Book Review:

THE THIRD WAVE

Author: Alvin Toffler

Reviewed by: Dr. Qadar Bakhsh Baloch[*] & Dr. Nasir Kareem[**]

General Overview:

The Third Wave[1] is a book written by the sociologist and futurologist Alvin Toffler in 1980. It is sequel to the *Future Shock*[2], published in 1970, and the second in a trilogy that was completed with *Power shift: Knowledge, Wealth, and Violence at the Edge of the 21st Century*[3] in 1990. Since 1993, Toffler has collaborated with his wife Heidi on two other books, *War and Anti-War: Survival at the Dawn of the Twenty-First Century*[4] and *Creating a New Civilization: The Politics of the Third Wave* (1994).[5] Toffler in his first best-selling *Future Shock* argues that technological changes since the eighteenth century have occurred so rapidly that many people are experiencing undue stress and confusion because of their inability to adapt quickly to the strategic change. He coined the term "future shock" based on the concept of 'culture shock'[6] to describe this condition. His all other books continued to identify emerging strategic changes and explore the social, economic, and political implications of technological developments on the society.

The *Third Wave* is must read seminal eye opening account of futurology[7] and this book review is intended to whet the appetite of students of history, philosophy, sociology, and management studies who are planning to be an active part of business under the fluid environment

[*] Dr. Qadar Bakhsh Baloch, Associate Professor, Dept. of Management Sciences, Qurtuba University of Science & IT, D.I.Khan, Pakistan.

[**] Dr. Nasir Kareem, Dept. of Management Science, CECOS University, Peshawar, Pakistan

the Information Economy. The book presents an historical overview of the past two human civilizations with objectivity and projects the third one that is in the process of unfolding as change sweeps across the globe. Though the book surrounds society, culture, the media, organizations, science, and computers, but its central premise is transition of human history that had advanced to present era on the pattern of Three *Waves*. Three waves describe three different types of societies in sequential order and each wave pushes the older society and culture aside. Being nearly thirty years old *The Third Wave* may be a little out of date and a little too optimistic, but it's still the closest thing to the history of the last fifty years and a roadmap of the next hundred.

The First Wave economy was of agrarian nature that began around thousands years ago, where everyone made their own products for their own consumption and there was little or no trading between households. The people transitioned from nomadic wandering and hunting to clustering of villages and developing of social culture. The first wave survived until 1650-1750, though patches of primitivism and agricultural civilization still dominate the planet. The Second Wave, commenced in 18th century, describes an industrial society, commencing in 18th century, where machine expressed its muscles to begin Industrial Revolution and urbanization around factories. It collided with all the institutions of the past and changed the way of life of millions. Mass production led to the birth of new form of economy and adoption of new managerial concepts like: standardization, specialization, centralization, synchronization, economies of scale and corporations. To be sure, the bureaucracy and pyramid power structure of the second wave made possible many wonderful things. Consumer goods streamed through factories at an unprecedented pace and all found their way from

production centers to every nook and market niche. At the height of the second wave everything was 'mass' from mass production to mass destruction. By the end of 2nd World war, however, we began to receive signals of a gathering third wave, based not on muscles but on mind. Though owing to the revolution in information technology, 'third wave' is called as information or the knowledge age, but other socio-political drivers like individual rights, freedoms, democratization, and internationalization of trade and movements of goods and services cant be ignored. Third Wave economy is a happy view of future, which is well underway by now. The key concepts of *Third Wave*[8] are de-massification and de-centralization and consumerism. Though, by today most of the predictions of the book have taken grounds except of the hopes for the space and undersea industries that haven't panned out yet.

Review

The book contends that the world has not swerved into lunacy, and that, in fact, beneath the clatter and jangle of seemingly senseless events there lays a startling and potentially hopeful pattern. And this book is about that pattern and that hope.[9] It divides the story of the evolution of human civilization into three major phases: the agricultural revolution, the industrial revolution and the information age. Each civilization phase is denoted as a wave in the book and each phase is defined by its own ideology that is impacted by variance in technology, social patterns, information patterns and Power patterns. The strategic change in these variables brought new wave in the society pushing back the old one.[10] Through this cyclic pattern, "humanity faces a quantum leap forward. It faces the deepest social upheaval and creative restructuring of all time. Without clearly recognizing it, we are engaged in building a remarkable new civilization from the ground up... What is happening now is nothing

less than a global revolution, a quantum jump in history".[11] However, there can be no fixed time for a wave or civilization to survive before it is replaced with the ways of life inconceivable to those who came before. The agricultural revolution took thousands of years to play it out, while the rise of industrial revolution took a mere three hundred years. Today history is even more accelerative, and it is likely that the Third Wave will sweep across history and complete itself in a few decades.[12] This new civilization, as it challenges the old, will topple bureaucracies, reduce the role of nation-state and give rise to semi-autonomous economies in a post –imperialist world, heal the breach between producer and consumer giving rise to 'persumer' economy.

Waves: Salient Features

The First Wave: During the First Wave people stayed in one place and developed a sense of cyclical times that repeated it with cycles of moons, crops, and seasons. Everyone worked on the farm and people were generalists able to do many things. First Wave civilization's population could be divided into two categories; the primitive and the civilized. The primitive peoples lived in small bands and tribes and subsisted by gathering, hunting, or fishing. The civilized world, by contrast, was precisely that part of the planet on which most people worked on the soil. Wherever agriculture arose, civilization took root. All societies: primitive, agricultural, or industrial used energy; they made things and distributed those. In all societies the energy system, the production system, and the distribution system are interrelated parts of the system as a whole. Apparently different in facial make up, all the three civilizations hold land as the basis of economy, life, culture, family structure, and politics. In all of them, life was organized around the village and birth determined one's position in life. In all of them, a simple

division of labor prevailed and a few clearly defined castes and classes arose: nobility, priesthood, warriors, helots, slaves or serfs. In all of them, power was rigidly authoritarian. And in all of them, the economy was decentralized, so that each community produced most of its own necessities.[13]

Agricultural civilization, the civilization spread by the First Wave begun sometime around 8000 B.C. and dominated the earth unchallenged until around A.D. 1650-1750. During its dominance there were occasional hints of things to come. There were embryonic mass-production factories in ancient Greece and Rome. Oil was drilled on one of the Greek islands in 400 B.C. and in Burma in A.D. 100. Vast bureaucracies flourished in Babylonia and Egypt. Great urban metropolises grew up in Asia and South America. There was money and exchange. Trade routes crisscrossed the deserts, oceans, and mountains. Corporations and incipient nations existed. There was even, in ancient Alexandria, a startling forerunner of the steam engine.[14] Yet nowhere was there anything that might remotely have been termed an industrial civilization. These glimpses of the future, so to speak, were mere oddities in history, scattered through different places and periods. They never were brought together into a coherent system, nor could they have been. Until 1650-1750, therefore, we can speak of a First Wave world. Despite patches of primitivism and hints of the industrial future, agricultural civilization dominated the planet and seemed destined to do so forever. Key features of the First Wave Civilization were:

- The land was the basis of economy, life, culture, family structure, and politics. The economy was decentralized and life was organized around the village. The simple division of labor prevailed defining a few castes and classes: nobility, priesthood,

warriors, helots, slaves or serfs. In all of them, power was rigidly authoritarian. In all of them, birth determined one's position in life.

- New types of conflicts arose among the farmers; who owned which land? Who got to use the available water? The community developed laws and designated people to enforce them. How did they pay for the laws, the protection, or the land? Generally, they taxed what was valuable, paying a large portion of their crops to a local strongman.
- Sources of Power & Energy: First Wave civilization drew their energy from renewable living batteries like: human and animal muscle-power or from sun, wind, and water. Forests were cut for cooking and heating. Animals pulled the plow. As late as the French Revolution, it has been estimated, Europe drew energy from an estimated 14 million horses and 24 million oxen.[15]
- Inventions: First Wave societies had relied on "necessary inventions like winches and wedges, catapults, winepresses, levers, and hoists that were chiefly used to amplify human or animal muscles.[16]
- Commerce & Trade: In First Wave societies, goods were normally made by handcraft methods. Products were created one at a time on a custom basis. The same was largely true of distribution. It is true that merchants in the widening cracks of the old had built up large sophisticated trading companies feudal order in the West. These companies opened trade routes around the world, organized convoys of ships and camel caravans. They sold glass, paper, silk, nutmeg, tea, wine and wool, indigo and mace. However, wretched communications and primitive

transport drastically circumscribed the market. These small-scale shopkeepers and itinerant vendors could offer only the slenderest of inventories, and often they were out of this or that item for months, even years, at a time. Even as late as the sixteenth century, according to Fernand Braudel, whose historical research on the period is unsurpassed, the entire Mediterranean region from France and Spain at one end to Turkey at the other supported a population of sixty to seventy million, of which 90 percent lived on the soil, producing only a small amount of goods for trade. Writes Braudel, "60 percent or perhaps 70 percent of the overall production of the Mediterranean never entered the market economy." And if this was the case in the Mediterranean region, what should we assume of Northern Europe, where the rocky soil and long cold winters made it even more difficult for peasants to extract a surplus from the soil?

- Communication: All human groups, from primitive times to today, depend on face-to face, person-to-person communication. But systems were needed for sending messages across time and space as well. The ancient Persians are said to have set up towers or "call-posts," placing men with shrill, loud voices atop them to relay messages by shouting from one tower to the next. The Romans operated an extensive messenger service called the *cursus publicus*[17]. Between 1305 and the early 1800's, the House of Taxis ran a form of pony express service all over Europe. By 1628 it employed twenty thousand men. Its couriers clad in blue and silver uniforms, crisscrossed the continent carrying messages between princes and generals, merchants and moneylenders.

- Product & Consumer Market System: Until the industrial revolution, the vast bulk of all the food, goods, and services produced by the human race was consumed by the producers themselves their families, or a tiny elite who managed to scrape off the surplus for their own use. In most agricultural societies the great majority of people were peasants who huddled together in small, semi-isolated communities. They lived on a subsistence diet, growing just barely enough to keep themselves alive and their masters happy. Lacking the means for storing food over long periods, lacking the roads necessary to transport their product to distant markets, and well aware that any increase in output was likely to be confiscated by the slave-owner or feudal lord, they also lacked any great incentive to improve technology or increase production. Commerce existed, of course. We know that small numbers of intrepid merchants carried goods for thousands of miles by camel, wagon, or boat. We know that cities sprang up dependent on food from the countryside. By 1519, when the Spaniards arrived in Mexico, they were astonished to find thousands of people in Tlatelolco engaged in buying and selling jewels, precious metals, slaves and sandals, cloth, chocolate, ropes, skins, turkeys, vegetables, rabbits, dogs, and pottery of a thousand kinds.[18]
- Three innovations set the stage for the Second Wave. Firstly, Accurate clocks (usually each town could afford one, and placed it in a tall tower for visibility) permitted the coordination of activities to a degree not possible before. Secondly, the printing press permitted large-scale, accurate duplication and transmission of information across space and time. Literacy

became a new skill. Thirdly, the quest for farm implements led to new developments in metallurgy, notably iron and steel.

The Second Wave

The Industrial Revolution took three hundred years to mature and since then all Second Wave societies accelerated their economy by using energy from irreplaceable fossil fuels through dipping into the earth's energy reserves i.e. coal, gas, and oil. And all Second Wave societies that built towering technological and economic structures on the assumption that cheap fossil fuels would be endlessly available. A shift to nonrenewable energy sources: coal, gas, and oil made mass production possible. Mass production required giant pools of capital. To encourage investors, the concept of limited liability was introduced and the corporation was created. In one Second Wave country after another, social inventors, believing the factory to be the most advanced and efficient agency for production, tried to embody its principles in other organizations as well. Schools, hospitals, prisons, government bureaucracies, and other organizations thus took on many of the characteristics of the factory; its division of labor, its hierarchical structural and its metallic impersonality, in other words, bureaucracy.

The Second Wave gave technology sensory organs, creating machines that could hear, see, and touch with greater accuracy and precision than human beings. More important, it brought machines together in interconnected systems under a single roof, to create the factory and ultimately the assembly line within the factory. "Industrialism was more than assembly lines. It was a many-sided social system that touched every aspect of human life and attacked every

feature of the First Wave past... it put the tractor on the farm, the typewriter in the office, the refrigerator in the kitchen. It produced the daily newspaper and the cinema.

During First Wave civilization, information was simple and usually conveyed orally and all communication channels were reserved for the rich and powerful only. Industrialization, however, required the tight coordination of work done at many locations at different levels of hierarchy. Second Wave technology and factory mass production required massive movements of information that the old channels simply could no longer handle. This gave rise to the postal service, to memos, to the telephone, telegraph, and two- way radio. By 1837 the British Post Office was carrying not merely messages for an elite but some 88 million pieces of mail a year.[19] There also arose a demand for the distribution of information from one source to millions of people. Hence, mass media and mass advertising arose. The mass circulation newspaper and magazine became a standard part of life. Railroads, highways, and canals opened up the hinterlands. Custom distribution gave way to the mass distribution and mass merchandising that became as familiar and central a component of all industrial societies as the machine itself. What we see, therefore, if we take these changes together, is a transformation of what might be called the 'techno-sphere'.[20]

Industrialization required mobility from people. The so-called nuclear family: father, mother, and a few children, with no encumbering relatives became the standard, socially approved modern model in all industrial societies. The nuclear family became an identifiable feature of all Second Wave societies, built on the factory model, mass education taught overtly: basic reading, writing, and arithmetic, a bit of history and

other subjects. But, the covert curriculum aimed at producing productive and obedient workers that included three courses:

- One in punctuality, to develop worker to be on time especially assembly-line hands.
- One in obedience, to teach workers take orders from a management hierarchy without questioning.
- And one in rote, repetitive work that demanded men and women to be prepared to perform repetitious work at machines or in offices.

As recently as 1800 there were only 335 corporations in the United States, most of them were devoted to quasi-public activities such as building canals or running turnpikes.[21] The rise of mass production changed all this. Second Wave technologies required giant pools of capital beyond the means of a single individual. Proprietors or partners were reluctant to sink their investment in vast or risky ventures. To encourage them for investment, the concept of limited liability was introduced. If a corporation collapsed, the investor stood to lose only the sum invested and no more. This innovation opened the investment floodgates. Moreover, the courts treated the corporation as an "immortal being" meaning it could outlive its original investors. This meant, in turn, that it could make very long-range plans and undertake far bigger projects than ever before. By 1901 the world's first billion-dollar corporation United States Steel with unimaginable concentration of assets was appeared in the business world. By 1919, large corporations became an in-built feature of economic life in all the industrial nations, including socialist and communist societies. Together these three; the nuclear family, the factory-style school, and the giant corporation became the defining social institutions of all Second Wave societies.[22]

Schools, hospitals, prisons, government bureaucracies, and other organizations thus took on many of the characteristics of the factory, its division of labor, its hierarchical structure and its mechanic impersonality. Even in the arts we find some of the principles of the factory. Instead of working for a patron, as was customary during the long reign of agricultural civilization, musicians, artists, composers, and writers were increasingly thrown on the mercies of the marketplace. More and more they turned out "products" for anonymous consumers. Concert halls began to crop up in London, Vienna, Paris, and elsewhere. With them came the box office and the businessman who financed the production and then sold tickets to culture consumers. The more tickets he could sell, naturally, the more money.

Human life was split into two halves: production and consumption. *'Until the industrial revolution, the vast bulk of all the food, goods, and services produced by the human race was consumed by the producers themselves [or] their families'.*[23] The Second Wave violently changed this situation. It created a situation in which the overwhelming bulk of all food, goods, and services were destined for sale, barter, or exchange. It virtually created a civilization in which almost no one, not even a farmer, was self-sufficient any longer. Everyone became almost totally dependent upon food, goods, or services produced by somebody else.[24] In short, industrialism broke the union of production and consumption, and split the producer from the consumer. The cleavage between these two roles producer and consumer created at the same time a dual personality. The very same person who, as a producer, was taught by family, school, and boss to be disciplined, controlled, restrained, obedient, to be a team player, was simultaneously taught (as a consumer) to be a totally different kind of person.[25]

The Second Wave brought with it a redefinition of God, of justice, of love, of power, of beauty. It stirred up new ideas, attitudes, and analogies. It subverted and superseded ancient assumptions about time, space, matter, and causality. A powerful, coherent worldview emerged that not only explained but justified Second Wave reality.[26] This worldview was based on three deeply intertwined beliefs:

- Nature is an object waiting to be exploited. (Earlier cultures accepted poverty as a part of the harmony of mankind with the surrounding ecology.)
- Humans are not merely in charge of nature; they are the pinnacles of a long process of evolution, of natural selection... "Social Darwinism." (a rationalization for imperialism).

Salient Features of the Second Wave Society: The main components of the Second Wave society are nuclear family, factory-type education system and the corporation. Toffler writes: "The Second Wave Society is industrial and based on mass production, mass distribution, mass consumption, mass education, mass media, mass recreation, mass entertainment, and weapons of mass destruction. You combine those things with standardization, centralization, concentration, and synchronization, and you wind up with a style of organization we call bureaucracy." "Every civilization has a hidden code--a set of rules or principles that run through all its activities... As industrialism pushed across the planet, its unique hidden design became visible. It consisted of a set of interrelated principles that programmed the behavior of millions. Growing naturally out of the divorce of production and consumption, these principles affected every aspect of life from sex and sports to work and war".[27]

1. Standardization: Usually associated with mass production, few people notice that we have applied this principle to almost every aspect of life: standardized tests, mass education, pay scales, lunch hours, holidays, mass media, weights and measures, currency, prices (as opposed to negotiation), language, leisure activities, lifestyle.[28]

2. Specialization: The old-style workman, performing all the necessary operations by himself was replaced with the specialist at the work place. Adam Smith wrote, a jack-of-all-trades could turn out only a handful of pins each day, and by contrast, a 'manufactory' (he had visited) in which the eighteen different operations required to make a pin were carried out by ten specialized workers, each performing only one or a few steps. Together they were able to produce more than forty-eight thousand pins per day--over forty-eight hundred per worker.[29] Specialization brought the emergence of the professions. "Whenever the The pin story was repeated again and again on an even-larger scale in the factories on the one hand and critics regarded that highly specialized repetitive labor as act of dehumanizing the worker on the other. “By the time Henry Ford started manufacturing Model Ts in 1908 it took not eighteen different operations to complete a unit but 7,882. In his autobiography, Ford noted that of these 7,882 specialized jobs, 949 required "strong, able-bodied, and practically physically perfect men," 3,338 needed men of merely "ordinary" physical strength, most of the rest could be performed by "women or older children," and, he continued coolly, "we found that 670 could be filled by legless men, 2,637 by one-legged men, two by armless men, 715 by one-armed men and 10 by blind men."[30] In short, the specialized job required not a whole person, but only a part. No more vivid evidence that overspecialization can be brutalizing has ever been adduced. A practice, which critics attributed to capitalism, however,

became an inbuilt feature of socialism as well. For the extreme specialization of labor that was common to all Second Wave societies had its roots in the divorce of production from consumption.

3. Synchronization: Second Wave people dealt with time differently. In a market-dependent system time equals money. Expensive machines cannot be allowed to sit idly, the high cost of machinery and the close interdependence of labor required a much more refined synchronization. "If one group of workers in a plant was late in completing a task, others down the line would be further delayed. Thus punctuality, never very important in agricultural communities, became a social necessity, and clocks and watches began to proliferate.[31] "Not by coincidence, children in industrial cultures were taught to tell time at an early age".[32] Social life, too, became clock-driven and adapted to machine requirements. Certain hours were set-aside for leisure. Standard-length vacations, holidays, or coffee breaks were interspersed with the work schedules. Hence, men became the most conditioned to clock- time. Women, primarily engaged in non-interdependent housework, worked to less mechanical rhythms. Second Wave husbands continually complained that their wives kept them waiting, that they had nor regard for time, that it took them forever to dress, that they were always late for appointments.[33] (Though the husbands of contemporary age are not facing different behavior)

4. Concentration of Energy, Money, and Power: Society became almost totally dependent on highly concentrated deposits of fossil fuel. The wave also concentrated population, stripping the countryside of people and relocating them in giant urban centers.[34] Work was concentrated in the factory, poor were concentrated in ghettoes whereas, Poor in First Wave societies used to live with their relatives. The

education of children was concentrated in schools whereas, in First Wave societies, children were educated in the home, and then by tutors living with the family, or by the local clergyman. “The early nineteenth century, in fact, has been called the time of the great incarcerations--when criminals were rounded up and concentrated in prisons, the mentally ill rounded up and concentrated in 'lunatic asylums', and children rounded up and concentrated in schools, exactly as workers were concentrated in factories".[35] Concentration production continued to operate as the Second Wave has become stronger. There were only three major auto companies in the U.S. Two Japanese firms produce all the VCR's in the world. In each area of production aluminum, beer, cigarettes, breakfast foods, etc. three to five companies produce almost all of it.[36]

5. Maximization: The Second Wave created an "infatuation with bigness and growth. 'Big' became synonymous with 'efficient' and maximization became the key principle.[37] The workers and managers of Matsushita Electric Company in Japan, chant this song every morning when they exercise together:

"...Doing our best to promote production, Sending our goods to the people of the world, Endlessly and continuously, Like water gushing from a fountain. Grow, industry, Grow, Grow, Grow! Harmony and sincerity! Matsushita Electric!”[38]

- By 1960, the fifty largest corporations in the United States employed an average of 80,000 workers each.[39]
- By 1970, AT&T, by itself, employed 956,000 people. This meant, at an average household size of 3.3, well over [three million] people were dependent upon paychecks from this one company alone.[40]

6. Centralization: Centralization was practiced in Business and politics alike. In business the early railroad managers standardized technologies, fares, schedules and synchronized operations over hundreds of miles. The new specialized occupations and departments were created and concentrated capital, energy, and people[41]. And to accomplish all this new forms of organization based on centralization of information and command were created.[42] The pressures towards political centralization were even stronger and industrialization pushed the political system towards greater centralized, increasing government power and responsibilities and monopolizing more and more decision-making.[43]

7. Imperialism: Like other civilizations, Second Wave civilization exploited the cheap resources of the First Wave countries. For the Industrial World, First Wave civilization, no matter how refined it was, regarded as backward and underdeveloped thus their colonization was justified. It was the rapid and massive march of the imperialism across colonies that exploited their raw resources and consumer market and brought wealth for the Europeans on a scale never seen before. In 1492 when Columbus first set foot in the New World, Europeans controlled only 9 percent of the globe. By 1801 they ruled a third, by 1880, two third and by 1935 Europeans politically controlled 85 percent of the land surface of the earth and 70 percent of its population.[44]

At the end of the Second World War, by contrast, the United States stood as a chief creditor nation in the world, filled the power vacuum and stepped up to gain economic control of much of the world by the creation of three institutions[45]:

- International Monetary Fund (IMF)--compelled its member nations to peg their currency to the American dollar or to gold (most of which was held by the U.S.).

- The World Bank--provided funds to rebuild after the war, and also to build further infrastructure in third-world countries for the more efficient movement of raw materials and agriculture export to the Second Wave nations.
- General Agreement on Tariffs and Trade (GATT)--liberalized trade, making it difficult for the poorer, less technologically advanced countries, to protect their tiny fledgling industries.

8. Behavioral Change: These underlying beliefs, taught to children of industrialization, led to the following patterns of behavior:

- Time-obsession, always glancing at their watches. This time-consciousness was necessary for the synchronization required in industrial systems.[46]
- A spatially extended culture. Agriculture had required permanent settlements. Industrialism caused vast populations to migrate in search of jobs. Huge, teeming populations were compressed into booming industrial centers. The entire landscape was dramatically re-worked.
- Emphasis on precise measurement. Just as time had to be precisely used to coordinate activities, so measurement of space and resources had to be measured by common standards. "A day's ride" was no longer an adequate measure of distance.
- An "atomistic" view of reality. There was a deliberate assault on the notion of oneness. To facilitate industrialization, people had to be torn loose from their extended families and the church. "Industrial capitalism needed a rationale for individualism... The person was no longer merely a passive appendage of tribe, caste, or clan but a free, autonomous individual. Each individual had

> the right to own property, to acquire goods, to wheel and deal, to prosper, to starve according to his or her own active efforts" [47]

The Third Wave: New Synthesis

Third Wave is the post-industrial society, which has already started thundering the globe. Since late 1950s most countries are moving away from a Second Wave Society into what Toffler would call a Third Wave Society. He coined many words to describe it and mentions names invented by others, such as the Information Age. The third wave is based on muscle and not on mind. It is what we variously call the information or the knowledge age, and while it is powerfully driven by information technology, it has co-drivers as well, among them social demands worldwide for greater freedom and individuation. Just as manufacturing took birth out of the agricultural era, similarly information is out come of manufacturing era. The huge companies and military organizations needed to track what they had, what they were doing, and what they were spending. These new tools amplified our senses and memories, rather than our strengths. Radar systems warn us of incoming missiles, robot calipers detect tiny variations in ball bearings, and CD-Roms store our accumulated knowledge. Today there is abundance of information rather we are suffering from information overload, and too often, our systems deliver deafening noise without meaning. In future we would need 'world information order' like, new world economic or political orders. "For Third Wave civilization, the most basic raw material of all--and on that can never be exhausted--is information... With information becoming more important than ever before, the new civilization will restructure education, redefine scientific research and, above all, reorganize the media of communication... Instead of being culturally dominated by a few mass media, Third Wave civilization will rest on

inter- active, de-massified media, feeding extremely diverse and often highly personalized imagery into and out of the mind- stream of the society."[48] "The giant centralized computer with its whirring tapes and complex cooling systems--where it still exists--will be supplemented by myriad chips of intelligence, embedded in one form or another in every home, hospital, and hotel, every vehicle, and appliance, virtually every building-brick. The electronic environment will literally converse with us".[49] To operate these factories and offices of the future, Third Wave companies will need workers capable of discretion and resourcefulness rather than rote responses. To prepare such employees, schools will increasingly shift away from present methods still largely geared to producing Second Wave workers for highly repetitive work. The most striking change in the Third Wave Civilization, however, will probably be the shift of work from both office and factory back in to the home.[50]

Salient Characteristics of the Third Wave Society

Though the Third Wave society as foreseen is still emerging, with the dramatic transitions of the past four decades several distinguishing features were posed as characteristic of this new society and these features include:

- New Technologies: The new technologies of the Third Wave will give rise to dynamic new industries with quantum electronics, information theory, molecular biology, oceanic ecology, and the space sciences. The change in industrial productivity would be enhanced via computers, data processing, aerospace, sophisticated petrochemicals, semiconductors, advanced communications, solid-state physics, systems engineering, artificial intelligence, fuzzy logic, polymer chemistry and diversified and renewable, energy sources.

- Space Industry: Third Wave will give birth to the space industry. "Despite delays, five space shuttles may soon be moving cargo and people back and forth between the earth and outer space on a weekly schedule. The impact of this is as yet underestimated by the public, but many companies in the United States and Europe regard the "high frontier" as the source of the next revolution in high technology and are acting accordingly".[51]
- Pushing in to Sea: The first historic wave of social change on earth came when our ancestors ceased to rely on foraging and hunting, and began instead to domesticate animals and cultivate the soil. We are now at precisely this stage in our relationship to the seas. Sea can provide treasures for humanity. It can give: enough protein could be grown in the sea to end world hunger, provide oil reservoirs.[52]
- The Gene industry: Brightness of the genetics is doubling with rapid speed. We can drastically improve the production of food, wood, wool, and other natural goods. We could biologically alter workers to fit job requirements, clone soldiers to do our fighting and grow reserve organs for ourselves.[53]
- De-massification of the Media: The new media is not "mass"; instead it is specialized, aimed at small, special interest, regional, or even local markets. Cable systems are being designed for two-way communication for even more refined customization. "All these different developments have one thing in common: they slice the mass television public into segments, and each slice not only increases our cultural diversity, it cuts deeply into the power of the networks that have until now so completely dominated our imagery".[54] As the quantity of information

available to people expands, they become less and less able to cope with it. People fall back to paying attention to only what is important to them. Hence we see the loss of readership of newspapers and mass magazines, and the loss of viewers of the generic television channels. Instead, we see a rise in the number of specialty channels appealing to narrow segments of the population. Likewise, mini-circulation specialty weekly newsletters and magazines are explosively increasing. One problem this trend presents is that fewer and fewer people seek the larger picture. The over-supply of information has caused them to settle for blips of information, which they then attempt to string together in a sensible manner to account for changes in their environment.

- A New Social Memory: "Twice before in history humankind has revolutionized its social memory. Today, in constructing a new info-sphere, we are poised on the brink of another such transformation".[55] Originally human groups stored their shared memories in the minds of individuals like tribal elders, wise men, etc. The Second Wave smashed the memory barrier by spreading mass literacy. Now systematic records could be kept. Libraries and museums were built. By increasing the store of cumulative knowledge, it accelerated all the processes of innovation and social change. Today we are about to make another quantum leap. With massive files of information on mainframes, with a PC in almost every person's hands, we are recording the activities of the civilization in fine-grain detail, and we have random access to the records.

- Family System: In the First Wave, we looked for mates who were strong enough to help make a living on a farm. In the Second Wave, we came to look for a mate we loved--companionship, sex, warmth, and support. What we are currently witnessing is the demise of the nuclear family and the emergence in its place of a diversity of family forms. The "nuclear family" which was created and idealized by the Second Wave is falling apart, because the Second Wave industrial complex system is falling apart. If we really want to maintain the nuclear family, here's what we would have to do:
    - Freeze all technology in its Second Wave stage to maintain a factory-based, mass-production society.
    - Block the rise of the service and professional sectors in the economy. White-collar, professional, and technical workers are less traditional, less family-oriented, more intellectually and psychologically mobile than blue-collar workers.
    - Forcibly drive women back into the kitchen. Reduce wages for those who insist on working. The nuclear family has no nucleus when there are no adults left at home.
    - Slash the wages of young workers to make them more dependent, for a longer time, on their families.
    - Ban contraception. This makes for independence of women and for extramarital sex, a notorious lossener of nuclear ties.
- The rolling back of the standardization of Industrial-Era, as exemplified in the one-size-fits-all approach typical of

institutions of this era, such as the education system, factories, governments, mass media, high volume mass production and distribution, etc.

- The attack on the nation-state from outside and inside would eventuality lead to rise of regional interests and the progressive devolution of the nation-state itself and the rise of powerful non-national entities: IGO's, multinational corporations, religions with global reach, and even terrorist organizations or cartels.
- The eclipsing of manufacturing and manufacturing goods by knowledge-production and information processing as the primary economic activity and primary determinant of power and its distribution.
- The emergence of various high technologies, such as cloning, global communications networks, nano-technology, etc.
- A transformation of democracy, from polling at the election booth, toward a more direct interaction between the government and its populace. The trend toward on-line voting in the United States, following the election crisis of 2000, may be seen as a first step in this direction.
- The key to a Third Wave civilization is flexibility. People work when they want, where they want, and for whom they want. These are all traits that are becoming more common in traditional industries. Flextime, tele commuting, and stock options all fit very nicely into this future. And they are all features we should look for in prospective companies.
- The Second Wave featured economies of scale, limited by decreasing returns. The Third Wave economy is different because of the network economy: as the size of the network

grows, the price of the device falls to near-zero, but the value of the device climbs astronomically because of it's connections.

- Changing Face of Corporations and Organization Behavior: There is a drastic speed-up in the pace of business. An accelerating wave of change, pushed by the coming Third Wave, is causing disorientation, frustration, and increased mistakes on the part of managers. The big business corporation of the industrial era (226) Just like families, the mass media, and schools, corporations are facing drastic changes. People are demanding a new definition of what corporations are and what they do. They want to see more responsibility and more accountability, "not merely for its economic performance but for its side effects on everything from air pollution to executive stress. New code of organization behavior likely to be shaped, would be:
    - Fading traits of punctuality and synchronization at work place will witness operationalization of flextime, increased night work and people will become more willing "to settle for a smaller paycheck in return for time to pursue their own hobbies, sports, or religious, artistic, or political interests.
    - Flexible schedules will require new services to keep track of friends and family, standardization will disappear and decentralization with new management techniques like" matrix" organizations where you have more than one boss will become routine.

- National economies will break up into regional economies, loosing national culture and rise in regional culture.
- Energy demand would be spread out, making it easier to use solar, wind, and other alternative energy technologies. Business growth of auto industry, and oil companies would be hurt and electronics industry, computer companies, and the communications industries would flourish.

- The society will not be child-centered; motherhood will be diminished and children will be given growing responsibility from an early age. Education will become interspersed and interwoven with work, and will be more spread out over a lifetime.
- On the job, the ability to accept responsibility, to adapt swiftly to change, and to be sensitive to your fellow workers will be prized. Blind obedience on the job will be penalized. Independent thinking, questioning of authority, talking back will be rewarded. Self-reliance and the ability to do things with one's own hands will become prestigious.

Conclusion:

The basic thesis holds that human progress, despite the many horrors of history our species has survived and spread over the entire planet. Many predictions that Toffler made around 30 years before have gain reality and many have yet to be seen. We do not want to think that the Third Wave civilization we are entering now is going to be the last one on the Earth. Our children and the children of our children have the same right to leave and enjoy their lives as we do now. We are the ones who have to

make sure through the knowledge and self-developing tools that the human history will not stop today and the shift into another era will be completed. The review of the book marks its conclusion with the reproduction of a summarized comparison in the following table:

Toffler's Waves	**Agricultural**	**Industrial**	**Technological**
Key Commodity	Land	Capital	Data
Techno Sphere Energy	Man and animals	Fossil	Bio-Tech
Technology	Widgets	Electromechanical	Digital/Genetic
Production	Crafted/Self Use	Mass/Exchange	Prosumptive
Distribution	Restricted	Mass	Specialized
Marketing	1:1/ Barter	Product-centric	Customer-centric
Information	Interpersonal	Mass-Mediated	Interactive
Socio-Relationships	Spiritual	Contractual	Mutual
Business	Individual/ Partnership	Corporation/ Bureaucratic	Conglomerate/ Ad Hoc
Family	Extended	Nuclear	Expanded
Education	Elitist	In Mass/ Standardized	Specialized/ Life-Long
Power Authority	Inherent	Elected	Semi-direct

End Notes:

[1] Alvin Toffler, *The Third Wave*, London, Pan Books Ltd, 1981
[2] Alvin Toffler, *Future Shock*, New York, Random House, 1970
[3] Alvin Toffler, *Power shift: Knowledge, Wealth, and Violence at the Edge of the 21st Century*, Bantam Books, 1991
[4] Alvin Toffler, War and Anti-War: Survival at the Dawn of the Twenty-First Century, Boston: Little, Brown and Company, 1993
[5] Alvin Toffler, *Creating a New Civilization: The Politics of the Third Wave*, Turner Pub, 1994
[6] The term, culture shock, was introduced for the first time in 1958 to describe the anxiety produced when a person moves to a completely new environment. This term expresses the lack of direction, the feeling of not knowing what to do or how to do things in a new environment, and not knowing what is appropriate or inappropriate.
[7] Futurology is the science, art and practice of postulating possible, probable, and preferable futures and the worldviews and myths that underlie them. The subject thus seeks a systematic and pattern-based understanding of past and present, and to determine the likelihood of future events and trends.
[8] The term 'Third Wave' is similar to the terms like; global village, electronic era, information age etc.
[9] Toffler, *The Third Wave, opcit.p.15*
[10] ibid. P.19
[11] Ibid.p.23
[12] Ibid. P.24
[13] Ibid. p.35
[14] Ibid. p.36
[15] Ibid. P.39
[16] Ibid. P. 40
[17] Ibid. P.47
[18] Ibid. P.52
[19] Ibid. P.47
[20] Ibid. P.41
[21] Ibid. P.44
[22] Ibid. P.45
[23] Ibid. P.51
[24] Ibid. P. 52-53
[25] Ibid. P.56
[26] Ibid. P.110
[27] Ibid. P. 46
[28] Ibid. pp. 60-62
[29] Ibid. P.63
[30] Ibid. P.63
[31] Ibid. P.65
[32] Ibid
[33] Ibid. P.68

[34] Ibid. P.67
[35] Ibid
[36] Ibid. pp. 67-68
[37] Ibid. p.68
[38] Ibid. P.68
[39] Ibid. P.69
[40] Ibid
[41] Ibid. P.71
[42] Ibid
[43] Ibid. P.72
[44] Ibid. P.103
[45] Ibid. pp. 104-105
[46] Ibid. P. 115
[47] Ibid. p.123
[48] Ibid. p.363
[49] Ibid. p.362
[50] Ibid. p.363
[51] Ibid. P. 153
[52] Ibid. P.155
[53] Ibid. PP. 157-159
[54] Ibid. PP. 175-176
[55] Ibid. P.187