

The Impact of the New Economy on Developing Countries

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1. What Is the “New Economy”?

- ◆ The widespread access to, sharing of, and use of information (knowledge) in economic activities through technology
- ◆ It is greatly facilitated by the “Internet”
 - ◆ The communication and distribution of information is no longer limited by space and time
 - ◆ Information is available in real time and at low marginal cost
 - ◆ Information flow can be targeted to specific individuals and audiences
- ◆ Complementarity of information with tangible and intangible capital
 - ◆ The increased flow of information greatly enhances and multiplies 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 on existing computers

2. Implications of the New Economy

- ◆ “Internet” time
 - ◆ Real time information transmission and retrieval
 - ◆ What used to take days and weeks of research is now available with a few clicks of the “mouse”
 - ◆ Real time monitoring and communication
 - ◆ Capacity for real time response
- ◆ “Internet” distance
 - ◆ Proximity and geographical location are no longer as important

Impacts on the Microeconomy

- ◆ The average product cycle has been shortened from five years to between 12 and 18 months by the reduction in the “time to market”
 - ◆ Competitive pressure from innovation is fierce
 - ◆ Products and firms cannot last forever any more
- ◆ The reduction in the cost of information transmission and communication has enabled better management control in organizations with lower cost
- ◆ The internet and the information technology revolution enhances predictability and reliability of division of labor across firms and thus shifts the advantage to “De-verticalization” and “out-sourcing”
- ◆ For the same reason, it also shifts the advantage to “Globalization” of supply chains
- ◆ Many services have become highly tradable or potentially highly tradable
 - ◆ e.g., software, back-office paper work, design, entertainment

Impacts on the Microeconomy

- ◆ Reorganization of the traditional industrial structure
- ◆ Opportunities for the exploitation and realization of economies of scale
 - ◆ Reduction of transactions costs enable the exploitation of efficiencies in specific segments of the manufacturing and distribution process
 - ◆ Much duplication of efforts--"rediscovering the wheel"--can be avoided
 - ◆ De-verticalization and out-sourcing permit efficient sharing of resources with a view of realizing scale economies
 - ◆ e.g., why firms do not typically generate their own electricity; the semiconductor foundry business
 - ◆ The "first-move advantage" is magnified by the expanded realization of economies of scale
- ◆ Down-sizing of firms
 - ◆ Outsourcing
 - ◆ Reduction of middle management
 - ◆ Small and medium-sized firms can have access to high quality services previously unavailable on the market

Impacts on the Macroeconomy

- ◆ Increases in productivity lower the cost of production and hence reduce the upward pressure on prices and keep the rate of inflation low
- ◆ 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.
 - ◆ 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)
 - ◆ The new firms will take away the business from the old firms--"Creative Destruction"
 - ◆ An environment that encourage new businesses must be created and maintained, so that new jobs are created faster than old jobs are destroyed

Impacts on the Macroeconomy

- ◆ 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

3. De-Verticalization or Fragmentation of Production

- ◆ De-Verticalization or “Fragmentation”-- Vertical division of labor-- Separation of design, manufacturing, marketing, inventory and distribution functions (generalized out-sourcing)
- ◆ Logistics and supply chain management-- managing a production process not all of which lies within a single firm
- ◆ Emphasis on “core competence”
- ◆ Focus on adding value
- ◆ Aligns incentives within the different supply segments and facilitates competition through lowering the barriers to entry (lower capital requirements)
 - ◆ e.g., semiconductor design firms

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
 - ◆ e.g., Taiwan Semiconductor Manufacturing Corporation, Solectron, Flextron
- ◆ “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 automobile design and manufacturing be separated?

Realization of the Benefits of Scale

- ◆ Vertical division of labor can greatly lower the entry cost into certain segments of the business while allowing certain other segments to take advantage of the efficiencies of economies of scale (resulting from either the technology of manufacturing or production and learning by doing and market increasing returns to scale resulting from market dominance through network or use externalities, including user-specific investment).
- ◆ The internet has greatly lowered the costs of market creation and expansion and hence the benefits of market increasing returns to scale--a market without geographical boundaries

Logistics Revolution and the Supply Chain

- ◆ Just-in-time inventory system has been used by Japanese manufacturers (mostly captive suppliers, but improves incentives)
- ◆ Quality assurance, possibly by third parties, is required
- ◆ Standardization, uniform grading, and a common platform (wafer size, resolution of equipment, software) are also needed
- ◆ Savings from consolidation of transportation and warehousing and reduction in transactions cost of communication and increases in timeliness, it also reduces the transactions cost of marketing as well as inventory control and of distribution
- ◆ Competition among suppliers and potential suppliers
- ◆ Market differentiation and segmentation create value; the ease of customization with the internet
 - ◆ e.g. marketing may be difficult to target vegetarians, who may be geographically dispersed, now all one needs is a website
 - ◆ Exceptionally large and small sizes of clothing

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 in the New Economy

- ◆ The product cycle will continue to shrink (time to market) because there is less vested interest in prolonging a product's life time and because of competition
- ◆ More and more timely information is available
- ◆ Fixed costs are reduced--“planned obsolescence” is now driven by demand
- ◆ Inventory is reduced
- ◆ The possibilities of customization
- ◆ Product cycle 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 accurate exchange of information
- ◆ Traditional life-time employment in the same industry and product segment is no longer possible

What Can Facilitate the New Economy?

- ◆ The Infrastructure
 - ◆ Traditional economy requires infrastructure--railroads, roads, ports, airports, power, etc.
 - ◆ New economy also requires virtual infrastructure
 - ◆ United Parcel Service (UPS), Federal Express; Trading platforms; Telecommunication (Fiber optic links); Enabling technologies
 - ◆ The legal infrastructure
 - ◆ Intellectual property rights
- ◆ Intangible capital--human capital; Firm-specificity versus worker-specificity (flexibility, adaptability and re-employability)
- ◆ Hospitable legal, tax and competitive environment for new firms
- ◆ A culture of open communication and mobility; acceptance of risk and failures; network externalities and the benefits of networking

Where Can One Find Profits 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
 - ◆ 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 internet infrastructure
 - ◆ e.g., Nationwide delivery services, telecommunication networks and equipment, security

Did Amazon.com Make the Right Choice?

- ◆ Not faithful to business model
- ◆ Time will tell

Is It a Bubble?

- ◆ There is genuine added value
- ◆ However, there is also a bubbly quality to the internet stocks
 - ◆ Securitization of venture capital

Implications for Developing Countries

- ◆ The “New Economy” is here to stay
- ◆ The “New Economy” facilitates and encourages globalization of sources of supply--hence new opportunities but also competitive challenges
- ◆ The “New Economy” facilitates and encourages “de-verticalization” or “fragmentation”--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 “out-sourcing”
- ◆ Developing countries have the ability to leap-frog--there are no vested interests to protect; no existing business to be cannibalized; there can be creation without destruction

Policy Options for Developing Countries

- ◆ Developing the physical, legal and cultural infrastructure for the new economy
- ◆ Investment in intangible capital
 - ◆ Investment in Human Capital (formal, technical, on-the-job training, and re-training)
 - ◆ Investment in R&D Capital
 - ◆ indigenous R&D essential, e.g., new rice variety
 - ◆ the requirement of cross-licensing
 - ◆ strategic R&D as an instrument of industrial policy
 - ◆ Investment in other forms of Intangible Capital (Design, Market Development, Information System and Software, Etc.)
 - ◆ The case for public support
 - ◆ Non-appropriability--social rate of return greater than private rate of return
 - ◆ Size distribution of firms
 - ◆ Non-availability of venture capital

The Possibility of Leap-Frogging

- ◆ Examples:
 - ◆ facsimile machines
 - ◆ mobile and wireless telephones
 - ◆ debit and credit cards instead of checks
- ◆ Building an infrastructure for the new economy
 - ◆ protection of intellectual property rights
- ◆ Maintenance of free entry and competition (anti-trust laws)

Local Adaptation

- ◆ Taking advantage of local conditions
 - ◆ language
 - ◆ local supply and demand conditions, e.g., stability of the voltage
- ◆ Uncertainty created by globalization of supply chains--competition
- ◆ Flexible labor force, social safety net