ample evidence from interviews with participants in complementary currency schemes that the main reasons for getting involved fall in three categories:

- because of unemployment national currencies are just not available in their community;

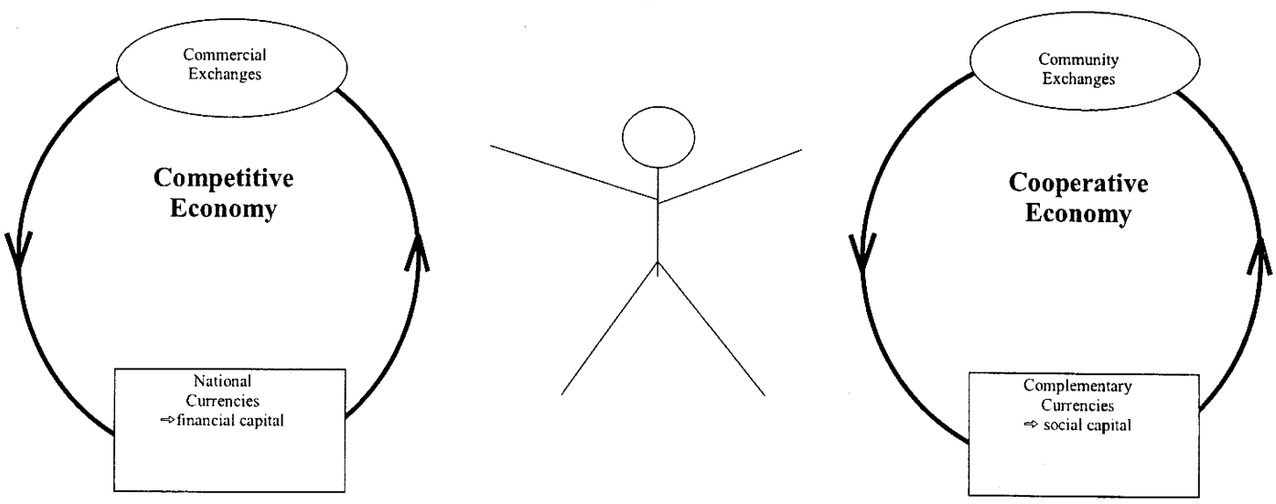
- such currencies give a sense of belonging, as was the case in earlier forms of money according to William S. Desmonde: " Money symbolized the loving giving and taking among individuals which gave men the feeling of having emotional roots in their community"

- a sense of local pride, of being capable of solving their own problems in their own way.

All three of these reasons are positive from a social perspective.

A European Social Policy for the Information Age

Complementary Economies/Currencies



Activating Complementary currencies ⇨ facilitates creation of social capital /win strategy for both economic circuits

5. Chapter 5: A European Social Policy for the Information Age

"In times of change, those who are ready to learn will inherit the world, while those who believe they know will be marvelously prepared to deal with a world that has ceased to exist" Eric Hoffer

Europe has a long tradition of pioneering social policies aiming at improving the standard of living of its workers, admittedly often after bitter social struggles. The Information Age and the globalization of the economy is definitely going to provide a challenge for the existing social programs in Europe. We have also seen earlier that unless some non-traditional solutions are implemented, the introduction of the Euro may worsen an already critical situation.

5.1. Europe different from the US?

Conventional wisdom in the US is that "Europe will have to restructure if it wants to address the unemployment problem". This means in practice the dismantling of the social security safety net, a substantial reduction of the standard of living of the workers, and a rapid growth in the income gap between the top 5% and the rest of the population, all of which has occurred in the US over the past two decades.

I believe that there are a number of reasons - political, pragmatic, historical, even ethical - why Europe should consider taking a different road in this domain. An explanation of the first two should suffice here.

Politically, the highly individualistic ideal which underlies the US internal policies since President Reagan are based on a political alliance between Christian fundamentalists and the Republican Party. In addition, this alliance formed such a political majority only because the single largest political party in the US are those who have given up voting at all. Presidents Reagan, Bush and Clinton were all elected by about one out of four of US eligible voters. The implication is that if the US had an electoral law that makes voting obligatory - as is the case in many European countries - it is unlikely that the current coalition in the US would still be a dominant political majority. One proof of this is that the political right has blocked initiatives that would encourage the average voter to vote (for example, automatic voter registration with driving license renewals). Finally, the success of Reagan's gambit against the USSR and the power of the US as sole remaining superpower has provided fuel to the idea that "right wing policies work". None of all these conditions prevail in Europe.

Pragmatically, the downgrading of the standard of living of workers in Europe would not happen without a much stiffer labor resistance than has been the case in the US. Social unrest, widespread strikes, even violence would have to be factored in. Such a situation would scare off investors rather than attract them. So in Europe the employment situation would first get much worse before it has any chance of getting better, if US type policies were applied in Europe.

But the bottom line remains nevertheless valid: the Industrial Age welfare state is in trouble, and new approaches need to be considered.

5.2. A Proposal for a Social Policy Incorporating Complementary Currencies

First of all, whatever traditional policies which have proven effective at reducing unemployment and meet other social needs should be continued to the extent possible. Chapter 2 and 3 has shown however that such traditional policies will not be sufficient. This is why less traditional means should be considered as well.

We have seen earlier that the Information Age is likely to end the monopoly that national currencies have enjoyed as medium of exchange over the past couple of centuries. Private corporate scrip is the most likely candidate to pick up a more active role over the next decades. However, complementary currencies could also play a more active role than they have done so far. The claim here is that in parallel with the introduction of the Euro, it would be very beneficial to include a formal role for complementary currencies in a new European Social Policy for the Information Age. Such an approach can be achieved at practically no cost to European governments simply by removing administrative barriers from the creation and use of such currencies. There are three different levels by which such a policy could be implemented.

5.2.1. Passive Tolerance

A policy of passive tolerance towards complementary currencies is basically what has been happening so far in most European countries. Continuing such a tolerance policy simply means avoiding introducing new or additional administrative hurdles. A group of people agreeing on using something else than national currency as a medium of exchange among themselves does not break any laws anywhere. From a tax viewpoint any income obtained in complementary currencies is treated as if it were income in national currency, and the taxes are due in "legal tender", i.e. the national currency. And from an unemployment benefit perspective, an unemployed person who starts making money in complementary currency could lose his unemployment benefits as if such income was in national currency.

5.2.2. Mildly Supportive

This is the level of support that the New Zealand government and more than 30 States in the US have been providing to complementary currencies (in the New Zealand case to LETS type "green dollar" systems, in the US to Time Dollar systems).

In both the US and New Zealand the local governments have directly been instrumental in funding a number of start-up projects in complementary currency systems. The main justification for doing this is that for a given amount of social support provided to the end-user setting up a complementary currency system costs only a fraction of the more traditional support to unemployed people. Complementary currency systems provide a mechanism for people to help themselves on a permanent basis.

They also ruled not to consider the complementary currency income as a reason to exclude people from the normal unemployment support system because as mentioned earlier:

- the complementary currency systems help the beneficiaries to maintain and acquire skills;
- participation helps maintain motivation to search for 'normal' jobs; and
- they are often a springboard to regular self-employment.

In the US, several States are now paying full-time administrators and promoters of Time Dollar systems. Their salaries have proven amply justified because Time Dollars have proven an effective complement to social programs which were failing without them. It has been proven time and again that for instance crime cannot be reduced just by adding more police, or that failing education cannot be remedied by throwing money at the problem. Nothing can replace a community where people watch out for each other, or older kids mentor younger ones. And complementary currencies such as Time Dollars have been able to build community and other social capital in a way that national currency simply fail to do.

From a tax authority perspective, New Zealand has followed a general ruling that whenever systematic professional services are involved (e.g. a plumber doing a plumbing job), the "green dollar" income should be accounted for as regular income and taxes are due in NZ$.

The US went one step further by having the IRS rule that any income in Time Dollars is automatically tax-exempt

5.2.3. *Strongly Supportive*

What this would involve is to provide systematic funding for complementary currency initiatives that provide better social results at a lower governmental cost. This would include funding the start-up of complementary currency systems and all the other features described in the "Mildly Supportive" policy.

The Japanese go beyond that with their healthcare system, as the government is paying for the accounting and clearing systems for Health Care Time Accounts. They justify that because it reduces the need for funding of traditional healthcare in Yen, and provides a better service as well..

Besides automatic tax-exemption for income in complementary currency as is the case for Time Dollars in the US, the most productive tax incentive would be one for businesses to accept complementary currencies. As most complementary currency systems are already set up as non-profit membership organizations, one could simply allow businesses to treat complementary currency income as a contribution to a non-profit organization. Community Way, a multi-million dollar project in Vancouver, Canada, is currently experimenting with this approach.

Another important incentive which would not burden government budgets would be the acceptance of complementary currency in payment for local taxes. The main purpose of such local taxes is to provide local services, and there is no reason that the local authorities would not be able to use complementary currencies in partial payment of such local services.

5.2.4. *Which Policy?*

The choice among the different policies above - tolerance, mildly or strongly supportive - would best be decided on the basis of the level of unemployment of the region involved. If unemployment levels remain at the current uncomfortably high level until the moment of introduction of the Euro, a strongly supportive policy would be justified. If a significant recovery occurs, a mildly supportive or even a continuation of a passive tolerance policy could be warranted.

5.3. Complementary Currencies and Inflationary Pressures on the Euro

One of the main difficulties in thinking about inflationary pressures in the context proposed above is that everything we have learned from the economic or monetarist perspective assumes implicitly that there is only one single currency system in a country. For example, within that frame of mind, the appearance of a second complementary currency may simply (but erroneously) be interpreted as a local increase in money supply and, therefore, if this becomes widespread, will by definition create inflationary pressures on the economy as a whole.

This reasoning would be valid if the complementary currencies were fiat currencies as the Euro or the national currencies of today. One type of local currency, the Ithaca HOUR is an example of a non-traditional fiat currency (and has not been included as an example earlier precisely because of its potential inflationary impact if it became in widespread use.}

However if the complementary currency is well designed and managed, it does not contribute to inflationary pressures on the Euro or any other national fiat currency.

Rather than argue from theory to prove this point, let us take three practical examples of increasing complexity.

In the case of simple barter exchanges, where no currency is involved at all, the only change after such an exchange is who owns what. No inflationary pressures are arising from such exchanges given that the overall quantity of goods and currency in circulation remain unchanged.

In the case of mutual credit systems (e.g. LETS or Time Dollars) the situation is in some respects similar, because for every credit generated there is a simultaneous creation of a debit within the same community of consumers. The net amount of currency in circulation is therefore still the same exactly as in the case of straightforward barter.

In the case of the Minneapolis Community Exchange Network (CEN) system, the argument is a bit more complex. In that case the currency is being issued in proportion to the spare capacity of the businesses participating in the system. The existing precedent is the well-known corporate scrip issued by airlines, the so called frequent flier miles.

Does issuing frequent flier miles increase the number of times a passenger will fly? The answer is, of course, yes.

However, does it create inflationary pressure on the airline airfares? The surprising answer is no. Not because the marginal cost for an additional passenger is practically nil (which is why they give these free tickets in the first place), but because any airline manager worth his or her salt will ensure that anybody using the free frequent flier ticket is sitting in a seat that would otherwise be empty. That is why there are restrictions such as "no frequent fliers on Christmas or holidays, or on this route on week-ends," etc.

This is exactly what happens with the Minneapolis C$D issued. A restaurant could accepts 50-50 national currency- complementary currency before 7 p.m. and 60-40 afterwards because the restaurant is mostly empty in the early evenings. So there is no inflationary pressure on the restaurant's prices, because it just uses space that would otherwise remain idle. In a competitive market, a restaurant would theoretically be able to afford to increase prices only when operating above capacity. This feature of enabling the businesses themselves to better manage the problem of their excess capacity - from a theoretical inflation control viewpoint - is one of the intriguing aspects of the complementary currency approach. Within a single-currency environment there is no easy way for the businesses to differentiate among customers to

improve the use of their spare capacity in order to increase their productivity. For instance, what tends to happen with discount offers is that they end up cannibalizing the income from normal national currency customers.

This is not to say that the problem of inflation has been solved with this process. But we have shown at the very least that the normal monetary equations mislead us whenever complementary currencies instead of a single national currency are involved. It is clearly another game.

One could even argue that it will be possible to better protect the Euro if well-designed community currencies are encouraged in Europe. That this is not just theory is demonstrated by the case of New Zealand. One would expect Central Bankers to react with suspicion when complementary currencies are appearing. However, the Governor of the Central Bank in New Zealand is approving of them. This may have something to do with the unusual contract with the Governor has with the New Zealand government. It stipulates that the Governor will automatically lose his job if the inflation rate on the national currency exceeds 2.5% per annum. This stipulation is one of the many original initiatives created when New Zealand decided to modernize its social and institutional systems a decade ago.

This contract has the advantage of concentrating the mind of the Governor on the main objective of his job: keeping inflation in control. The New Zealand Central Bank suddenly discovered that local currencies are useful to attain its inflation control objective. If in the pockets of highest unemployment people create a local currency to alleviate their own problems, then the political pressure to drop interest rates and potentially fuel inflation would also be reduced.

Suddenly, the first Central Banker in favor of complementary currencies was born....

If the main objective of the European Central Bank is to keep inflation in check, and not to protect by principle a monopoly of currency issuance, then a conclusion similar to the one in New Zealand should prevail.

6. Chapter 6: Three Policy Recommendations

"People who say it cannot be done Should not interrupt those who are doing it" Jack Canfield and Mark Victor Hansen

Pulling together the policy implications of the main threats of this Report, the following three main recommendations follow.

- Europeanize the Cybereconomy;

- Develop a European Social Policy for the Information Age;

- In parallel with the introduction of the Euro, provide for a Role for Complementary Currencies.

6.1. 1. Europeanize the Cybereconomy

The cybereconomy is a spin-off from Cold War technology, and the spearhead of the next wave of global economic development. It represents the fastest growing component of the world economy. The cost advantages involved are such that the cybereconomy is a train that will not be stopped, even less so than it had been possible or productive to slow or stop the wave of Industrialization over the past two centuries.

The fundamental question for Europe is whether it will be on that train or not, and what role it plays when riding that train. The "Less Developed Countries" of the 21st century will be those who have no adequate Information Age infrastructure or active presence in the cybereconomy; just as the Less Developed Countries of the 20th century were those who did not have an adequate industrial infrastructure and presence in the industrial economy. It is therefore proposed to Europeanize the cybereconomy thanks to a series of converging policies such as:

Instead of attempting at slowing down the European involvement, ensure that Europe is part of - even becoming a pioneer in - the new economy and its enabling technologies. It is particularly important that the challenge to Europe of electronic money and the cybereconomy described in this Report not be interpreted as a justification for projectionist policies in this domain. The temptation to block or slow down the introduction of these technologies in Europe should be resisted, because they will predictably end up being seriously counterproductive. Specifically, it would be dangerously short-sighted to try to maintain a monopoly for the use of the Euro or the national currencies by impeding monetary and payment systems innovations by either leading-edge corporations or grassroots non-profit organizations. Doing so would still not stop the impact of the Information Age, but would deprive Europe of precisely the best tools available to facilitate the adaptation to the required changes in a socially acceptable way.

The issue of privacy in the cybereconomy is a key one where Europe could play a pioneering role. Under the present legislation in the US, consumer privacy has been neglected under lobbying pressures by the main commercial interests which have already staked out the cybereconomy. The potential for abuse made possible by concentration of massive amounts of individualized transaction and other personal data in the hands of a few large mega-Information

corporations is real. Historically, the American tendency to address such a problem would be to create new anti-trust regulations, while the European one would be to regulate. Both these approaches could be counterproductive in a highly innovative and immature market environment as the cybereconomy is today. A better way would be to simply legislate that any personal data - medical, financial, commercial transactions, etc. - belongs by right exclusively to the person whose data this is about. A corporation could use the corresponding data only for the purposes of the initial transaction involved. It would therefore not be allowed to use, sell or trade that information for purposes other than the original intent of the transaction. The consumer would of course have the right to wave this constraint if he or she so desires, but such a decision would remain in the hand of the consumer, not the corporation. This would be an extension to information of a right over one's body. For instance, a person's kidneys are his or her own exclusive property, and can be given only with that person's conscious decision and permission. Such a policy would not impede the development of the cybereconomy, but it would ensure that its benefits are spread out to include the consumer level. Corporations would indeed provide incentives to consumers to give them the right to use the transaction data for other purposes. Without such a provision, privacy will become a luxury product that only the very rich can afford to buy. Privacy enhancing software products and services could also become a niche that Europe could excel in as well. Europe's better privacy protection could even become an incentive for American Netizens to use European Internet suppliers in the future.

Another critical domain that will shape the nature of cyberspace is electronic intellectual property and copyright. Professor Patricia Samuelson from UC Berkeley has described the policies of the current US administration as a "Copyright Grab", an attempt at protecting the rights of established corporate copyright holders at the expense of everybody else. The official who handles this issue in the Clinton Administration used to be the lobbyist for Hollywood in Washington D.C. and has been trying to impose the exact same policies that he used to lobby for. The US Academy of Science and several other US advisory bodies have strongly rejected such proposals, as they would entail a significant setback from current practices in information availability and use. Here also, Europe could champion policies that ensure a quality of a "commons" to cyberspace. More balanced policies should protect users, authors as well as corporate copyright holders. If Europe provided a better balance to the protection of authors and users over corporate copyright holders, it could become a preferred cyberspace publishing center. Such a development has a historical precedent in the printing industry in the 18th century, when the French monarchy used its dominant position to exert excessive control over the French publishing industry. This created a thriving publishing business in Switzerland and the Low Countries where authors such as Rousseau , Voltaire and the other "Philosophers of the Enlightenment" published most of their works from countries neighboring France.

6.2. A European Social Policy for the Information Age

However, embracing the cybereconomy as mentioned above has also a social cost. Indeed, three powerful forces converge to make unemployment one of the key issues that Europe will have to face for the next decades:

- A long term trend, already observable over at least the past two decades, points to fewer and fewer manpower needs to meet the production requirements on a global level.

- The advent of the cybereconomy will further extend this same process to the distribution and retail level

- Finally, the introduction of the Euro will further reduce the traditional options available to mitigate unemployment.

In addition to keeping or expanding to whatever extent possible traditional policies which have proven successful at reducing unemployment, new approaches and strategies to deal with social issues will have to be designed and implemented. It is important to understand that such new thinking will be required whether Europe embraces the cybereconomy or not. The European unemployment issue exists even now before Internet has become a factor. The advent of the cybereconomy just makes addressing the issue more starkly urgent.

The full-scale development of a European Social Policy for the Information Age falls beyond the scope of this study. However, one important component of it - the creative use of complementary currency systems - has now become possible thanks to the widespread availability of information technologies. In fact, it has already emerged spontaneously at the grassroots levels in every European country. The development of social capital - as opposed to financial capital - has proven time and again easier to attain by using complementary currencies instead of conventional national currencies. The author's next book "The Future of Money" addresses in more depth this issue of the relationship between different types of currencies and the creation of financial capital vs. social capital.

6.3. A Role for Complementary Currencies

We have seen that the Information Age promises to unleash in any case a whole variety of new types of non-traditional currencies, from corporate scrip to local currencies.

To traditional economic thinking, this proposal - to encourage complementary currencies, a particular form of these new non-traditional currencies - may appear at first sight unconventional or even heterodoxical. We have seen in chapter 4 that when one releases the assumption of a single national currency implicit in traditional economic thinking, a whole other way of looking at the unemployment issue becomes available.

This is not theory, as hundreds of thousands of people in a dozen different countries have pragmatically experimented with such approaches and concluded it is working for them. By encouraging the emergence of well-designed complementary currencies in Europe in parallel with the introduction of the Euro the following advantages could be gained:

It has been pragmatically demonstrated that issues of unemployment, health care and other social problems have been effectively mitigated by using complementary currencies;

Such improvements do not require additional governmental budgets or bureaucracies, on the contrary they have proven most effective when self-organizing at the grassroots level;

The New Zealand experiment has demonstrated that well-designed and managed complementary currencies do not create inflationary pressures on the official currency, on the contrary they even reduce such pressures.

Given that the introduction of the Euro significantly reduces the traditional options available to governments to address the unemployment issue, only such less conventional approaches remain available

Three different degrees of support have been proposed by which European governments could encourage the development of such new complementary currency tools: from passive tolerance to mildly and strongly supportive. The degree of support could be decided upon in

consideration of the level of unemployment in a specific region at the moment of the introduction of the Euro.

6.4. Conclusion

Electronic money should really be considered as the spearhead of a new cybereconomy. This development is the biggest mutation that the world economy is undergoing since at least one century. The Industrial Age was clearly a European creation and export.

The Information Age in contrast has been a spin-off from the Cold War technological race between the two superpowers. So far, it has therefore been primarily an American creation and export. It is not too late, but it is time, for Europe to decide to meet the challenge presented by this new economy. This Report presents some of the options available at this time for Europe to not only pick up this gauntlet, but influence the nature of the evolving cybereconomy by including in the mix a specifically European initiatives, ranging from privacy protection and electronic copyright to encouragement of grassroots social innovations using the new technologies to create a new civilization compatible with European values.

As the saying goes in Silicon Valley "The Future is in Beta", i.e. is still open to significant change and influence.

My fondest personal wish is that Europe will meet the challenge of electronic money in a creative way - one that builds on its historic strengths to create its own future.