

The New Chinese Economy: A View from Outside

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What Is the “New Economy”?

- ◆ The widespread access to, sharing of, and use of information (knowledge) in economic activities through new technologies
- ◆ The cost of information may be divided into two parts: the cost of creation and analysis of information (R&D), and the costs of collection, processing, storage, retrieval, and transmission of information--both parts are subject to increasing returns to scale
- ◆ The “New Economy” is founded on technological change which has led to huge declines in the costs of computation and information storage coupled with the huge increase in the speed of computation as well as huge declines in the cost of communication coupled with the huge increase in speed and throughput volume
- ◆ Over time, more and better information has become available faster and cheaper and to a vastly greater number of people

The “New Economy” and the Internet

- ◆ The “New Economy” is greatly facilitated by the “Internet”
 - ◆ The communication, transmission and distribution of information are no longer limited by space and time, and in particular, are not limited by national boundaries
 - ◆ Information can be accessed, analyzed and transmitted in real time and at low marginal cost
 - ◆ Much information has become a public good
 - ◆ Information flow can be targeted to specific individuals and audiences

The “New Economy” is an “Information” or “Knowledge” Economy

- ◆ Complementarity of information with tangible and intangible capital
 - ◆ The increased availability and timeliness of information greatly enhance and multiply the benefits of tangible as well as intangible capital (such as human capital, R&D capital, and knowledge capital), and vice versa--complementarity
 - ◆ Example: the installation of new software or new database on existing computers; comparison shopping through the internet
- ◆ The efficiency of the competitive market system depends on the availability of information to all economic agents on a timely basis. The information and communication technology revolution reduces the asymmetry of information among different economic agents—it thus helps to level the playing field for all economic agents and makes the competitive market more efficient
- ◆ The benefits of increasing returns to scale of knowledge capital are realized through rising globalization with the help of the new information and communication technologies

Impacts on the Microeconomy:

(1) Reductions in Transactions Costs

- ◆ Significant reductions in the transactions costs (due to more, faster, better and cheaper information), including the costs of intra-firm and inter-firm coordination
 - ◆ The costs of internal management, monitoring and control--This can facilitate both greater centralization and paradoxically greater autonomy and devolution of decision-making downward and outward
 - ◆ The costs of inter-firm coordination
 - ◆ The IT revolution enhances predictability and reliability of division of labor across firms and thus shifts the advantage to “De-verticalization”, “Out-sourcing”, and “Globalization” of supply chains
 - ◆ Reduction in transactions costs enables the exploitation of efficiencies in specific segments of the design, manufacturing, marketing and distribution process
 - ◆ Many services have become highly tradable or potentially highly tradable and can be “outsourced” globally
 - ◆ e.g., software, back-office paper work, design, quality assurance, entertainment

(2) Increases in Timeliness of Information;

(3) Reductions in Costs of Market Formation

- ◆ Significant increases in the timeliness of economically relevant information (sales, inventory, competitor's prices and new products, etc.) and decreases in the response time
- ◆ Significant reductions in the costs of market creation, expansion, differentiation, and segmentation--markets not bounded by physical space and time limitations
 - ◆ Aggregation of users/consumers to create new and diverse markets consisting of consumers who may be geographically dispersed or socioeconomically stratified
 - ◆ e.g. vegemite; vegetarians; exceptionally large and small sizes of clothing; left-handed individuals
 - ◆ Vast expansion of consumer choice
 - ◆ The ease of customization through the internet (e.g. many different choices are possible (Dell))
 - ◆ Products are built to order rather than on speculation

Implications of the New Economy

- ◆ Both the reductions in transactions costs and the timeliness of information flow expands the span of control of managers and results in the flattening of organizations
- ◆ They also encourage “de-verticalization”, “globalization” and “outsourcing”
- ◆ The “Product Cycle” has been greatly shortened--reduction in “time to market”--the average product cycle has shortened from 5 years to 12-18 months
- ◆ The rise of new markets, products, services, and business models
- ◆ Transformation of the “Old Economy” through application of the new information and communication technology--meeting the “old” needs in new ways
- ◆ The “New Economy” further facilitates globalization through the international diffusion of the information/communication technology

De-Verticalization or Fragmentation of Production

- ◆ De-Verticalization or “Fragmentation”--vertical division of labor--separation of design, manufacturing, marketing, inventory, transportation and distribution functions (generalized out-sourcing) both within and across national boundaries
- ◆ Logistics and supply chain management--managing a production process not all of which lies within a single firm
- ◆ De-verticalization depends on the possibility of standardization (uniform grading), existence of common platforms (precision, communication protocol, compatibility, etc.).
- ◆ It also depends on quality assurance (possibly by impartial third parties) and timely performance--reputational capital is key here
- ◆ However, a long-term collaborative relationship is still indispensable in sectors with rapid innovation (repeated game)

The Benefits of De-Verticalization or Fragmentation of Production

- ◆ De-verticalization and out-sourcing encourage specialization (in tasks rather the products)
 - ◆ Emphasis on “core competence” and focus on adding value
- ◆ De-verticalization and out-sourcing permit efficient sharing of resources and thus
 - ◆ Reduces the fixed costs of and hence lowers the barriers to entry--promotes competition
 - ◆ Example: the rise of “fabless” semiconductor design firms
 - ◆ Enables the realization of economies of scale and learning-by-doing effects through specialization in particular tasks (rather than products)
 - ◆ e.g., firms do not typically generate their own electricity; the semiconductor foundry business; delivery services such as United Parcel Service (UPS) and Federal Express
 - ◆ Allows the realization of the benefits (efficiency gains) of targeted incentives in specific tasks or segments of the traditional business
 - ◆ Much duplication of efforts-- “rediscovering the wheel” --can be avoided

The Concept of De-Verticalization Is Not New

- ◆ Vertical division of labor--subcontracting
 - ◆ e.g., the construction industry in developed market economies--all the “trades” (services) are traditionally performed by specialist subcontractors
- ◆ “Original Equipment Manufacture” (OEMs) in developing economies
 - ◆ Nike, Polo, Dell, Compaq, brand name products
- ◆ “Fabless” semiconductor companies and contract manufacturing
 - ◆ e.g., Taiwan Semiconductor Manufacturing Corporation, Solectron, Flextronics
- ◆ “Original Design and Manufacture” (ODMs)
- ◆ Outsourcing of services
 - ◆ e.g., processing of credit cards (many credit card issuers are nominal issuers only); information processing for financial institutions
- ◆ Can the design and marketing and manufacturing of the automobile be separated in the future?

The Story of a Super-Market

- ◆ Scanner at the checkout stand
- ◆ Direct and instantaneous communication with the supplier
- ◆ Just-in-time delivery by the supplier
- ◆ Efficient inventory maintained by the supplier
- ◆ Coordination of inventory and production by the supplier
- ◆ Savings realized by the super-market--no paper-work, no inventory, no warehouse, no trucks

The Product Cycle under the New Economy

- ◆ The shortening of the “Product Cycle”--reduction in “time to market”--the average product cycle has shortened from 5 years to 12-18 months--because
 - ◆ More and more timely information is available
 - ◆ There is less vested interest (e.g., fixed costs, inventory, labor contracts) in prolonging a product’s life time and because of competition; these fixed and quasi-fixed costs are reduced by de-verticalization and out-sourcing
 - ◆ The ease of customization and continuous improvement of the product
 - ◆ The product cycle may be manifested as substitutions and rearrangements of the supply chain, e.g., shifting from metal to plastics
 - ◆ Strategic alliances of the moment made possible by timely and reliable exchange of information

Implications of a Shortened Product Cycle

- ◆ The shortened product cycle in turn also mandates a reduction in fixed costs, and hence de-verticalization and out-sourcing
- ◆ De-verticalization and out-sourcing are also strategies for achieving rapid responsiveness and risk sharing, especially in an uncertain environment
- ◆ The “first-move advantage” is magnified by the shortened product cycle as well as the expanded possibilities for the realization of both technological and market economies of scale
- ◆ Traditional life-time employment in the same industry and product segment is no longer possible

Impacts on the Macroeconomy

- ◆ The ICT revolution through its effects on costs reduction leads to a one-time expansion of the set of production possibilities—a greater output can be produced with the same inputs
- ◆ Specialization results in lower prices, greater output, and more new varieties of products and services
- ◆ Reductions in costs translate directly into increases in productivity which in turn reduces the upward pressure on prices and keeps the rate of inflation low
- ◆ Competition from new entrants bring down prices

Impacts on the Macroeconomy

- ◆ Existing demands for goods and services are supplied by new entrants into the businesses, most of them small and medium-sized start-up firms, using new technology, rather than by old firms--
”Creative Destruction”:
 - ◆ e.g., internet bookstores wipe out real brick and mortar bookstores; internet securities trading knock out traditional stock brokerages (however, there is still a role to play--assurance of fulfillment, assumption of credit and performance risks--reputation and brand name are still important)
- ◆ However, new businesses, and hence new jobs, are created faster than old businesses and old jobs are destroyed (not a zero-sum story)
- ◆ The rise of completely new businesses
 - ◆ “Cuusoo” (Japan)--consumer participation in the design of new products
 - ◆ E.g., special suppliers of tools for left-handed individuals
 - ◆ E.g., satellite-based auto-pilot systems for automobiles

The New Economy at the Macroeconomic Level

- ◆ The severity of the business cycles have been moderated, due to:
 - ◆ Better management of the monetary policy (e.g., Taylor's rule)
 - ◆ Better control of inventories on the basis of better, faster, and more reliable information
 - ◆ The fluctuations in housing starts, a major source of business cycles, have also been moderated because of adjustable rates on mortgages and securitization of mortgages and hence the spreading of risks by the lenders to other investors
- ◆ Innovation and technological change have become easier and faster because of the ICT revolution--it remains to be seen whether this is a one-time or a permanent phenomenon
- ◆ The globalization of supply chains offers opportunities and hazards

How Has the New Economy Been Manifested in the United States?

- ◆ An increase in the rate of technical progress, or growth of total factor productivity—that is, the ability of producing output from a given quantity of inputs—over the decade of the 1990s
- ◆ A decline in the average level of changes in inventory (stocks) relative to GDP as well as in its volatility. Changes in inventory used to be a major source of business cycle fluctuations in the United States. The improvement may be attributed in part to better inventory management due to more, faster, better and cheaper information available.
- ◆ New housing starts, which also used to be a major source of business cycle fluctuations in the United States, have also been reduced in volatility in recent years, reflecting better information and faster adjustments, and institutional changes such as the introduction of adjustable-rate mortgages and securitization of mortgages.

How Has the New Economy Been Manifested in the United States?

- ◆ The rate of inflation in the United States has remained low during the past decade while the rate of unemployment has declined to levels unseen since the late 1960s, even below the so-called “natural” rate of unemployment
 - ◆ This has been made possible, in part, through the productivity gains made possible by the information and communication revolution
 - ◆ This has also been made possible, in part, because of better management of the monetary policy (by Dr. Alan Greenspan of the Federal Reserve Board) based on better and more timely information and better and faster analysis and response (e.g., Taylor’s rule)
 - ◆ Low unemployment has been achieved without kindling high inflation
- ◆ The innovations connected with the Internet have been made by small- and medium-sized start-up firms, not large, established corporations
- ◆ The U.S. stock market has boomed

How Can One Profit from the New Economy?

- ◆ The “Gold Rush” in California of 1849
 - ◆ Very few people made money from the gold but Levi Strauss made significant profits by selling picks and shovels to the miners
- ◆ The automobile revolution in the early Twentieth Century
 - ◆ There were at one time a couple of hundreds of automobile manufacturing firms in the United States--today there are only two and a half in the United States (Ford, General Motors and Daimler-Chrysler)
 - ◆ Only a few investors (e.g. Alfred Sloan, who put General Motors together) made money
 - ◆ If in the 1920s and 1930s, knowing that the automobile age is inevitable (just as the internet age is today), where should one have invested?
 - ◆ Oil, rubber (tires), and suburban real estate, road-building equipment
- ◆ The internet age
 - ◆ Is it too late to buy into Yahoo or Amazon.com?
 - ◆ The focus should be on the supporting infrastructure
 - ◆ e.g., nationwide delivery services, telecommunication networks and equipment, internet security, other enabling technologies and services

Did Amazon.com Make the Right Choice?

- ◆ A major source of added value of internet bookstores is that they do not have the brick and mortar expenses of real bookstores: rent, employees, warehouses, inventories and shipping departments. They can simply direct orders to the publishers for fulfillment
- ◆ However, Amazon.com has not been faithful to its business model and began building large warehouses and keeping stocks in the latter half of 1999
- ◆ Sure enough, if one keeps stock, one will keep the wrong stock. Amazon.com has had to write off much of its excess inventory
- ◆ Time will tell whether Amazon.com will make it
- ◆ A better strategy is probably to share part of the savings with the publishers themselves so that they will have the incentive to fulfil orders promptly. After all, the publishers themselves have a better idea of the potential sales.

Can an Internet Portal Make Enough Money to Justify the Price of Its Stock?

- ◆ Yahoo is not protected by patents or copyrights
- ◆ Yahoo does not have a natural monopoly
- ◆ Yahoo provides many free services to the users (e.g., email; driving maps)
- ◆ Can an “electronic yellow pages” make enough money?
- ◆ Is there sufficient revenue from “targeted” advertising?

The Problems of Business on the Web

- ◆ One of a kind commodities--E-Bay's problem--authentication, credit, settlement (escrow)--the importance of reputation
- ◆ Commodities
 - ◆ Spot market versus long-term relations
 - ◆ The degree of specialization
 - ◆ Standardization and quality assurance
 - ◆ Reputation
 - ◆ Credit and guarantee of settlement (including escrow services)
- ◆ Should one cannibalize one's own business?
 - ◆ Charles Schwab versus Merrill Lynch

Is the U.S. Market in High-Technology Stocks a Bubble?

- ◆ There is genuine added value in some firms
- ◆ However, there is also a bubbly quality to the stocks of the internet start-ups, many of which have no established track record
- ◆ In a sense, many of the IPOs (initial public offerings) of the past two years represent the securitization of venture capital. These firms would not have been able to go public five years ago and would have to settle for venture capital. However, their success rate should be approximately the same as venture capital. That is why many “internet” stocks are selling way below their IPO prices

The Chinese Economy Today (1)

- ◆ East Asia is the fastest-growing region in the world over the past two decades, the East Asian currency crisis of 1997-1998 notwithstanding
- ◆ China is the fastest growing country in East Asia—10% p.a. since beginning of economic reform (1979)
- ◆ China survived the East Asian currency crisis relatively unscathed
- ◆ China is one of the very few socialist countries that have made a successful economic transition from a centrally planned to a market economy--the rate of interest (the price of money) and the exchange rate are the only prices that are still administratively determined
- ◆ The private (non-state) sector accounts for 60% of GDP in 1999
- ◆ China is no longer a “shortage” economy--insufficient aggregate demand is a real possibility

The Chinese Economy Today (2)

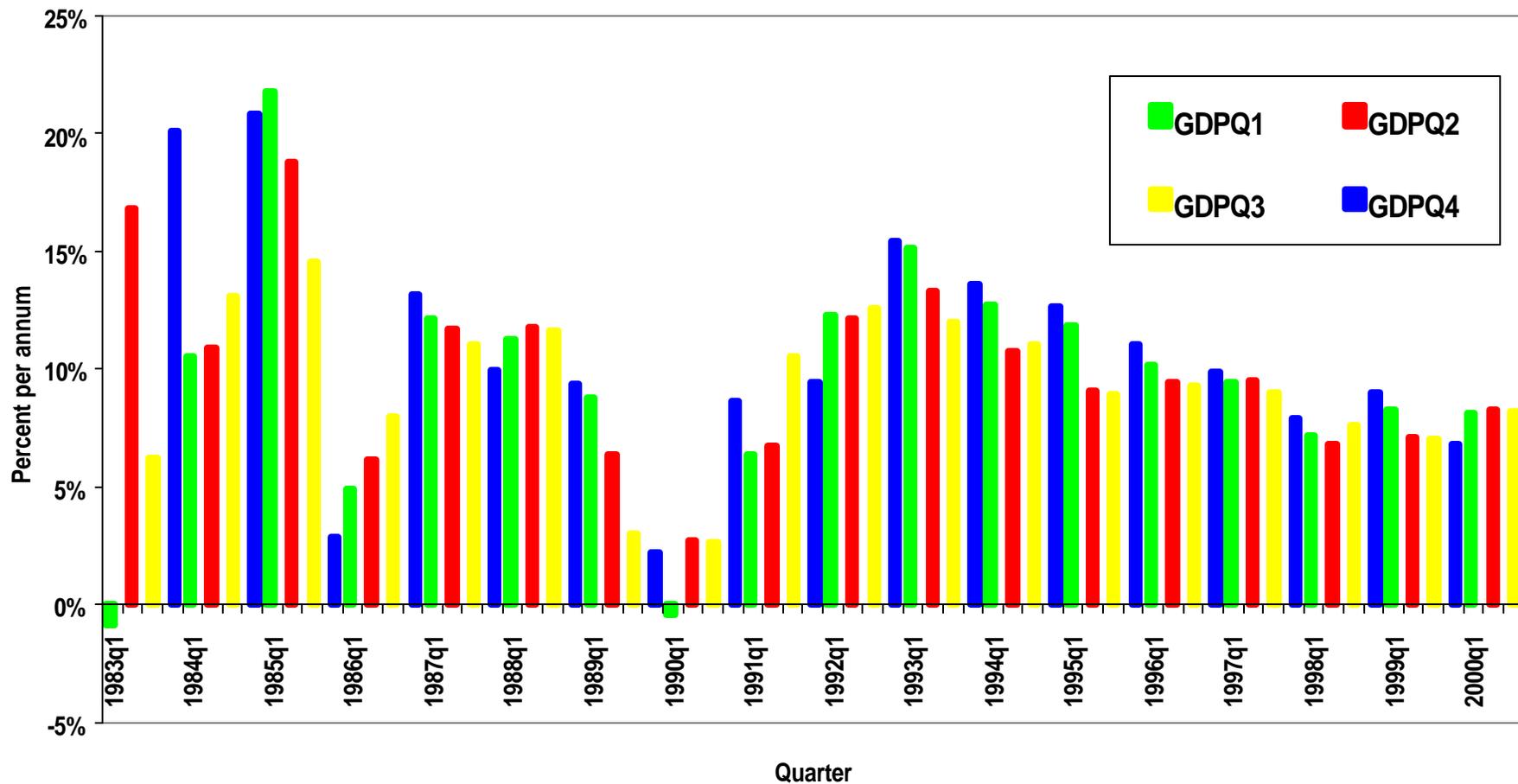
	1979	1999
	US\$ (1999 prices)	
Real GDP	172 bill.	1.005 trill.
Real GDP per capita	178	805

The Chinese Economy Today (3)

	U.S.	China
	US\$ (current prices)	
1999 GDP	9.248 trill.	1.005 trill.
1999 GDP per capita	33,857	805

The Pace of Economic Growth Has Picked Up: YoY Quarterly Rates of Growth of Real GDP

YoY Quarterly Rates of Growth of Real GDP



The Tenth Five-Year Plan (2001-2005)

- ◆ An indicative (or predictive) plan
- ◆ Doubling of real GDP between 2001 and 2010, with an implied rate of growth of 7.2% p.a.
- ◆ An inflation target of less than 3% p.a.
- ◆ An increase in the share of central government revenue in GDP (a comprehensive individual income tax)

Internet Users in the Asia/Pacific Region

Internet Users in the Asia/Pacific Region (millions)								
	1999	2000	2001	2002	2003	2004	2005	Annual Rate of Growth
China	16.5	27.2	40.4	59.4	84.5	111.6	141.3	43.0
Hong Kong	1.9	2.5	3.0	3.2	3.8	4.6	5.4	19.0
India	3.2	6.2	11.0	18.9	30.3	42.3	62.5	64.1
Indonesia	1.0	1.4	1.9	2.5	3.6	5.2	7.3	39.3
South Korea	5.3	8.1	10.7	14.1	17.7	22.1	26.8	31.0
Malaysia	1.2	1.7	2.4	3.5	4.7	6.2	8.1	37.5
Philippines	0.6	1.1	1.6	2.7	4.1	6.3	8.6	55.9
Singapore	0.8	1.0	1.3	1.5	1.7	1.9	2.4	20.1
Taiwan	4.4	5.5	6.9	8.6	10.8	12.4	15.8	23.7
Thailand	1.0	1.5	2.3	3.5	4.6	6.5	8.7	43.4
Asia/Pacific Region	66.2	94.5	128.0	173.3	231.5	295.7	374.4	33.5

Note: 1999 figures estimated and 2000-2005 figures projected by the Yankee Group.

Penetration Rates in the Asia/Pacific Region

Penetration Rates in the Asia/Pacific Region (percent)							
	1999	2000	2001	2002	2003	2004	2005
China	1.3	2.0	2.9	4.2	5.8	7.4	9.2
Hong Kong	26.9	35.6	40.6	42.5	49.6	57.7	65.3
India	0.3	0.6	1.0	1.7	2.7	3.6	5.2
Indonesia	0.5	0.6	0.9	1.1	1.5	2.1	2.9
South Korea	11.2	17.0	22.3	29.3	36.2	44.8	53.9
Malaysia	5.3	7.4	10.0	13.9	18.1	23.3	29.8
Philippines	0.8	1.4	2.1	3.3	4.8	7.2	9.5
Singapore	24.2	29.0	37.7	42.5	47.9	54.0	66.1
Taiwan	19.9	24.7	30.5	37.8	46.8	53.3	67.4
Thailand	1.6	2.4	3.5	5.1	6.6	9.1	11.7
Asia/Pacific Region	2.4	3.3	4.5	6.0	7.8	9.6	11.9

Note: 1999 figures estimated and 2000-2005 figures projected by the Yankee Group

Opportunities and Challenges

Implications for the Chinese Economy

- ◆ One-time permanent increase in potential output, hence, productivity
- ◆ The “New Economy” depends on both tangible and intangible capital--the importance of complementarity of different forms of capital (tangible, infrastructural, human, R&D, knowledge)
- ◆ The “New Economy” is here to stay
- ◆ The “New Economy” facilitates and encourages the process of “de-verticalization” or “fragmentation”, which began in 1984 as a result of the economic reform
- ◆ The need to identify, improve and sharpen “core competence” in order to survive; productivity can actually be enhanced by taking advantage of the opportunities for “de-verticalization” and “outsourcing”
 - ◆ e.g., the choice between being a manufacturer or a marketer

Opportunities and Challenges

Implications for the Chinese Economy

- ◆ The “New Economy” facilitates and encourages global division of labor--i.e., globalization of sources of supply; it also shortens the “Product Cycle”--hence new opportunities but also competitive challenges

The Possibility of Leap-Frogging

- ◆ China has the ability to leap-frog--there are no vested interests to protect; no existing businesses to be cannibalized; there can be “creation without destruction”
 - ◆ e.g., facsimile machines instead of telexes; video compact discs instead of VCRs; a new keyboard layout
 - ◆ mobile and wireless telephones instead of fixed lines;
 - ◆ debit and credit cards instead of checks;
 - ◆ internet trading of stocks and bonds;
 - ◆ E-commerce rather than traditional commerce (B2B and B2C, e.g., books and magazines)

The Possibility of Leap-Frogging

- ◆ The markets are potentially large enough in China for the benefits of economies of scale to be realized and for it to have a significant influence on future standards
 - ◆ e.g., Linux
 - ◆ wireless telephone standards (CDMA)
 - ◆ Promotion of experiments with other, non-PC-based access devices to the internet--television sets, webTV type devices, digital set-top boxes, screen phones and wireless

The Possibility of Local Adaptation

- ◆ The possibility of local adaptation--taking advantage of local conditions
 - ◆ e.g., the Legend story
 - ◆ language
 - ◆ local supply and demand conditions, e.g., stability of the voltage of the electric power supply
 - ◆ The Chinese language is uniquely suited to communication based on a graphic interface (the experience of the fax machine)
 - ◆ Set-top boxes on television sets with point and click device and numeric pad can link 400 million households to the internet
- ◆ Transformation of the “Old Economy” through the information and communication technology, especially in light of the accession to the World Trade Organization (WTO)

Policy Options for Facilitating the New Economy

Public Investments in the Physical and Virtual Infrastructure

- ◆ Traditional economy requires physical infrastructure--railroads, roads, ports, airports, power, etc.
- ◆ New economy requires, in addition, virtual infrastructure
 - ◆ Telecommunication (Telephone and internet access from every village; Fiber optic links); Wireless; National and international delivery services--United Parcel Service (UPS), Federal Express; Generic trading platforms; Enabling technologies and services (Internet service providers; portals)

Public Investments in the Legal Infrastructure

- ◆ Legalization of electronic signatures; maintenance of security in cyber space
- ◆ Enforcement of contracts; prevention and prosecution of fraud
- ◆ Protection of intellectual property rights, including patents, copyrights, brand names and trade secrets
- ◆ Maintenance of a fully integrated national market—with free flows of goods, services and capital—the equivalent of the “Interstate Commerce” clause of the the U.S. constitution
- ◆ Rationalization of taxation on the old economy and the new-- maintaining a level playing field
- ◆ Enactment of venture capital- and “angels”-friendly laws and regulations to encourage private risk capital

Public Investments in the Regulatory Infrastructure

- ◆ Maintenance of a competitive market environment with free entry and exit (use of anti-trust and fair trade laws to prevent unfair competition and monopolistic practices)
- ◆ Regulation as well as deregulation of the telecommunications sector-
 - promotion of lower and more competitive rates for universal access-
 - prevention of monopoly rents (maintenance of standards and mutual communicability and promotion of competition)
- ◆ Regulation of service providers as common carriers
- ◆ Deregulation of content providers

Public Investments in the Social and Institutional Infrastructure

- ◆ New boards/stock exchanges for high-tech and non-state-owned enterprises (Domestic versions of NASDAQ) so that “Initial public offerings (IPOs)” and listings on domestic stock exchanges can be an exit strategy for investors--high-risk ventures should be financed with equity rather than debt
- ◆ Uncertainty created by globalization of supply chains and hence global competition and shortening of “Product Cycles” necessitates
 - ◆ The establishment of a social safety net
 - ◆ Promotion of competitive, flexible, and mobile labor markets with wage rates and other compensation freely determined by market forces
- ◆ Standardization and grading; quality assurance

Public Investments in the Social and Institutional Infrastructure

- ◆ Creation and maintenance of an hospitable environment/habitat for entrepreneurs and start-up firms
 - ◆ Simplification of tax and competition laws and regulations to facilitate the establishment and operation of start-up and small and medium-sized firms which can be expected to be more nimble than large firms
 - ◆ Adoption of tax and competition laws and regulations that encourage entrepreneurship and new businesses so that new jobs may be created faster than old jobs are destroyed
 - ◆ Promotion of a culture of open communication and mobility; of acceptance of risk and failures; that enables the realization of network externalities and the benefits of networking
- ◆ Promotion of university-industry-government cooperation and collaboration

Public Investment in Human Capital

- ◆ Investment in Human Capital (formal, technical, on-the-job training, and re-training); re-orientation from firm-specificity to worker-specificity (flexibility, adaptability and re-employability); mobility (institutional and legal); network externalities and benefits from networking; accreditation, standardization, quality assurance and examinations and tests
 - ◆ Lengthening of the time for formal and general education--extension of compulsory education to 12 years; expansion of tertiary education
 - ◆ Investments in information and communication technology
 - ◆ A PC in every classroom (in every urban home)
 - ◆ New modes of education and information dissemination

Investment in Other Intangible Capital

- ◆ Investment in R&D Capital--necessary for both learning and diffusion
 - ◆ Essentiality of indigenous R&D for the successful exploitation of imported technology, e.g., new rice variety
 - ◆ The distribution of gains from technology trade and transfer is biased in favor of the innovators and the owners of intangible capital (e.g. brand names) and not the imitators
 - ◆ Licensing frequently takes the form of cross-licensing
 - ◆ R&D projects as an instrument of industrial policy (Strategic R&D)
 - ◆ Focus on development rather than basic or applied research
 - ◆ Consortium approach
- ◆ Investment in other forms of Intangible Capital (Design, Market Development, Information System and Software, Etc.)