

The Music Industry
at the Window of Opportunity
Generated at the Kondratiev IV/V Interface
at 1998 to 2003

A Research Report
prepared in partial completion of the requirements of
HUFA 529, Organization-Environment Interaction
at March AFB, Moreno Valley Center of
University of Southern California

for

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22 February 1995

Term 4, 1995

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ABSTRACT

The primary elements of evolution theory such as: dissipative-structures; field theory; structural stability; non-linear and logistic growth; and catastrophe theory are discussed briefly. First, the application of these elements as they pertain to the recording industry structure in America are discussed. Second, an analysis of the recording industry and comparison to the Kondratiev economic theory is presented. An investigation of possible changes in the structure that could occur concerning the Kondratiev interface IV/V are then presented.

TABLE OF CONTENTS

List of Illustrations	iii
List of Tables	iv
INTRODUCTION	1
Nature of the Problem	1
How the Problem Became Evident	2
Method of Study or Analysis	3
SYNOPSIS OF COURSE THEORY	3
DESCRIPTION OF THE PRESENT SYSTEM	15
Structure	15
Functions	17
Goals and Objectives	20
Performance Measures and Criteria	21
Overall Stability and Resilience	24
Fluctuations	25
Major Perturbing Forces	27
DESCRIPTION OF THE PRESENT ENVIRONMENT	30
PRESENT SYSTEM-ENVIRONMENT INTERRELATIONSHIPS	31
How Monitored	31
EVOLUTIONARY HISTORY OF THE SYSTEM	33
Stages of Growth	33
Continuity/Discontinuity	35
Critical Threshold	35
Catastrophes	35
Dissipative-Structures	36
Cybernetic (System Dynamics) Structure/Behavior	39
Mutations and Nucleations	40
Technological	42
Great Persons	43

Early-Warning Signs of Crisis or Opportunity	43
ADAPTATION OF THE SYSTEM	44
Disparity Between Actual and Desired Conditions	44
Recommendations for Reducing Disparity	44
Restructuring/Reconfiguration	45
Future Forecast	45
CONCLUDING REMARKS	45
REFERENCES	47
BIBLIOGRAPHY	48

LIST OF ILLUSTRATIONS

Figure 1	Simple Bifurcation Fork	5
Figure 2	Fold Catastrophe Model	6
Figure 3	Logistic Function	9
Figure 4	Cybernetic System	10
Figure 5	The Four Kondratiev Cycles	13
Figure 6	Overlapping Kondratiev Cycles/Structures	13
Figure 7	Primary Components in the Music Industry	20
Figure 8	Sales for American Recording Companies	22
Figure 9	Percent Change From Previous Year Sales	25
Figure 10	Average Year to Year Percent Change per Decade	26
Figure 11	Sales by Genre Category	28
Figure 12	Unit Sales by Packaging Type	29
Figure 13	Sales by Packaging Type	29
Figure 14	Sales Percentage by Age Category	31
Figure 15	Dissipative Structure, Hour Glass Analogy	37
Figure 16	New Leaf Entertainment in Store CD Manufacturing Station	42

LIST OF TABLES

Table 1	The Four Kondratiev Cycles	12
Table 2	Macropsychological Features of Economic Cycles	14

INTRODUCTION

The Music Recording Industry in America has seen exponential growth since the 1960's. A sixty percent growth in the last 20 years (adjusted for inflation). Interesting though is that this same time period has seen the lowest average year to year per decade change since the 1920's. This was the same time period that saw CD players turn phonograph players into antiques, and M_{TV} turn the concert circuit into a struggle aspect of Artist promotions/exposure. What is the next frontier to be tackled by the music industry and with this average slow growth. At the current rate of decline are we going to possibly see consistent negative sales trends? With respect to the long-wave Kondratiev economic cycle, there is a good chance that this negative trend will continue. This is not all bad? In times of recession and depression, it will be shown that these are exciting times for forward thinking individuals with creative ideas.

First, a discussion of the current state of the music industry will be made. Some of the positive as well as negative aspects. This will be followed by an academic introduction of various principles and theories that tend to apply to all structures that evolve with time. Next, these principles will be applied to the Music Industry in America in evolutionary life-cycles of: genres of music; technological impact; and macro level societal influences on sales. Last, a discussion of a technology will be made, that could change the whole power structure of the business, expanding the market's competitiveness and spectrum of material available to the consumer. Using the so called electronic highway and launching the purchasing of music recordings by the consumer into the 21st century.

Nature of the Problem

With the exponential growth of record sales since the 1970's a huge bureaucracy of 6 major record labels has occurred, of which 2 are superpowers, Sony and Warner Bros. These "major" record labels are: Warner Bros, Sony (formerly CBS), BMG (which includes RCA), Music Corporation of America (MCA); Capitol-EMI Records; and Polygram. During the huge growth of sales in the 1980's, three other major contenders grew: Geffen Records; Giant Records and Arista Records. As these major labels grew to dominate the whole music industry in the early 1970's, it became harder and harder to introduce talent to the public except through one of these entities. During this time of consolidation, individuals with the power to "make a career" for an artist became fewer and fewer limiting access to any one of them. The negative aspect to this is the many "filtering" methods that are set up to pre-screen material before it gets to one of these powerful individuals. This has limited potentially great artists and songwriters from being able to get their material on the record store shelves. Now new artists have to find independent record companies willing to take a chance on them. When the artist gathers enough attention, only then will a major pick-up the artist for distribution on a national level.

With the consolidation of the Big Six, the majors built highly efficient distribution and promotional structures that can have an artist's material on every record stores shelf in America in a matter of a month. Development of new artists is not the only thing left to the independent labels. Creating new genres of music like Disco, Rap, Punk, etc.. is also left up to the independents. Once a new genre has taken hold, only then do the majors get into the market, developing similar groups. Without much time the genre is saturated, and alot of material sits on the shelf, losing money. Not all genres have a long life. Some genres like Disco and Punk died quickly, while others mutated and evolved into stronger forms like Rap and Heavy Metal. The problem occurs when independents and majors try to figure out when to keep pushing a genre versus holding back, and find the replacement genre. For the independents, the question is when is the best time to introduce a new genre, versus investing in the current genres.

This doesn't just end with genres of music. As discussed in the introduction, the last two decades as seen a considerable slow down of year to year growth some periods have averaged declines in sales. Is there a

possibility the music industry as a whole will see a decline in sales in the upcoming decade. If so, is there some structural change that the music industry can support to bring the industry back into increased year to year percentage increases.

How the Problem Became Evident

The major's and lobbying institutions for the majors have always looked at new technological advances with apprehension. The Compact Disc (CD) was introduced to the Recording industry in the early 1980's. The negativism revolved around the cost of the new equipment to play the CD, the increased cost to the consumer for the new format, and the capital investment by the manufacturers to make the CD. The CD quickly took hold, surpassing the album in unit sales in three years, and surpassing the cassette tape in eight years. By 1990, the vinyl phonograph album is almost extinct. Similarly when M_{TV} was introduced to the public through cable in the early 1980's, they could barely get commercial backing. Within ten years, if an artist didn't have a video on M_{TV} before their release hit the street, it was surely suicide. Now music video stations are popping up even on the major television networks. Not surprisingly, this killed the concert market because fans just had to flip on the TV to see the face of their favorite artist, versus playing \$25 per ticket to see them.

This reluctance to new ideas by the music industry structure, is the primary problem and could drastically hurt the industry if we do see a decline in record sales. Although this reluctance to new ideas is extremely common in all large socio-technical structures, the industry must align itself with more flexible management and operational methods. If they don't smaller flexible operations will take over and change the structure of power much to the loss of the Big Six.

The Big Six are not totally inflexible when it comes to new ideas. As far as new innovative ideas in music is concerned, the hunt is always on for the next Beatles, Madonna, or Michael Jackson. If a hunting attitude towards improved methods in operations and management was taken as they do towards new music ideas, maybe the health of the recording industry could survive bad times and do even better in good times.

Method of Study or Analysis

The method of study of the music industry primarily comes from observing and being involved with the Hollywood music scene for over five years, as well as reading many pieces of literature on the music business. During this five year time period, my partners and I have tried to get a independent record label financed as well as every other avenue to break through the glass ceiling where the untouchables in the industry reside. In the last year, the music production entity that I have been involved was able to secure one group with an independent record label with distribution through MCA. Two other artists that the production company is developing are very close to being signed by record companies. Concerning the data for this paper, the majority has come from the Recording Industry Association of America (RIAA) of which all record companies in America of anysize are a member of.

SYNOPSIS OF COURSE THEORY

The more our knowledge grows, the more complex we perceive the world to be. (Linstone 1993) Making decisions within complex structures and environments only complicates the ability to make the best decision for all stake-holders in the resultant of the decision. Environmental exploits, over population, arms build-up, war, and peace are all complex substructures of our world society structure. Decisions are often made within these substructures that have short-term results where long-term results, while long-term results are often ignored or unknown. These unknowns are what evolve our society in a unpredictable non-linear manner. Ironically the unanimously controlling paradigm of western culture is of a linear, cause-effect, Newtonian reductionist thinking. Almost all science is built on reductionism, reducing the complex ununderstandable whole into less complex understandable parts. Then rebuilding

the understandable parts into hopefully an accurate understandable whole. Businesses show this reductionist thinking by reducing their organization down to organizational parts (sales, marketing, production, management, etc..) to deal with the transactions outside the organization. This is not to say these methods are totally wrong. The problem comes about when there isn't an understanding of the complex interconnectivity of the components, and the interconnectedness with the outside environment.

Organizations are very similar to a human body. If you sever the complex body into arms, legs, a head and a torso then sew them together, the body will not function properly. Why?, because we have a nervous system and a blood systems that connects the parts together. In an organization, some of these interconnective parts are: communications, information flow, cooperative decision making, and politics. To make things worse the complex environment within the organization must operate in constant change. Suppliers and buyers grow and fail, the economy (local, nationally and world-wide) grows and declines, government policy constricts and then relaxes. It is this evolutionary change of structures through complex environments that is the focus of course.

The primary theories that were presented and discussed during the course all involved observations of complex systems in our universe. Examples of some of the systems that were observed are : societies, nations, economies, ecological systems, specie development, electro-mechanical, cosmological, and organizational (business/government). The variety of systems may seem broad, but through understanding the underlying commonalities between system evolution of seemingly unconnected structures, one can begin to build general evolutionary principles and theories that apply to all structures that evolve. Who would think the birth, growth, mutation and/or death of a company, would show common evolutionary characteristics as species, societies/civilizations, or stellar entities? And if they did, so what? This is what the course was about, can humans learn from the evolutionary nature of other complex systems whether societal or natural, and apply it to the policy making decisions in an organization that is under constant evolution. The primary reason for this perspective is because our traditional reductionist paradigm is no longer working in trying to solve problems in the complex societal systems of today.

The primary theories, as discussed in the course, that will be presented in this paper will be: dissipative-structures; catastrophe theory; field theory and order parameters; structural stability and change; nonlinearity and irreversibility; logistic behavior; cybernetics and feedback systems; general evolution; and long wave cycles and windows of opportunity. The first six areas discussed largely describe characteristics that occur in systems that evolve. This gives rise to the next topic, general evolution theory. General evolution theory is then presented at a macro level and how the previous topics are characteristics of structural evolution. Finally, long wave economic theory is presented with particular emphasis on the Kondratiev cycle. The majority of the theories presented are taken from De Greene (1993).

Dissipative-Structures - Primarily developed by Nobel Prize-winner Ilya Prigogine and various colleagues, Prigogine's dissipative- structure theory describes the continuous flow of energy through open systems far from equilibrium. This theory is often contrasted with conservation of energy and conservation of force principles. Dissipative- structures dissipate free energy and generate entropy which is then transferred to the external environment. As systems become more complex, internal fluctuations may grow to a critical or bifurcation point that the systems control parameters can no longer absorb or damp the fluctuation. At this bifurcation point the system becomes instable and a new modified structure evolves. Where the power in the theory lies is the idea of how eventually ideas, technical systems, scientific paradigms, and other social structures eventual grow into exhausted structures. When these structures become exhausted, only then is a new idea or mutation able to nucleate and grow through self-amplification, autocatalysis via positive feedback processes, or by cross-catalysis activity (two or more fluctuations). This nucleation can grow into a strong enough substructure to take over the control parameters of the parent structure, forming a new structure. For this reason, "dissipative- structures are strongly contrasted with equilibrium structures and this process can be viewed as a nonequilibrium phase

transition” (De Greene 1993). Figure 1 shows a simple pitchfork bifurcation diagram which graphically illustrates a structure that reaches a far-from-equilibrium state, a bifurcation point, then instability of the equilibrium branch and finally bifurcation solutions and evolutionary pathways.

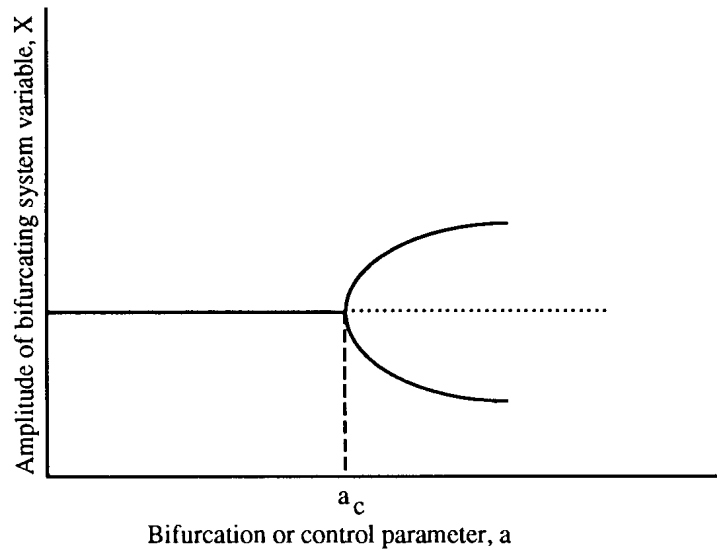


Figure 1 - Simple Bifurcation Fork
(From De Greene 1993, pg. 117)

Catastrophe Theory - Invented by French mathematician Rene’ Thom in 1975, and latter refined by Christopher Zeeman; catastrophe theory is particularly applicable to structures of multistability and multiequilibrium behavior. De Greene (1993) states, “the catastrophe is itself a sudden jump or drop from one equilibrium state to another. The catastrophe occurs when the control parameters of the structure causes the system to flip from one attractor to another.” In the catastrophe model, the attractors are static, fixed equilibrium points. This is where the theory shows weakness because not all complex systems have static equilibrium points. Also, as De Greene (1993) states, Not every complex system is a gradient dynamic system, nor can the dynamics always be derived from a potential function.” The attractors such as limit attractors and strange attractors are not static and these attractors are important factors in describing limits to growth and evolutionary paths that follow a path characteristic of a logistic function.

Figure 2 depicts a fold catastrophe model, which is one of a few catastrophe models that have been presented in catastrophe theory. Note the repeller branch is the unstable portion of the behavioral path. Structures that uncharacteristically jump (or fall) with an unusually fast phase transition to a new stable structure can often be characterized by this theory.

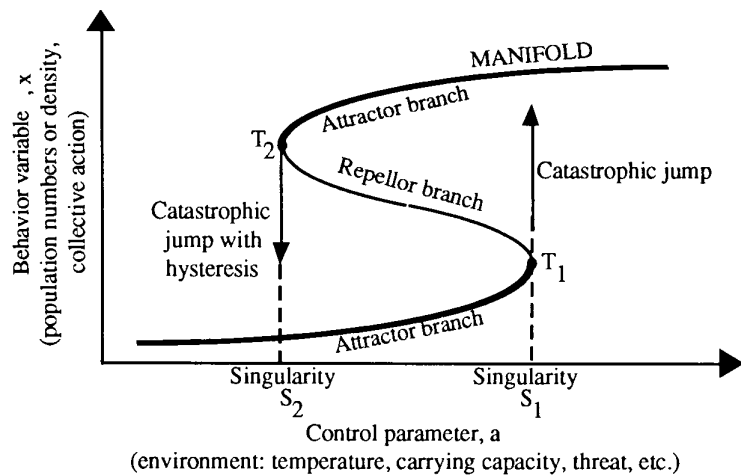


Figure 2 - Fold Catastrophe Model
(From De Greene 1993, pg. 119)

Field Theory and Order Parameter - Field theory was first developed out of the world of physics by individuals like Michael Faraday and his field properties of electromagnetic induction. Another field often discussed is gravitational field. Largely these field theories are used to describe the behavior of structures that exist within the field. If a single element in the system is perturbed often the disturbance can propagate neighbor-to-neighbor over the entire field. When the disturbance in the field grows large enough, a bifurcation point can occur which causes a phase transition. An example of how field theory and dissipative- structures work together, one can look at how water boils in a pan. Think of the water as the structure, the stove burners heat as the field that has a boundary of the pan, and the creation of steam bubbles as the phase transition. The burner/field perturbs the molecules of the water at the boundary between the pan and the water, causing the water molecules to vibrate. The vibration of the water molecules continues violently which propagates to neighboring molecules within the structure (water), which dissipates heat energy, this causes the temperature to rise. This heat energy continues to grow, molecules within the field reach a state of unequilibrium and a bifurcation or critical point is met, nucleation at that point occurs and a steam bubble forms. The change from water to steam is the phase transition.

“The fact that very different physical substances behave identically in the neighborhood of the critical point is called the universality hypothesis. The critical behavior of these systems is determined by only two values: 1) the dimensionality of space; and (2) the dimensionality of the order parameter. The order parameter represents a macroscopic property or field emergent from interactions at a more microscopic level” (De Green 1993). As in the earlier example of the phase transition of water to steam, at the point where the liquid water turns into the steam bubble, this could be represented as the order parameter field.

Structural Stability and Change - De Greene (1993) states, “Structural stability involves the qualitative changes in the behavior of the system when it is perturbed. A structurally stable system displays a correspondingly small change in its behavior following a small perturbation.” Structural stability is often associated with equilibrium, which is basically the average around which the structure fluctuates. An important aspect of stability is the existence of attractors, which are regions of phase space that attract system trajectories. These attractors are closely related to fields, like a magnet, gravity, or even world politics, that tend to shape the behavior the system. The more complex a system, the less stable as system is, given a constant environment. Complexity can grow either by a greater number of system elements, greater interdependencies among elements, or increasing strength of interactions. As the environment becomes less stable, the instability of the system also rises. An example of a social structure that has reached a high level of instability is the region of the world that was once the Soviet Union. The

complexity of the structure in that region of the world has grown due to an increase in elements and greater interdependencies now more than before (previously the states specialized in one commodity or industry and shared through governmental control, now there on their own).

A system can collapse following significant perturbations by either structural characteristics or environmental characteristics. When a system can withstand perturbations the system is called resilient. This occurs through evolutionary time as the structure develops a persistent hierarchical structure of subsystems. The resilient system has the ability to maintain internal structural interrelationships despite repeated subjection to the forces of perturbations and fluctuations. This is often seen in large organizational bureaucracies where new ideas, creativity and potential accelerated growth are ignored to maintain the status quo. In later sections on evolutionary change we will see that these systems can become ingrown and small perturbations can cause a bifurcation, which nucleates into a revolutionary substructure, that can take over the old system structure. Another aspect to structure strength is the necessity of the environment stimuli. If the external environment degrades, the structure will undoubtedly see a change. This is seen in astronauts body strength declining after long periods of weightlessness.

Nonlinearity and Irreversibility - Most systems in the real world are non-linear, yet as humans we think of most systems and decision as linear, simple cause and effect (i.e. $y = x(t)$). Systems at any given time can be stable, converging to an equilibrium, oscillate stably, diverge unstably, or exhibit persistent chaotic behavior with predictable bounds. De Greene (1993) states, in conjunction with chaos theory, "a system once thought to behave in an orderly fashion may simply be operating in a regime that later will shift to chaotic or unstable behavior. Apparent patterns may, in fact, be random and the information that these systems appear to hold really may be illusory." To make things worse almost everything in the world interacts with everything, causing an impossibility in defining elements, boundaries, interaction, and interconnectivities.

Through our linear thinking, we tend to think most systems or decisions are reversible. If we make a mistake, don't worry about it, we can just do this or that and it will fix the problem. Not so in the real world, structure evolves in a time phased fashion, once a structure takes a certain path, the path is set, time can not be turned back. One may be able to repair the negative side-effects of the structural change, but the structure can not be reversed to the old reality. There tends to be a structural memory. An example again is the former Soviet Union. No policy change or leader could reunite the original states together under the same regime with the same structure as before the fall. The current structure has a irreversible memory.

Logistic Behavior - The logistic function is a common scientific, statistic and systems phenomena that definitely non-linear. Figure 3 shows a simple logistic function, like a half-bell curve.

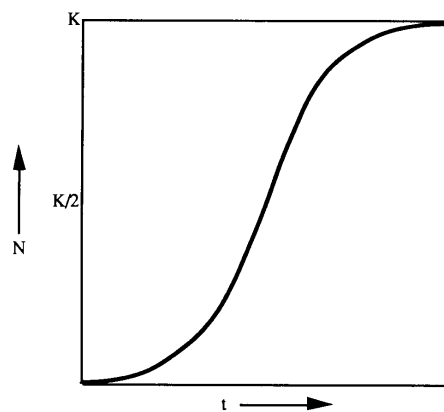


Figure 3 - Logistic Function
(From De Greene 1993, pg. 33)

De Greene (1993) presents a couple points of interest are:

- 1) The function is clearly non-linear (not a straight line).
- 2) The curve reflects the underlying growth dynamics. The leg up to the inflection point ($K/2$), generated by positive-feedback mechanisms including self-amplification and autocatalysis that are ingredients of much structural change. Past the inflection point the rate of change begins to level off to an asymptotic limit, and then moves to a state of diminishing returns.
- 3) The section in the middle, at the inflection point looks linear, which at this point could be mistaken for stability.
- 4) In the case of structures that survive on creativity (i.e. the arts, a technical design firm, a university research staff, etc.) at the asymptote, K , this could represent an exhaustion of ideas. At this point the structure begins to feel the pressures of saturated old ideas and be willing to hear new ideas that previously they didn't have time for.
- 5) The asymptotic point, K , may or may not be stable. If stable the structure would be locked into a period of stagnation and a the down turn (not represented on graph) a point of diminishing returns would occur.

Cybernetics and Feedback Systems - Cybernetics is the study of systems that have feedback control systems that allow the system to make adjustments and maintain the systems purpose. Many systems exhibit this behavior; the temperature control system in humans and other warm blooded animals, companies/organizations, autopilot controls in aircraft. Figure 4 graphically represents a cybernetic system. Note the adaptive control block internal to the system.

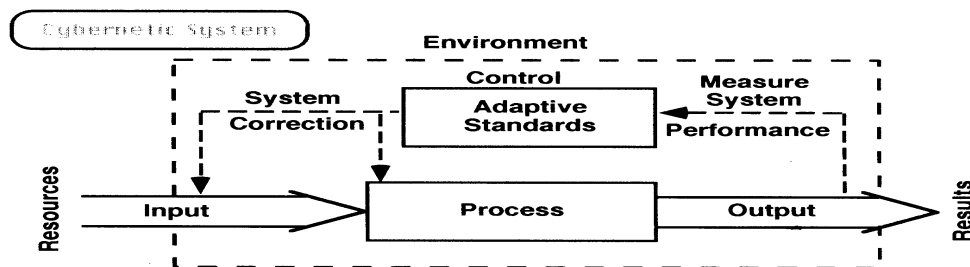


Figure 4 - Cybernetic System

Cybernetics tend to be more concerned with actual system behavior versus desired system behavior. Cybernetics tend to be applied to closed systems; and are not primarily concerned with the flow of energy and matter through the structure and its environment. Feedback is a crucial concept when applied to evolution and bifurcation points. A mutation without feedback and autocatalysis will not be able to cause the necessary nucleation to occur. Nucleation is required so the perturbations grows to causes a large enough perturbation in the structure to cause irreversible change.

General Evolution - When most people think of evolution, it has to do with apes turning into humans. Although the 'Theory of Evolution' does apply to speciation, this is just one example of structures that go through evolutionary change. Businesses evolve, humans evolve (baby to teen to adult to senior), economies evolve (recession, depression, recovery, prosperity), and nations evolve (Roman empire growth and fall, Soviet empire growth and fall). General evolution theory looks for commonality in all structural evolution. The previous sections all describe phenomenon that occurs during these evolutionary cycles. Logistic functions explain the rise and prosperity, with the mirror function being the fall and depression. Dissipative structures explain the limits to growth at the logistic functions peak and how energy and matter is lost to the external environment. Field theory and order parameter explains how the structure behaves in an environment with nonequilibrium at instability/critical points causing a

bifurcation and possibly a catastrophic phase transition. By understanding the nature of complex systems evolution, humans can better understand how the evolution of complex structures (thus the future) affect our lives shaping them in a non-linear unpredictable way. This understanding would be transdisciplinary in that it would explain most if not all complex system evolutionary change, whether it be a business cycle, the growth rate of crystalline structures, or the growth and saturation of a product in the market place. This type of thinking could revolutionize how individuals see the future, how they run their business, or look at relationships.

Evolution Theory is the primary thrust of the course and its understanding when applied to decision making in socio-technical organizational. As described in the beginning of this section, western thought is brainwashed into a reductionist, Newtonian mental model of the world we live in. Western thought is that if we make the “right” decision the “right” result will occur. The problem is due to the complexities of the environment and the structures that those decisions are made in, a plan of action that was “right” last year may be “wrong” this year. Also the “right” decision, “right” result thinking can only be validated after the fact, when the fruits (or poisons) of the decision become apparent. The saying hindsight is 20/20, summarizes this point. The damaging side to this is when an undesirable or unexpected result occurs from what was thought to be a “right” decision. Management then goes on a search and destroy mission to find the culprit that didn’t do all the analysis and fires them. Thus losing a productive individuals that probably did everything as they were told, exactly as they were told, but the game changed and no one knew until the decision resulted in an undesirable way. Individuals usually do what is thought to be right and shouldn’t be punished when environment or structural complexity causes an unknown change creating a negative outcome. Rewarding or punishing decision making should be based on what the course of action, given the “understood” reality of structure and environment. Great corporate advances are made on taking risks, a gamble, in hope the future will occur in a way beneficial to the decision made. That is called luck, not great analysis. This leads us to the last topic presented, which is cycles and windows of opportunity.

Longwave Cycles and Windows of Opportunity - De Greene (1993) states, “A modern economy can be viewed as three tiered.” The top layer supported by most individuals and economists is the business cycle. This represents prices, wages, interest rates, money supply, hiring/firing and inflation. Recession, depression, recovery and prosperity are all common day language on the news, especially in times of recession and recovery. This business cycle is called the Kitchin business cycle and has a cycle length of 3-4 or 4-7 years. The next tier down is concerned with mean production and consumption with factories, equipment, and tools and with real estate fluctuation with capital and labor usage. These two cycles are the Juglar cycle, 8-10 years, which is fixed capital in durable equipment for production. The other is the Kuznets cycle of 15-25 years involving fixed capital in real estate and buildings and the mix of capital and labor. De Greene (1993) presents, “The third and lowest tier involves the basic capital, technology, and energy structures of society.” This cycle involves the exhaustion of capital and of past investments, wearing out of one technology and replacement by a newer, more efficient technology, and the substitution of one energy resource by another. This cycle is not as widely supported by the mainstream economist, but is quite definitive of disciplines that examine socio-technical structures. The name of this cycle is the Kondratiev or economic long wave and can last 45-60 years.

The Kondratiev cycle is the primary economic cycle that is the concern of the course and this paper. The study of long waves came from the works of two Dutch workers, van Gelderen and de Wolff in the early 1900’s using time-series economic data. In 1922, a Russian economist Nikolai Kondratiev, independently came to the same conclusions. Kondratiev’s analysis went farther than the Dutch workers analysis. Kondratiev described social, technological, institutional, trade, military, and other changes in addition to traditional economic data of England, France, Germany, and the United States. Kondratiev’s work was continued in the by Joseph Strumpeter in the late 1930’s. De Greene (1993) states, “Strumpeter emphasized the role of technological innovation and particularly the concentration of innovations that happened to occur at the phase of depression. He also emphasized the process of ‘creative destruction,’ whereby an ensemble of technologies both creates new opportunities for economic growth and paves the

way for the slowdown of growth and replacement by newer technologies.” This connection between economic evolution, Kondratiev cycles, and windows of opportunities is a main principle in this research paper. Table 1 describes the four Kondratiev Cycles that have been observed since the 1700’s along with prevailing new technologies for the cycle. Figure 5 shows the cycles in graphical form.

Table 2 - The Four Kondratiev Cycles
(From De Greene 1993, pg. 22)

	1st-2nd	2nd-3rd	3rd-4th	4th-5th(?)
Prosperity	1785-1815	1860-1873	1905-1920	1948-1970
Recession	1815-1825	1873-1886	1920-1929	1970-1990
Depression	1825-1840	1886-1896	1929-1937	1900?-2000?
Dominant new technologies or industries	Steampower, textiles	coal, steel, railroads	oil, electricity, chemicals, automobiles	aircraft, electronics, computers, control systems, rockets, and missiles
<i>Break between cycles</i>	*	*	*	*
Cycle length	55 years	56 years	41 years	63 years?
Recovery	1840-1860	1896-1905	1937-1948	2000?

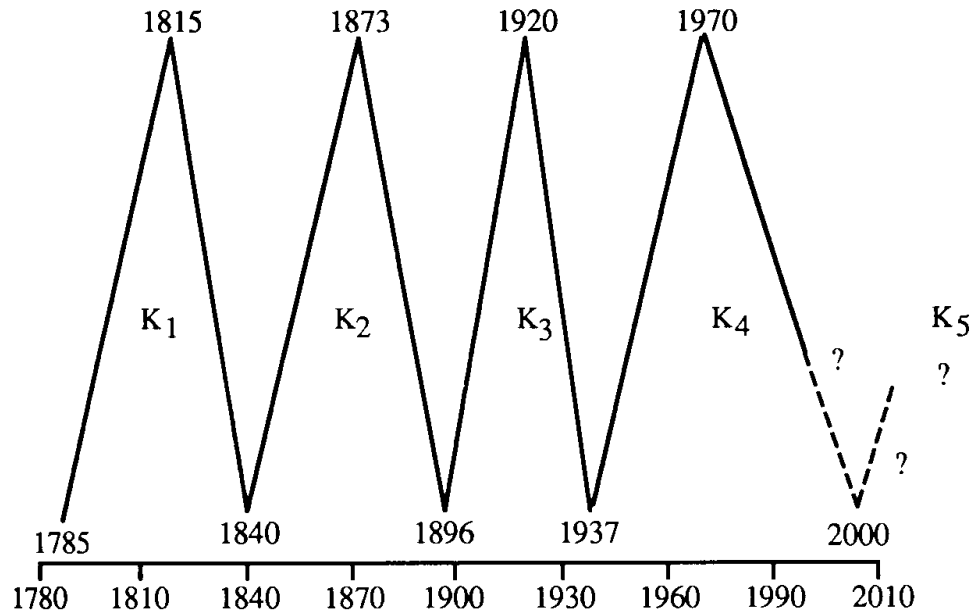


Figure 5 - The Four Kondratiev Cycles
(Idealized representation of the Kondratiev cycles. The values are not absolute.)
(From De Greene 1993, pg. 23)

The evolution of Kondratiev cycles can be depicted as overlapping logistic functions followed by diminishing returns. Figure 6 shows this graphically. As presented by De Greene (1993), “Momentum carries the system beyond a limit or level of saturation into the domain of diminishing returns. Note the seeds for a subsequent recovery are sewn in the previous phase of depression” (a clustering of innovations as mentioned in the section about Strumpeter). Note the envelope curve, tangent to the individual curves,

that indication the overall evolution of the human socio-technical system toward sustained exponential or hyperbolic (hyberexponential) growth and greater complexity.”

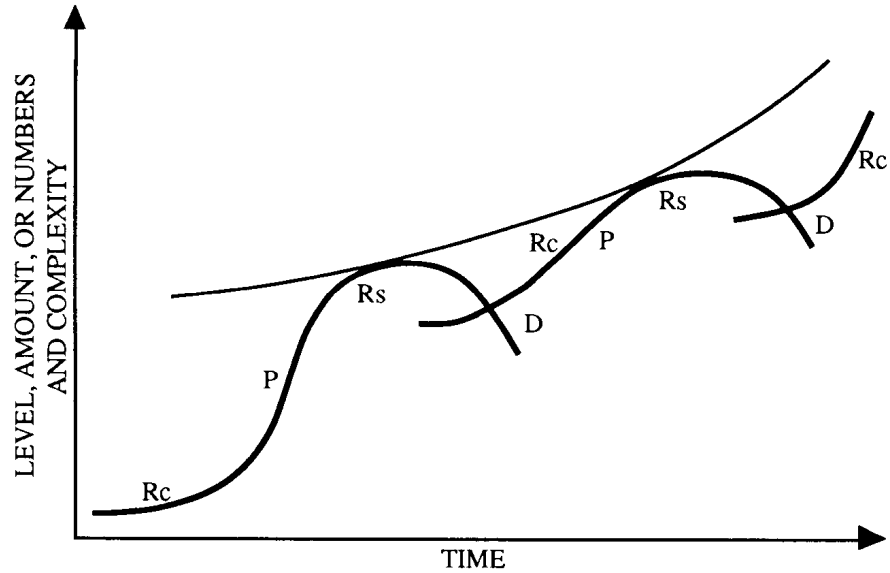


Figure 6 - Overlapping Kondratiev Cycles/Structures

Shown as overlapping logistic functions with diminishing returns (Rc = recovery, P = prosperity, Rs = recession, D= depression)
 The envelope curve shows exponential or hyperbolic systems growth.
 (From De Greene 1993, pg. 24)

The window of opportunity for optimum acceptance of new ideas as researched by Strumpeter, occurs during recession and depression and can be described in macropsychological terms (societies general psychological outlook). An obvious link between members of society is an economic link. When times are good, people have much hope, new ideas/innovations are looked at with less importance, risk is not necessary. When times are bad, people are desperate to make things better, innovation is highly welcomed and risk taking is seen as, ‘what do we have to loss?’ This is the window of opportunity for ideas to nucleate, challenge the status quo, and though feedback of energy and drive, build a new structure that grows and takes the socio-technical system into recovery. Table 2 presents some macropsychological features relating to economic cycles taken from De Greene (1993).

Table 2 Macropsychological Features of Economic Cycles

	Prosperity	Recession	Depression	Recovery
Perception of immediate threat	lowest	rising	falling from maximum	falling
Perception of opportunity	narrowing	very constrained and selective	broadening	broad
Creativity	oscillating with local high the falling	lowest	rising to maximum	sustained high
Problem-solving	falling	lowest	rising to maximum	sustained high
Learning	falling	lowest	rising	high
Anxiety	lowest	mounting to a maximum	decreasing from a maximum	low
Risk taking	falling	lowest	highest	high
Motivation, morale, and job satisfaction	falling	lowest	rising from a minimum	high
Alienation	rising	highest	falling	lowest
Values	cosmopolitan	highest conservative	economic (parochial)	politicomilitary conflict and

There is much supporting data that we are in the falling leg of the 4th Kondratiev cycle, opening a window of opportunity near the later half of this decade with the depression occurring around 2000. This means some of the sources for recovery are probably being presented now, with a likelihood of unacceptance. Within the next few years there will be a greater appreciation for these new ideas, acceptance and implementation will be better than ever before (since the 1930's). The research paper will look at the music entertainment industry in America and how creative organizations can possibly take advantage of this window of opportunity. If the music industry follows the Kondratiev cycle, significant structural change to the music industry is possible, launching the current industry into a totally different stable system.

DESCRIPTION OF THE PRESENT SYSTEM

Structure

The Music Industry in the United States is primarily composed of seven entities, all having different functions but depending on one another for optimum performance of product sales. The seven entities are: record companies; artists; record stores; promotional support; radio stations/video stations; production support and artist support. Publishing companies used to play a major role in the industry, but this has not been the case in recent years due to the growth of the artist/songwriter and producer/songwriter in the industry which don't required the services of a publishing company. Another aspect limiting the role of the publishing company is the downturn in the purchase of written music.

Record companies tend to be the hub of the industry, primarily because they can conduct much of the other entities functions, except Radio stations/Video stations due to legal limitations. All the functions required to develop, record, promote and sell a record requires alot of time and capital, thus only the major record labels can support staffs required to do these functions internally. When sales are good, the major record companies tend to constrict and do most of the production and promotions internally. When sales are low, the majors tend lay off staff and look for outside independent companies that seem to have the market niche in the function and hire them. This is especially in the case of production support and promotional support. Smaller record companies, regardless of the sales climate, tends to hire external independent companies for most functions. Thus the smaller record company tends to be the general contractor that coordinates all the necessary functions to be accomplished in order to take a project from concept to a product on the record stores shelf. In some instances a record company will have an expertise in a certain function like production or promotions, and in that case the company will then handle the niche functions internally, while coordinating the rest outside the company.

Artists are hired/contracted persons by the record company that perform the music which is captured on a recording, mass produced and sold to the public. Throughout this paper artists will refer to both an individual or a whole group, whatever the contracted entity may be. The artists can also conduct more functions than just the performance of material. Depending on their talent, they can write the material, develop and arrange and even record the material, like Prince or Babyface. In some cases the artist even develops and produce the music video that will help in the promotion on their recorded product. The artists image, the character that is portrayed to the buying audience, is almost as important as the artist musical talent. Static image reliance has it's downside though, regardless of the music talent of the artist, if the image is one of a fad or craze, like most rap singers or some rock bands, when the fad no longer has appeal the group will fade away.

Record stores are the sites at which the consumer purchases the recorded material. For this paper, mail order clubs and other avenues for purchasing recorded material will fall under this category.

Promotional support are service companies that are hired by a record company to market and pressure radio stations and video stations to play their material. These independent companies can be very influential in the exposure of an artist to the buying public through air play and video play. As discussed by Dannen (1990), in the 1980's an underground organization of about twelve individuals indirectly controlled the airplay on all major radio stations in America. Hence twelve individuals held the whole pop music industry in the palm of their hand. This informal alliance of twelve individuals was called the Network. Later, it will be discussed what the environment was that allowed an independent organization of individuals to become so powerful within a structure so heavily controlled by the major record companies.

Radio Stations/Video Stations are the primary source of exposure for the artist and their recorded material. The radio stations play the artists material, which is basically advertisement for the artist. The consumer gets to hear (and see in the case of video stations), the artist's performance of the musical material. The consumer then makes a decision as to whether or not purchase the recorded material for their private collection. Radio stations and video stations in concept provide and even playing field for record companies to compete their product lines. Many laws governing the record company and radio station relationship are in place to ensure a level playing field. Since radio/video stations cannot legally receive payment from record companies for playing recorded material, the stations income must come from another source, selling commercial time. Major radio stations align themselves with certain genres of music (i.e. Country and Western, Rock, Jazz, and Urban Contemporary). This is called their Radio Format. The larger the audience for a genre of music, the larger the market for selling commercial time to advertisement companies. Having the number one station, indicated by the listening audience, allows a radio station to charge more money for commercial blocks of time.

Production support are service companies that develop and record the master copy of the artists recorded material for mass copying. This effort entails: occasionally writing the material; securing the recording studio and studio musicians if needed; actually recording the artists performance; final mixing of the material and mastering the recorded material. Production is another support function that is sometimes conducted internally by the record company, especially if the record company is an independent record company formed by accomplished producers. The major record labels contract and expand in their internal production capability. When sales are good, internal production capability is strong. When times are bad, production staff is let go and outside producers are hired to find more creativity in music genres and style.

Artist support are individuals and companies that manage the artists affairs for a portion of the artists income. Managers, agents, accountants and entertainment lawyers fall under this category. They are involved from the beginning in marketing the artist to various record companies, negotiating the contract with the record company, and then managing the career of the artist so the artist can concentrate on their talent. There tends to be more gray area in this category as to functions and responsibilities, especially when the manager of the artist may also be the producer of the project or fill some other main function in the artist career and project.

All the entities rely on one another to accomplish primary functions required to turn a talented artist into a product that the consumer can purchase. There is not a given structure that always occurs in the release of an artists record. For instance, a major artist with a major record company may have all the production accomplished by an outside producer with outside songwriters. The record company helps in the selection of the songs; manufactures the copies of the recorded material; distributes the recorded material and promotions the artist. Another scenario could be such that a new artist with a smaller independent company may have production and songwriting all done by record company, with manufacturing and distribution being conducted by a major label. While Promotions may be handled by a third another independent company. Thus multiple entities can be involved in the recording project, yet the functions that must be accomplished don't change.

Functions

The following functions are necessary to take a talented individual and turn them into a product that the American consumer is aware of and desires to purchase their recordings. All functions, except for the first one called acceptance, are necessary every time an artist releases a new product.

Acceptance - Before an artist is contracted with a record company, the artist must be packaged as a viable product that the record company is willing to invest in. The packaging of the artist as a product that the record company can review and consider includes three parts: 1) an image or character that has visual appeal, usually involving pictures and a biography; 2) original recorded material that demonstrates the artist's musical talent and songwriting if the artist is a singer/songwriter; 3) a means of showing the artist's live performance capability. The live performance can be accomplished through a video or a history of live performances at established venues. Generally this demonstration (demo) package is developed by an individual that is already involved in the music industry and is one of the entities described above in the structure. The coordinator of the demonstration package could be a producer, an artist manager, a private investor, an entertainment lawyer, an agent or even a radio station employee. The demo package coordinator generally has a contract with the artist that stipulates a certain portion of the artist's income will be given to the entity upon successfully getting the artist a record contract. The cost of developing a professional demo package can cost as little as \$10,000 or as much as \$100,000. It depends on how much of the demo package can be accomplished internal to the coordinator. This initial investment is almost never spent by a record company. Thus the development risk of a potential star is outside the record company. Only upon an established following and "industry buzz" will the big record companies take a chance on a new artist. This could even require that an artist be developed by a small record label, released locally to gain a local market acceptance and then a big record company contracts with the small record company for distribution and promotions.

Production - Production is all the activities that are required to turn an artist with raw talent into a master recording of music that can be mass manufactured (copied). Activities include: writing or finding written songs for the artist to record; arranging the material for the artist; developing the artist's style on how song will be recorded; overseeing the recording process; gathering any extra studio musicians required to perform on the recording; overseeing the engineering and final mix of the material; and preparing the master recording to be delivered to the record company for manufacturing. This function can be carried out internal to the record company or contracted out by the record company to independent production companies.

Manufacturing - Manufacturing is the process in which a master recording of the artist is copied in mass quantities, and packaged for sale to the consumer. Various packaging methods such as audio tape, - phonograph record or compact disc are offered to the consumer. For national and world-wide sales, this function is conducted by one of the Big Six record companies discussed in the introduction of this paper.

Distribution - Distribution includes all activities required to move manufactured copies of the recorded material to various entities that interface with the customer, usually record stores. The distribution of recorded material is currently controlled by the Big Six record companies. This is where the true power of the Big Six lies. This was not always the case, in the early 1970's distribution was open to any record company big or small and was largely controlled by a dozen independent distributors. By the end of the 1970s, the Big Six major record companies emerged as the oligarchs of the music industry (Dannen 1990). There is not one major recording artist in America that one of the big six record companies does not have a piece of.

Promotion - Promotion is the process that markets the artist's recorded material to the radio stations and video stations for air play. This function is largely carried out internally by the major record label that has a vested interest in the artist through distribution. Independent radio promoters have also influenced

air play for records as discussed previously concerning the Network. The effectiveness of an independent promoter to persuade stations to play certain records generally defines their ability to stay in business.

Purchasing - Purchasing is done by the consumer at the record store or other sales outlet. Record sales is where the majority of the income occurs for the recording industry. Mail order, phone order and other options are available to the consumer. The sales breakdown is: Outlet (the big record store chains) stores constitute about 70% of the sales; other stores such as Kmart and Target constitute about 20% of sales; and mail order about 10% (Data from Recording Industry Association of America).

Reinvestment - This function is primarily a business function that occurs in all businesses, reinvestment into current product lines and developing new product lines. Earnings from artists sales are reinvested into the next album for the artist assuming the artist had good sales on the previous album (about one million units sold) or reinvestment into a new artist. This reinvestment activity is conducted by entities that develop new talent, the record companies, and production companies that choose to take a more active investment risk into artists projects.

A graphical representation of the structural entities and their functions can be seen in Figure 7.

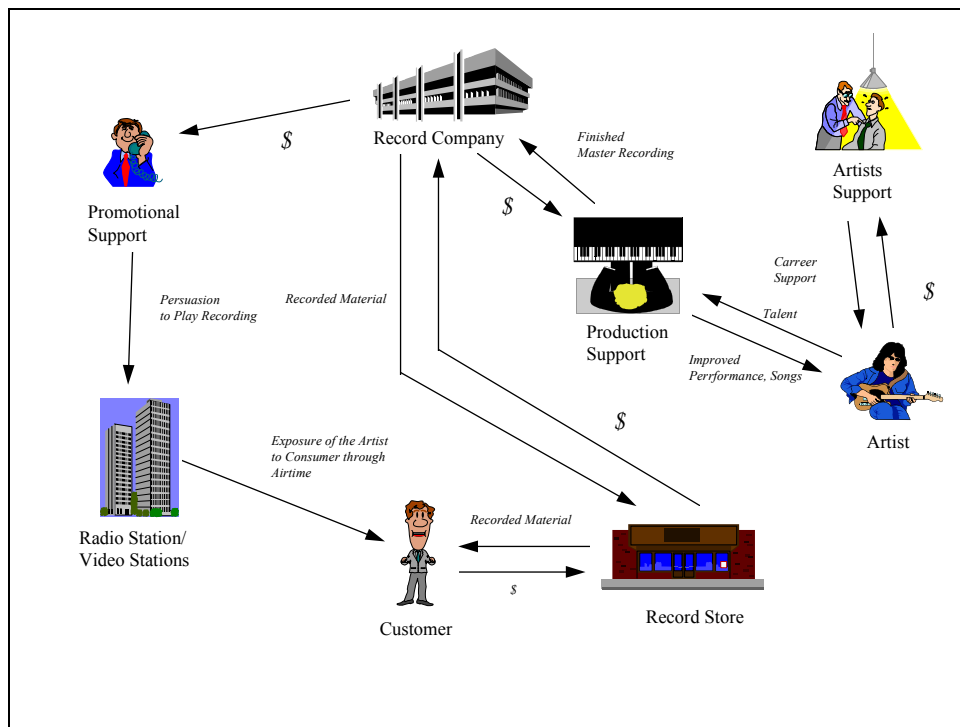


Figure 7 - Primary Components in the Music Industry

Goals and Objectives

Income is primarily derived from sales of recorded material, this becomes a common goal for all the entities involved except for radio/video stations, which count on record sales within their Radio Format to raise their audience size. Cooperation between the entities must occur, working towards maximum record sales. Contracts that tie these entities together are largely based on an income as a percentage of sales. Songwriters, producers, and artists, record companies and record stores all derive their income directly from record sales. Artist support earns income through a percentage of the artists income which is based on sales. Promotional support indirectly receives income due to sales because their income is from the record company. The more a promotions entity can secure a records air time for a record, the more exposure the record will receive thus increasing its probability of sale.

Each structural entities has individual objectives that can be linked to the primary goal, increased record sales. Optimizing their function(s) within their sphere of influence, supports this goal. Record companies have the most power and control to influence sales. Finding the best songs for the artist, with good producer, spending time and money on promotions and ensuring product is in adequate supply are all within the record company's control. Production support has total control over the quality and style of the recorded material, and in some cases the songwriting. This is what the consumer is actually buying so Production support has the most control over the actual product. Promotional supports primary function is to get the record played as many times per day as possible, which requires persuasion with radio and video station programmers. Some record companies even pay bonuses to Promotional support as to how much air time a song receives within large markets. The artist's primary influence is in their performance on the actual recording. An often overlooked aspect is how the public sees the artist outside of the recorded material. As a side note; album sales can be destroyed by the artist if they portray negative lifestyle characteristic to their audience such as the Michael Jackson, child-molestation suit.

Artist Support entities help the Artist negotiate the best recording contracts that can be expected, and keep as much as possible (i.e. tax accountants, entertainment lawyer, financial advisers, agents, and managers). The better negotiating and financial advising that the support entity provides to the artist, the more they can charge for their services. This support helps the artist concentrate on their art, not financial worries. Radio stations and video stations are different than the other industry entities. Their objective is based on creating a larger listening audience. This in turn raises the value of commercial time slots.

Performance Measures and Criteria

Artists receive industry recognition primarily for two factors, overall sales and radio air time. Grammy awards and other Industry awards have little bearing on an Artist short term and long term potential. The bottom line is if the Artist is selling alot of records, they are a recognized entity. For record companies, performance measures are largely record revenue and profit. All other entities except for Radio/Video Stations are recognized primarily for the impression they have in the industry on how they can influence sales of a record, thus more of a qualitative measure of value.

Sales - The American Recording Industry has seen exponential marginal growth since the 1960's. Interesting is the fluctuation that has been seen during this time, an average year to year growth of only one to two percent. Figure 8 shows the sales figures of American Record since 1921.

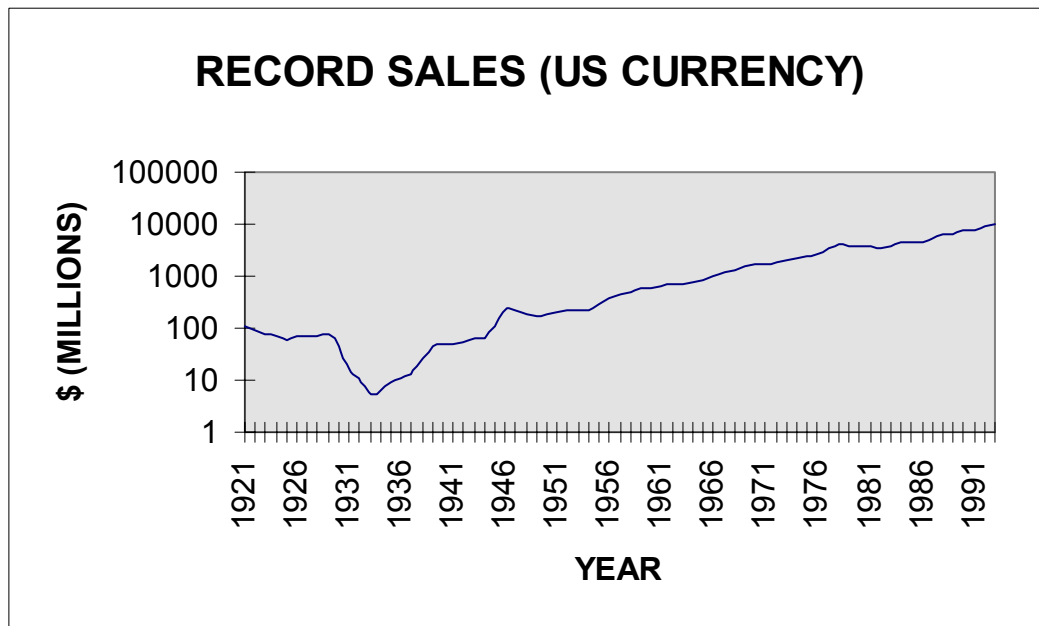


Figure 8 - Sales for American Recording Companies

(Data from RIAA, adjusted for inflation using Price Index Data from Department of Commerce, 1987 Dollars)

This growth would appear to show great health in the industry, but as it will be shown later, the industry could soon see a fall in sales.

Operating Costs - Operating costs are costs required to conduct business. These include: songwriter fees, staff costs, video production costs, corporate salaries, distribution costs; and capital investments for manufacturing recorded material (some of the manufacturing can be contracted out to private companies). By lowering costs, profit margin is increased. Care has to be taken because cost reduction measures can cut into the quality or market appeal that is required to maintain a highly marketable product. Cuts in promotions can also hurt radio time which is directly related to artist exposure to the consumer. The early 1990s saw great reductions in staff, especially in upper management. Capitol Records totally reorganized with the hiring of a new president in 1992, one of the youngest major record company presidents of all time. Most of Capitol's artist were let go, especially the new artists. Another operating cost that has fallen recently is video production costs. The average video goes from conception to competition in less the four months, with filming being only one day. The average video for an Urban Contemporary group could be done for less the \$100,000.

Radio Air Time - Radio air time is the amount of time a record receives play on radio in large market areas. Exposure to the public is primarily through radio. With the creation of Music Television, a great avenue for increased exposure was created. Visual image became increasingly important. Radio Air time is by far the most competitive area of the music industry as well as the largest constraint, more than 200 new records are presented to a radio station per week. Only so much time per day is given to playing music, the rest is talk and commercials. Creating more radio stations is not the answer either because their is a limited amount of commercial dollars in a given city. As a city sees growth in businesses, only then will added commercial money becomes available for expenditure on commercial time. With the advent of Music Television, this opened a totally new avenue for exposure, independent of business growth, since the income was based on cable television subscriptions.

General Population Acceptance - The populations acceptance of an artist character can also be influential in the sales of records. Many attempts have been made to start recording careers by individuals already in the entertainment business (actors, models, sports celebrities, etc.). Few long term success stories can be seen in recent years. Most likely due to the nature of the music business being a year-round career, versus movie careers only requiring a couple months here and there, or television with its production schedule lasting from March to September. The other direction is much more successful, starting in music and venturing off into television and movies. Almost always, side careers for music artists are very successful. This greatly adds to their music career, for public familiarity.

Production Costs - Production costs are associated with developing and recording the material. These include: recording studio costs; studio musicians; capital investments into studio equipment and music equipment; and sound engineering costs. Production and recording costs have also seen a major downturn in recent years, primarily due to new affordable technologies in digital electronic equipment. Home studios costing as little as \$30,000 can now record digitally, store and replay all the parts with a computers giving incredible complexity, and accuracy down to hundredths of a second (1/64th notes). The big studios in Hollywood are going bankrupt due to the lack of business, yet the quality of recording is going up. In the 1980's it was common for an established group to spend \$700,000 to \$1M to record an album. Now the same recording for \$150,000, in half the time and better quality.

Promotional Costs - Promotional costs are associated with paying independent companies to push the artists material to radio stations. Promotional cost have gone down by half since the Network was broke

up in the mid 1980s. With the added monitoring by the FCC concerning illegal bribery for airtime (called payola), new and creative methods are being developed to persuade stations to play certain records.

Support costs have remained generally the same, but with less artists receiving contracts in the recent years, the management companies have been having a harder time finding new clients.

Overall Stability and Resilience

Big Six - The stability of the industry is primary due to the strength of the Big Six major record companies. Again they are: Warner Bros., Sony, BMG, MCA, Capitol-EMI, and Polygram. This was not always the case. In the late 1970s these six record companies had only 10 to 15 percent of the pop market sales. They began buying small record companies and even big ones like Liberty Records, United Artists Records and ABC-Dunhill. Another move was to contract with independent record labels with for distribution of their material, thus destroying the existing independent distribution business. By 1986, every record company of anysize had to go to one of the Big Six for national distribution. What this also translates to is less choice for customers. The recording industry puts out around two thousand different albums per year, half the amount just a decade ago (Dannen 1990). With a large oligopoly that exist, nothing can be introduced as an industry wide initiative without all six companies concurrency. The Digital Audio Tape was kept from sales in this country for five years during litigation by the recording industry trying to get an anti-bootlegging device in the digital tape recorders so they couldn't record CDs. The CD was accepted with suspicion due to its higher cost, and new requirements for equipment (at \$600 per player in 1984, four times the cost of the average phonograph).

Major Independents - This is a fairly new category to come about since the consolidation of the Big Six in the late 1970's. The first to occur was Geffen Records which started out of the garage of David Geffen in 1980 and within ten years the label sold to MCA \$545 million in stock (Dannen 1990). Other record labels that are still independent that fall into this category are Arista Records and Giant Records. Both started by the past records presidents, Clive Davis ex-president for CBS started Arista and Irving Azoff ex-president for MCA started Giant Records. These record companies have considerable power in the industry but must still use the majors for distribution. Initiatives started by these companies have a much better chance of being accepted by the industry than any other level below.

Minor Independents - These record companies are largely puppets of the majors, owned by an individual that has considerable power with at least one of the Big Six. Totally distributed by their parent company, these labels are largely given total creative control over material recorded and the artists signed. In the last five years, the Big Six have used these independents as test beds for new genres of music and new artists. Once proven as a stable genre or artist, the parent label often buys into the artist or genre and invest more heavily in future acts that fit into the new genre. This is one of the few areas of total openness that the Big Six show as far as innovation. The Big Six are always looking for the next Beatles or Whitney Houston or the next Disco or Rap. First to market, often establishes a larger market share in the future.

Fluctuations.

Sales - The primary fluctuations that occur within the structure is associated with sales. Growth and decline, are watched the most and cause the most concern. Year to year percent change is the primary indicator for health as compared to the previous year. This is basically the derivative or slope of the sales graph plotted in Figure 8, with dy/dt as the slope for each years change. Figure 9 shows the year to year percent change (slope/derivative at each year) since the 1920s.

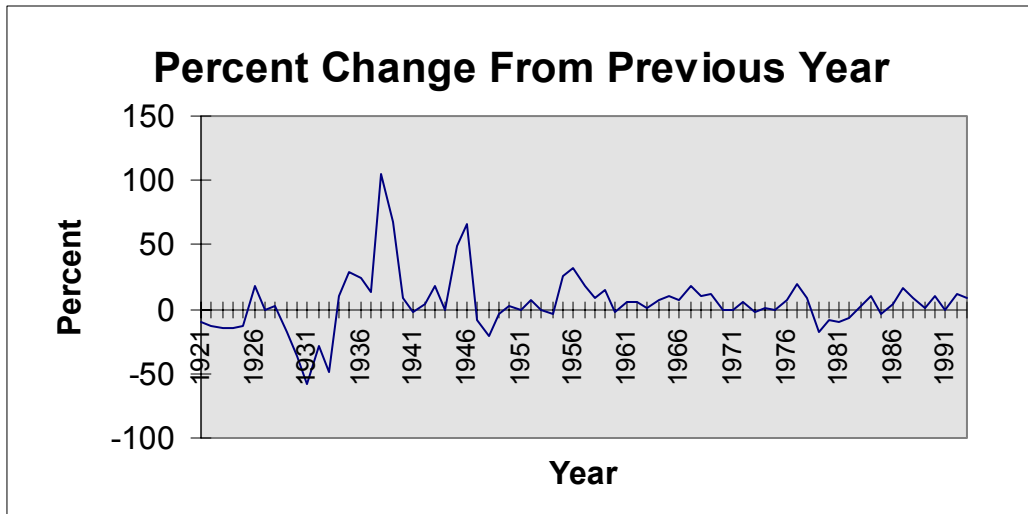


Figure 9- Percent Change from Previous Year in Sales

(Data calculated from RIAA sales data, adjusted for inflation using Price Index Data from Department of Commerce, 1987 Dollars)

Note the great leaps and drops prior to 1960 with a stabilizing effect a since. Also note the fluctuations were similar level before the great consolidation of the late 1970s creating the Big Six Record Companies. To give a better idea of the trends, and smooth out the year to year fluctuations, an average year to year change per decade plot can be seen on Figure 10. The data point for each decade is calculated as an average of the percent change for each of the years within the decade. For instance the 1970 data point averages all the yearly changes from 1970-1979. There has obviously been a large decline in growth rate since the 1950s, This can not be blamed on the consolidation of the Big Six, because the decline began long before 1980. So what could be the cause of the decline? A discussion of the possibilities will be covered in the section on dissipative- structures and the Kondratiev economic cycle.

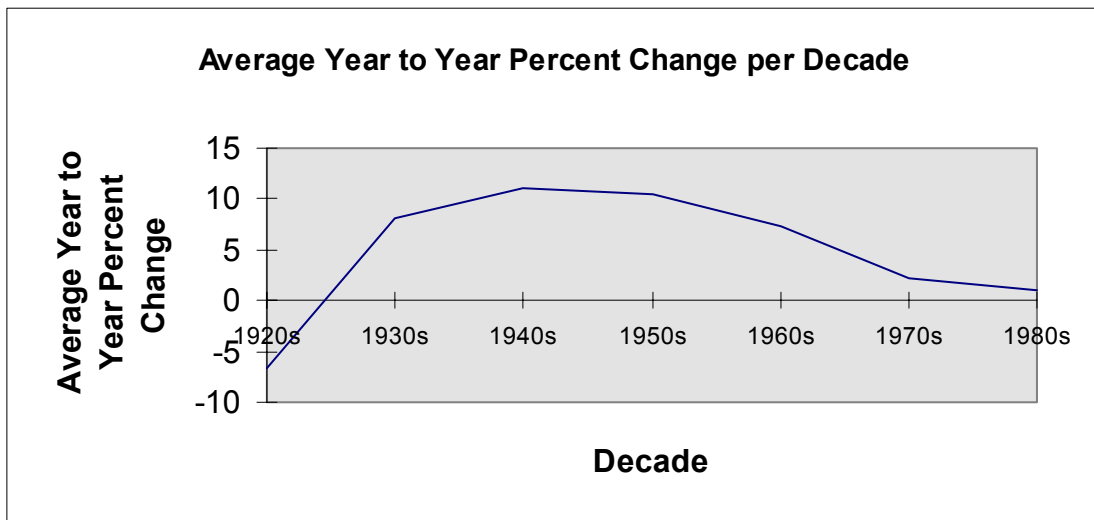


Figure 10 - Average Year to Year Percent Change per Decade

(Data calculated from RIAA sales data, adjusted for inflation using Price Index Data from Department of Commerce, 1987 Dollars)

Costs - Cost is another factor that could cause structural fluctuation. During the 1980s the underground promotions organization called the Network, described earlier under Structure, greatly influenced the cost of promotion almost to an extortionary level. At the height of the Network's

influence they were only making \$100 million per year. While only 1.5 percent of the annual revenues, the power struggle caused the Big Six to come together and destroy the Network.

A much more effect impact to cost was the growth of new digital music equipment for music production. This was largely a savings for the artists because the development costs for all albums come out of the artists earnings, making the artist financially responsible for production costs. This allowed more artists to be able to compete, quality wise in the industry. The declining costs in the recording industry is most evident in the cost of a CD. Since the CDs introduction to the America consumer in 1984 at a cost of \$14 to \$17, the cost has dropped to a steady \$13 for the last six years. The cost of the audio tape has rose only \$1 in the same time period. As a noted point, the cost of any recorded material is not in the actual material (both CDs and Audio Tapes costing well under \$1), it is the costs of distribution, operating costs, promotions, songwriters, producers, and artists. All have a percentage stake in the sale. So where is their likely to be the easiest cost change? Songwriters have much of their percentage earnings set in law through copyright laws. Producers negotiate percentage based on previous performance and they know they are a very important factor in recording artists. Promotional costs could fluctuate some, but never as bad as the days of the Network, the majors learned their lesson. This only leaves operating costs and distributions costs.

Major Perturbing Forces.

Large Artists - Internal to the structure, big artists can cause perturbations within the structure. Big artists like Michael Jackson, Madonna, Prince, the Rolling Stones, and Aerosmith make alot of money for their Record Companies. The fact that Michael's last contract had potential worth of almost \$1 Billion tells you he is an important artist to Sony Music, and the music business as a whole. Twenty percent of the artists easily bring in eighty percent of the sales. When any of these artists release an album into the market a small spike in sales is bound to occur. These artists have large infrastructures that are formed around them with legal support, financial advice, managerial support, etc. The fluctuations of workload for these infrastructures around the time of a record release can cause a ripple effect through the whole Artist Support structure. Even the record companies have small teams of individuals whose only job is to work a certain artists account/project. When one of these artists came out with a style change within their genre, this definitely shifts the structure for their genre as well as other genres around them (i.e. Michael Jackson releases a album with the Urban Contemporary genre which causes a structural shift in Rap). More on genre structural changes later.

New Artists - An internal perturbation also occurs when a new artist is released into the market. These new artists have a somewhat less impact on overall sales in the industry structure, but where the new artists has the most influence is on genre changes. One new artist with a very appealing new style within a genre can heavily influence the genre in the near and far future. Examples of recent artists that heavily influenced a genre are: Mary J. Bleige within female Urban Contemporary/Rap; Dr. Dre and Snoop Doggy Dog within the Rap genre; and Kenny G. within the Contemporary Jazz genre. All these artist reshaped their music genre changing the structure for all the other artists within the genre. Creating a new genre takes much more than one artist. This fact will be discussed in more detail within the section concerning mutations and nucleations within genres.

Large Production Companies - An internal perturbation can also be caused by significant production companies. In the last five years, especially in the Urban Contemporary genre, a few production companies have largely shaped a whole music genre. The three big production companies in Urban Contemporary are LaFace, Flyte Time Productions and Narada Michael Walden. Others to a less extent have had some influence like Dallas Austin, Teddy Ryle and R. Kelley. Between these six, they produce approximately eighty percent of the groups in Urban Contemporary. These six heavily shape and reshape the Urban Contemporary genre. Another example was Phil Specter of the 1960's and the genre shifts he caused within rock.

New Genres of Music - Another internal perturbations that occur within the music industry structures is the creation of new genres of music. These new genres can add greatly to add new energy to a stagnant, saturated music scene. New genres can greatly add new energy to all genres, since music became a large industry. Bee bop Jazz, helped the saturated Big Band Jazz scene. Heavy Metal Rock revived the 70's rock sound. Disco revived the pop market for a short time. Most recently is the Rap music genre. Figure 11 shows the growth of Rap and with a rise to Urban Contemporary. Internal to Country Western saw a much more pop type of style develop which showed considerable growth.

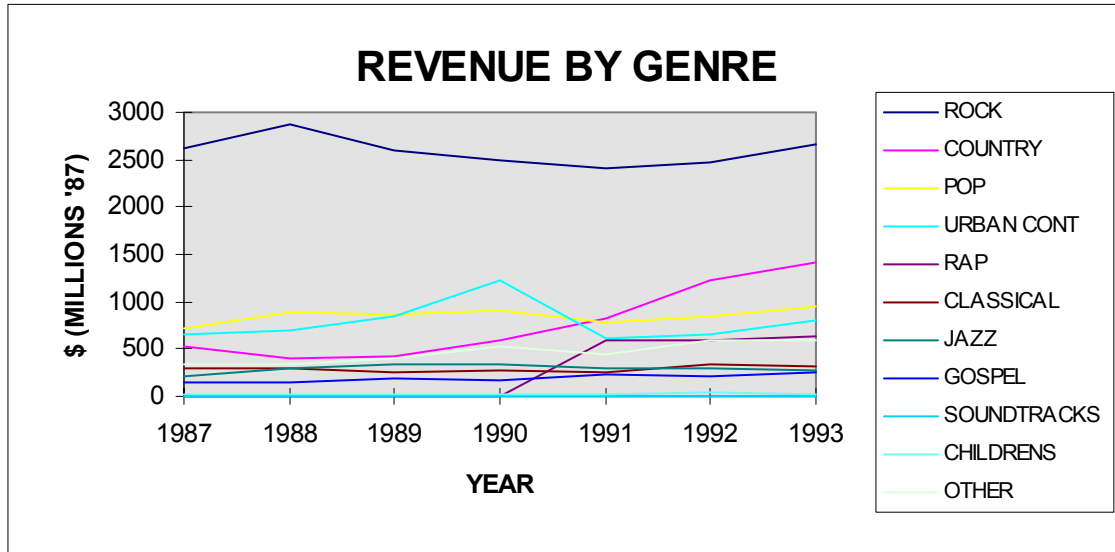


Figure 11- Sales by Genre Category

(Data from RIAA sales data, adjusted for inflation using Price Index Data from Department of Commerce, 1987 Dollars)

Technologies - An external perturbation in the environment outside the music industry is technological advances. Technology as described previously helped in lowering the cost of producing high quality recorded material. The greatest technological advance in the last 15 years is by far the introduction of the Compact Disc as a recording medium. The CD eclipsed the sales of albums within two years and within six years totally took over the market. Figure 12 shows the growth of the CD and growth of total units purchased since the introduction of the CD in 1984. Total growth of units sold by almost 100 percent in just 12 years. Also note the growth of the cassette tape since its introduction in the mid 1960s. In less than 20 years it became the top performer until the CD passes it in 1992.

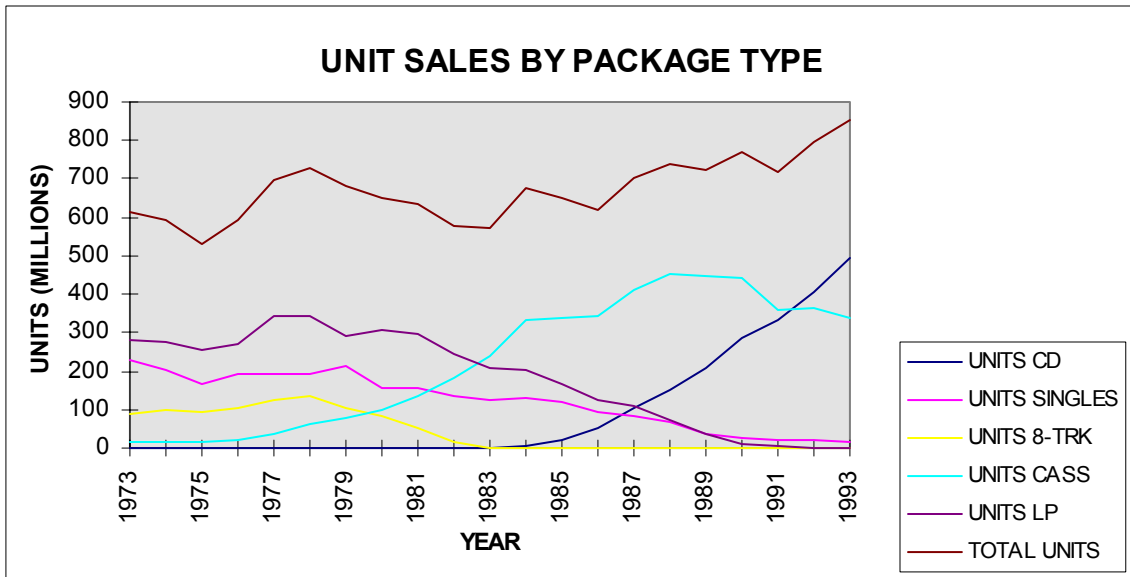


Figure 12 - Unit Sales by Packaging Type
(Data from RIAA sales data)

Since the new CD cost more to the consumer there was also a revenue growth at a greater proportion growth than units sold. Figure 13 shows the sales review by packaging type since the CD was introduced.

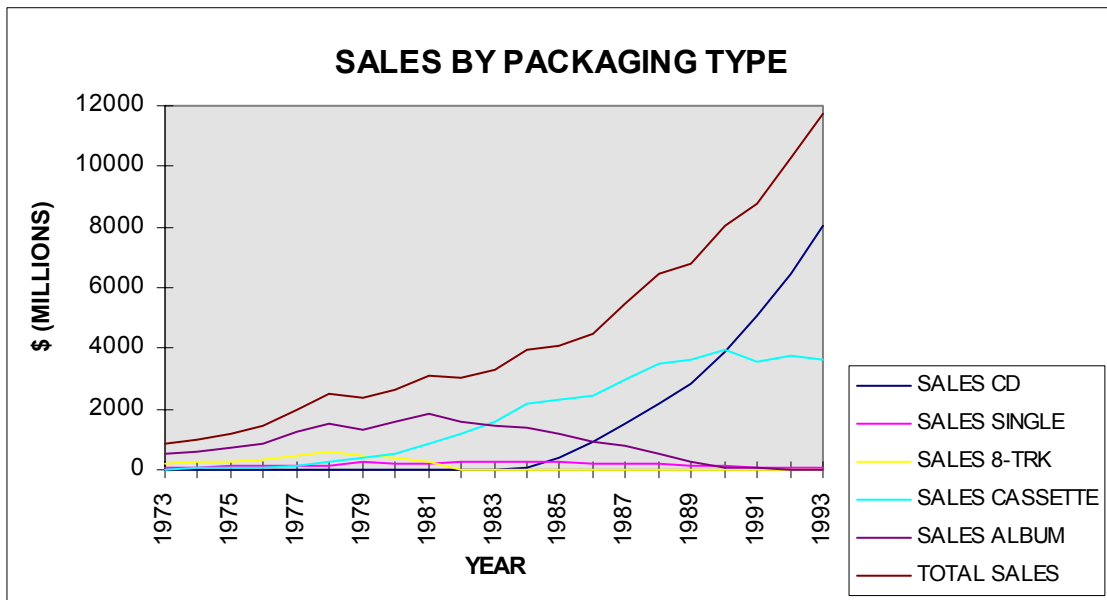


Figure 13 - Sales by Packaging Type
(Data from RIAA sales data, adjusted for inflation using Price Index Data from Department of Commerce, 1987 Dollars)

New Promotional Avenues - Perturbations in the promotional opportunities to artists can also cause structural reshaping. Around 1980 a small cable channel called M_{TV} began playing on cable channels, playing music videos of recording artists. The quality of the music videos were barely above a home movie and few were available, so the same videos were played over and over. Also, it was commercial free, probably because of a lack of companies willing to pay for commercial time on such a unique channel. Within three years, M_{TV} wasn't only a teen cult phenomenon, artists that couldn't even be broke on the radio, were making big money through M_{TV} exposure. Also for the first ten years, M_{TV} played exclusively rock videos and with some selected pop artist. M_{TV} even stated this fact when black

artists accused them for racism. This rock only attitude was probably based on the radio format paradigm in radio, thinking that people only appreciate one type of music versus many. Soon a black supported music television station formed called Black Entertainment Television (BET) which catered to traditionally black music forms. Today M_{TV} realizes it is a pop music phenomenon and they plays all types of music videos, and even has music game shows, cartoons, and a Music Awards show that has probable the best turn out of artists for all the awards shows.

DESCRIPTION OF THE PRESENT ENVIRONMENT

America is consumed with music, in almost every aspect of life. Music is played on the phone when people put you on hold. Stores, elevators, and businesses in general almost always have music playing in the background. Almost all commercials involve music to get the message across. An attitude toward purchasing music has never been better in the history of the music business. People have even turned their computers into music machines with sound boards and CD players. Thus, it won't be long before people will be able to try out music on the internet.

Music industry wide there seems to be a saturation of ideas, from a creative standpoint. Small pockets of creativity are apparent, but wide spread creativity is not being seen. No Mick Jaggars or Paul McCartneys are banging down the doors. A good high school band is hard to find. In the 1970s, everyone that could play anykind of instrument was getting a band together for a variety show or talent contest. Its hard to even find live bands playing music in most cities across the country, which means that their is not much young talent developing themselves.

The electronic industry growth has drastically reshaped the way music is generated and performed in the 1990s. Although the music industry is a very small portion of the computer industry purchasing population, computer companies like MacIntosh have supported an incredible amount of investment and product development for the music industry. A multitude of magazines are dedicated 100 percent to electronic music equipment reviews and advertisement, and many others discuss the music business itself. Electronic music technology, at the amateur music developers level, has grown tremendously in the last ten years with the invention of the communications protocol MIDI (Musical Instrument Digital Interface). This protocol allows almost any electronic instrument to be controlled/interfaced with any other electronic musical instruments even by different companies and instrument types. With the \$20,000 investment, one computer can control up to 250 different parts of music simultaneously, that's bigger than most orchestras. All within a 1/64 note of accuracy.

PRESENT SYSTEM-ENVIRONMENT INTERRELATIONSHIPS

How Monitored

The first interrelationship between the industry structure and the environment is the economy through the consumer. The purchasing cycle of recorded material is very similar to the purchasing of other nonnecessity items. The Christmas season is always the biggest time of the year for recorded material. Another good sales period is late spring which continues through the summer. Likely to correspond with students summer vacation and working for the summer which adds income to their age group. Figure 14 shows the break down of percentage of sales by age category. On average the age group from 15 to 25, carries almost fifty percent of the sales. Add the 25-30 year old category and its is over 60 percent of the sales.

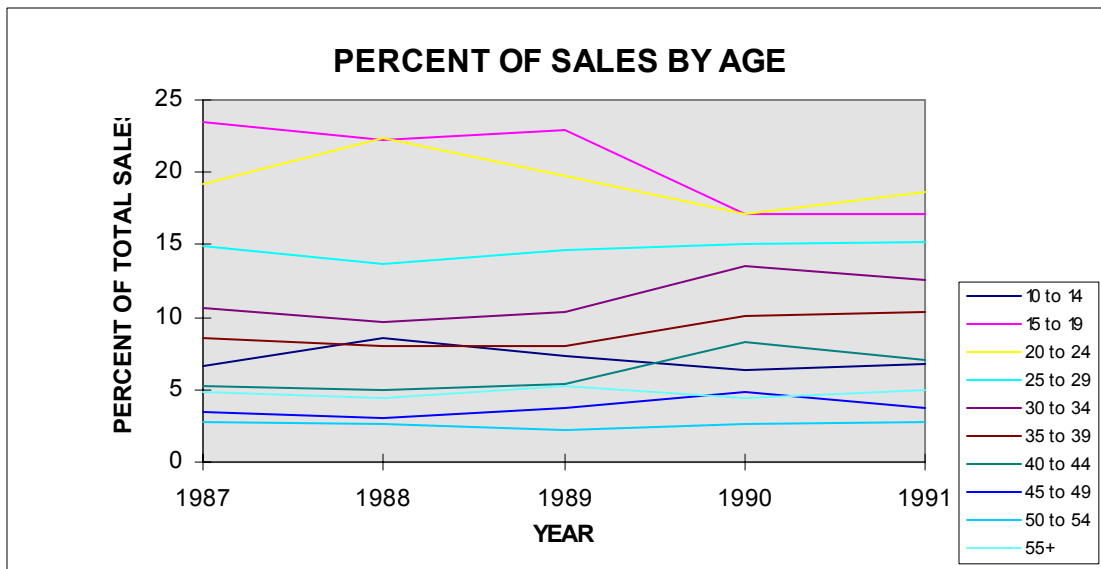


Figure 14 - Sales Percentage by Age Category
(Data from RIAA sales data)

As the income changes in these age categories, more disposable income is available for this age group to purchase recorded material. As far as male versus female sales percentages, there is an almost even split with males dominating by less than ten percent. As the economy shrinks or grows, family disposable income follows the trend. In times of economic prosperity, parents are more likely to give their children money to purchase recorded material. In times of recession or depression, these same children won't get a positive response when they ask mom or dad for money to buy a record.

Purchasing data is collected and monitored quite extensively to try to track and then target the larger buying populations. Another factor that has benefited the music industry interface with the economy has been in keeping the cost of recorded material down. Over the last ten years, the price of recorded material has gone down which has benefited the consumers ability to purchase recorded material. For an average trip to the movies with popcorn, one can buy a CD that lasts a lifetime. If CD prices had followed inflation, the CD may have grown outside the purchasing ability of most teenagers.

Another environmental interrelationship with the industry is technology. MIDI and other musical instrument advancements have increased both time and pitch accuracy, as well as perfect reproducibility for the recording environment. These advances have also raised the quality of the live show with controlled light shows based on the music arrangements or triggering by the human voice. All this technology just enhances the appeal of the music industry. The high speed of data traffic that is available now is generally an untapped resource by the industry. This will be an area that will be discussed in more detail in the section concerning the Kondratiev cycle, and technology utilization.

An often unrecognized interrelationship that the American music industry has is with the average citizen of the world. American music has also improved Americas relationship with the average citizen in almost every part of the world. American artists like Michael Jackson or Billy Joel are bigger in some countries (and probably have more persuasive power) than the American president. American music has been a type of foreign ambassador for western culture and ideologies. Generally this is a one way street though, America to them, not much back.

EVOLUTIONARY HISTORY OF THE SYSTEM

Stages of Growth

To evaluate the growth of the Music Industry in America, the sales data from the 1920s presented in Figures 8-10, will largely be used. The American music industry in the 1920s largely followed the European and French genres. The leaders in world music then were the Germans, French, Austrians, etc. Largely the music powerhouses of the 1800's. With the invention of the phonograph by Edison 1877, this created a recorded music industry. Since the European music society was much more developed than the American music society, phonograph usage and sales grew much faster in Europe. Within forty years from the invention, the recorded music industry in America grew to a \$100 million dollar industry (1920 dollars). A significant point in the structural evolution of the music industry occurred during the years of the 1930's depression. The depression of the 1930s hit the industry hard, since recorded music is far less important than food and shelter (that statement depend on who you talk to though). In 1933, the industry dropped to only 5.5 million dollars (1933 dollars), barely survival. It took over ten years to 1943, for the industry to recover to the 1921, \$100 million mark. The 1940's and 1950's saw the best average year to year improvements for the decade averaging 10 percent per year or better. By the 1960's a stabilizing effect took over and average growth per year has averaged only one to two percent per year during the decades of 1970 and 1980. The growth of the American music industry has been felt world wide. The United States maintains over a 1/3 market share of all recorded material sold in the world.

During this same time period various formats of recording medium and technologies have been introduced to the consumer. The 1960's had new smaller tape formats introduced, the 8-track tape and the audio cassette. The 8-track caught on much faster due to its continuous play feature and pseudo random access. The drawback was the size of the tape, approximately 1 x 6 x 8 inches. The audio cassette although was much smaller only half the size and much less in weight. The audio cassette didn't have the random access feature but for the size and weight, the consumer was willing to fast forward and rewind a little more. The greatest feature of these new tape formats was the incorporation of the tape player into the car radio. Now people could play music of their choice in the car, not being stuck with only the radio. The 1980s brought also recorded music medium called the CD. The CD uses a digital data as a sound storage medium, instead of analog. The recorded music is much more crisp and doesn't have age loss due to tape stretching or scratches like a vinyl album. Also the timing of the music no longer depended on mechanical speed. The timing is controlled through electronic signal. As discussed earlier, the CD destroyed the phonograph album as a recorded medium. Also the CD put another big surge of energy and capital boost into the industry. See Figure 14, note the growth in total sales following the growth of CD sales.

Next, it would be appropriate to relate the evolutionary growth of the American music industry to the Kondratiev economic cycle, shown in Figures 5 and 6. Since the recorded music industry is relatively young, just over one hundred years, and the only data that is available at this time to the writer only goes back to 1921, one can only look at the approximate peak of Kondratiev III through the fall of Kondratiev IV. The first notable similarity occurs with the decline from the 1920s to the all time low of the 1932 through 1937. This aligns perfectly with the depression/interface of Kondratiev III/IV. Concerning the recovery and prosperity leg of Kondratiev IV, if this leg is considered to follow the characteristics of a logistic function which is presented in Figure 3, the 1940s would represent a decade of reconfiguration from the depression of 1930s. The 1950s and 60s would see increasing rates of growth almost linear with a slowing effect taking place around inflection point K/2 or approximately 1960. (Note the growth from 1956-1965 on Figure 8 represents some of the most linear growth on the whole chart.) Growth from around 1960 would still be positive but rate would decline to a tapering off between 1970 to 1980. Fascinating is the fact that Figure 3 states that a structure that follows a logistic growth pattern will see restructuring at the top of the logistic function. This corresponds exactly with the restructuring of the industry in the 1970s creating the Big Six record companies. If the music industry structure continued to follow Kondratiev IV, they would begin to be a negative trend at least by 1980 to strong negative decline in 1990s. Reviewing the actual decade to decade rate characterized in Figure 10, the trends of recorded music sales follows extremely close, except for the negative trend that should be seen in the 1980 plot point. This plot point includes data up to 1989. A reason why a negative average wasn't calculated could

have to do with the way the time periods were split, because the average year to year change between 1979 and 1985 was -5%. The fact that the trend has not gone negative yet is minor considering the whole trend of sales has followed the Kondratiev economic wave since the 1921 very closely, with massive restructuring occurring in 1970-80 timeframe. If the music industry does indeed follow the Kondratiev economic cycles, there should be some concern for the 1990s, as far as a decline in sales. More on this phenomenon will be discussed in the section on dissipative- structures.

Continuity/Discontinuity

The most stable/linear time period for the music industry has occurred from 1950 to 1970. Growth was consistently 5 to 10 percent. Prior to the 1950's was extremely high growth, while after the 1970's there has been a general slowing effect.

Critical Threshold.

The most obvious critical threshold has occurred since 1960 and was organizational set with the consolidation of the Big Six record companies. All though most see the consolidation as a stabilizing effect, as presented it seems to be the economy that has drove stability. This is evident by the fact that since the consolidation, growth nor decline has note really been seen that is different than the economic cycle presented by Kondratiev. This would indicate a larger superstructure shaped the industry. Realizing this the Big Six must prepare for the future with increased flexibility and new forward thinking individuals in management..

Catastrophes.

The Depression of the 1930s drove the industry to a 5 million dollar entity. This could be thought of as a catastrophic jump. The most interesting catastrophic jump was seen in the formation of the Network as well as the break up of the Network. Rumored to have been formed during a meeting in New York in 1978, the first mention was seen in a Billboard Magazine article in 1980 (Dannen 1990). The success and growth of the Network is rumored to be through the use of payola in the form of money and drugs that were given to program managers, as well as VPs at record labels getting kick-backs for using the Network. Some payola was even disguised as birthday presents. The Networks rise had much to do with the consolidation of the Big Six in the late 1970s. With promotions locked up by an expensive entity, the Big Six were the only ones that could afford them, thus driving the last independents into bankruptcy or submission to being distributed. This structural decision making change in promotions policy by the Big Six, caused the promotional support structure to jump to a new level of stability, the Network. Once the Network gained its independent power from the Big Six, they played each of the Big Six against eachother and each of the Big Six had no choice but to use them or their material wouldn't get on the radio. By 1986, as quoted by Elliot Goldman, president of RCA, "You got the feeling you had to hire them so bad things wouldn't happen" (Dannen 1990). In 1989, the opportunity came when one of the Network members was indicted on racketeering and payola. The Warner and CBS combined in a campaign to "not use criminals for promoting records." Within a year the Network was broken and a catastrophic fall (catastrophe theory fall) was seen, with promotional support prices dropping more than in half.

Dissipative Structures.

The whole music industry can be seen as a dissipative- structure, that dissipates energy into the American economy in the form of recorded music and promotional information. Internal to the music industry operates substructures that dissipate energy into the parent structure such as: new genres of music that revitalizing old tired out genres; artist introduction, growth and decline; political decision making of individual record companies; and radio station airplay decisions. External structures also dissipate energy into the music industry such as: technological advances and Government policy making

(copyright laws, payola laws, anti-trust, etc.) All these sub structures influence the parent structure causing structural changes that irreversible change the structure forever. Figure 15 gives a graphical illustration of how the music industry could be thought of as a dissipative- structure. The glass container could be thought of as the music industry structure pouring/dissipating energy (recorded music, artists, genres, and promotional information) into the recorded music market. The market can be seen as the glass that can absorb as much energy the music industry can offer, provided the orifice in the middle is wide enough to let the energy through. The environment (economy, societal value system, consumer taste towards certain music, etc.) controls the orifice that can either contract or expand, allowing either more or less energy from the music industry to pass through (consumption). If the orifice shrinks (the environmental is full, not hungry) a saturation of the market will occur, which in turn can cause further contraction of the orifice, and wasted energy will spill over the sides (diminishing returns). The music industry has control only within it's sphere of influence to try and expand the orifice. Items within their sphere of influence are price, product release, genres, artist releases, promotional energy, and technology utilization to name a few. The price change can somewhat helps with economic fluctuation, and assuming the industry is affected by the economy, this fluctuation can be tracked. Artist and genre changes as well as promotional energy help in consumer taste. This can be monitored through sales of certain artists and genres. Industry stances that align with consumer values can also help (i.e. Warner Bros. stance against Ice-Ts Cop Killer Album). Public opinion indicators can be identified with market research. Each substructures within the music industry can also be looked at for their dissipative-structure characteristics along the lines of this hour glass analogy.

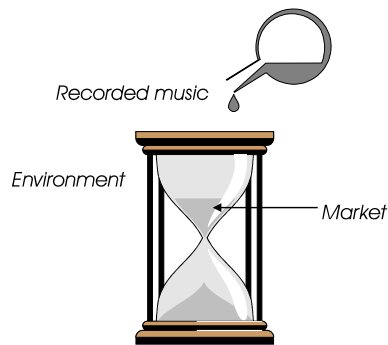


Figure 15 - Dissipative-Structures, Hour Glass Analogy

Groups - Music groups and artists from their birth dissipate energy into the market through music material, style, and persona (artist image). This energy must be absorbed by the mainstream music consumers attention. This “attention” could be thought of as a field that absorbs the artists energy. For the artist or group to have longevity in the business, not only do they have to present music product and a persona that has a high level of energy absorption (maintaining orifice diameter in Figure 15), many other groups are competing for this same energy absorption field, for their energy release. To add to this quandary, the genre the artist participates also releases a dissipative energy, often separate from the artist, but this will be discussed in the next section. The “attention” energy field has a limited amount energy that can be absorbed by groups persona, music style, material, and promotional exposure before saturation will occur. The artists music, style or persona can single handily saturate the markets absorption energy for their particular features, thus the consumer then becomes tired of the artist, which in turn will be evident by lowered sales. This happened to a Rap Artist named MC Hammer, a group called Wilson-Phillips, because the market got tired of their music and persona so the hour glass orifice constricted and sales dropped. Mariah Carrey almost saturated the market because she released three albums back to back and did not allow the market to become hungry again for her music (hunger could be seen as expanding the hour glass orifice). Michael Jackson has to be very careful of this fact because his material is played so heavily on the radio. Sony even publishes stop play orders to radio stations to limit the air time of some of his material. This is a phenomenon that artists, producers, songwriters and record companies should be aware of. The response would be to modify their persona and style every new release to create

a bifurcation point, which opens the hour glass orifice, thus creating a new pocket of energy that the consumer is willing to absorb. Artists like Prince and Madonna have taken this concept and done very well with it adding many years to their careers.

This leads us to genres. An artist like Michael Jackson, Elvis or a group like the Beatles have such an impact of the sound of their genre, that it not only changes the time frame that they exist in but future styles and genres of music. All music writers and producers are shaped by their idols and the music from the past. Every great artist has a couple of artists or writers that they say influenced them. It's the process of learning to write marketable music.

Genres - Like artists, music genres must also maintain this "attention" absorption energy level. This tends to be more difficult, since multiple artists, record companies and producers are involved in a genre and are "milking" it for all they can. A sort of tragedy of the commons. All genres compete for a common music industry attention field, which is also driven by an economic field. With a fairly stable amount of dollars being spent on recorded material from year to year, this requires that for a growth in one genre requires a decline in another. Figure 11 shows this phenomenon, with a climb in Country and Urban Contemporary, a decline in rock occurred. Generally the growth of a genre helps the total sales pictures, creating a similar effect as portrayed in Figure 6. This genre doesn't stop at the parent genre. This phenomenon also occurs within the internally to a genre, with style changes being the substructure within the genre. Rap music shows this phenomenon. There have been five major style changes in Rap since the genre took hold in the late 1970s. Each style dominating and out selling the previous one. All the genres have seen this phenomena, Jazz had Big Band, Dixieland and Bee Bop. Rock had folk, British Invasion, Punk, Heavy Metal, Acid, and more. These genre growths and style changes occurred a bifurcation points. This bifurcation point occurred either because the old style became saturated and let a new style work its way in. Or a new style, generally caused by a new artist, nucleated with tremendous energy to push the old style by the away side (catastrophic jump). A catastrophic jump occurred when the Beatles where introduced to America, with two weeks, the Beach Boys type of music totally vanished from the top ten pop chart. See catastrophic fold jump, Figure 2.

Packaging Types - This category pertains to way the recorded material is packaged (album, tape, CD, etc.). The dissipative energy structure of packaging types is more linked to technological advances, and easy of use to the consumer. Introductions of the 8-track and cassette had a considerable impact on the 1970s. Most individuals think that the CD caused the vinyl album to be retired, but looking at Figure 12 indicates that the audio cassette caused the decline of the album, the CD just finalized the demise. The dissipative- structure effect on packaging type can be either induced by novelty, as the 8-track tape did, or an internal perturbation such as the CD, which was caused by an overall sound quality enhancement as well as easy of use and durability. The CD had the most direct and obvious effect of all packaging types which can be seen by the CDs growth with a parallel trend occurring in total sales as seen in Figure 13.

Record companies - Record companies can be seen as organizational dissipative- structures. Record companies make decisions on which artists to support and releases, which genres to support, promotional decisions as to how much and how little. All these decisions not only effect the record purchasing market but record companies around them. The growth of independent record companies specializing in Disco saw tremendous growth until the bottom fell out from underneath the genre in the 1980. Other organizational growth can be seen by acquiring smaller record companies (which really means acquiring their artists), or acquiring great artists off the street as Geffen did with Bon Jovi, Guns N' Roses, and White Snake. Note the structural change of record companies can be caused by genre or artist dissipative- structures. The Big Six consolidation caused great structural changes by cornering the distribution channels which effected not only sales of their own artists but the sales of other labels artists that they distributed. Centralizing decisions making for genres and artist release can total reshape the evolutionary path of the whole music industry structure.

Radio Stations/Video Stations - The radio/video stations can be seen as dissipating entertainment energy, of which the listening market must absorb. When entertainment utility declines, the attention field shrinks. When entertainment utility grows the attention field grows and the radio station sees this as a larger audience. Radio stations in large cities are feed by sell of commercial time block. When the station is the most listened to station in the town, they can charge the most for their time. The listening audience fluctuates can also fluctuate with the genre of music and the artists the program director selects to play, this is part of the entertainment utility. Both directly affecting audience size. Radio stations and video stations are not just at the mercy of genres and artists. They can have good DJs, good morning shows and other audience grabbers (money give aways), which in-turn improves entertainment utility, thus a station audience grows.

Cybernetic (System Dynamics) Structure/Behavior.

Sales growth and industry stability has seen cybernetic behavior since the 1970s. The Big Six are largely responsible for this, as less entities are making policy decisions which lowers the perturbations entered into the structure. The formation of the Big Six was largely an industry cybernetic feedback in response to market share and survival. In the late 70's the Big Six companies combined only had fifteen percent of the market. Most authors, like Dannen (1990), say the Big Six just wanted more market share. I say the Big Six felt the pinch of slow industry growth (Kondratiev IV peak Figure 5, cybernetic portion of logistic function Figure 3, macropsychological effects Table 2), and felt like consolidation was required for survival. Once one company started buy companies, a nucleation occurred with the other five jumping on the bandwagon, in the end their was only six survivors. This is an example of how the structure through a bifurcation point and feedback can cause nucleation to occur forming a new structure.

Mutations and Nucleations.

Genres - At a point of genre saturation and stagnation, decline in the attention field will occur thus moving interests towards other genre option. When this occurs the structure shifts allowing structures with less power in the past to climb in market dominance, see Figure 11. The most recent mutations that nucleated into influential genres are Disco and Rap music. Disco took over the pop market from the early 1970s through its quick death in 1980. Surprisingly, the first Rap music had it's seed in Disco, using Disco music with rap lyrics. Disco never quite nucleated to a structure strong enough to garner it's own Grammy Award category. Rap saw a slower growth than Disco until the mid-1980s when it became a force within the Urban Contemporary radio market, which it still holds today. Rap, nucleated to such a strong genre, that with pressures from the genres artist structure, negotiated a position Disco never attained. It's own Grammy Award category. Not bad for a genre that still falls into the Urban Contemporary genre.

Artists - New artist introduction into the recorded music market could also be seen as a mutation, and through attention energy feedback, and increased promotions the climbs to a level of prominence in the market. The most recent examples of Artists that caused a mutation and nucleation within the music structure was Nirvana, Guns N' Roses and Mariah Carey. Nirvana a young Seattle group, put the rock music industry on it's ear with its tremendously successful debut album. The group spawned a hunting campaign from all the labels in search of other groups with Nirvana's sound. Guns N' Roses was another big act to hit the heavy metal rock scene. Their style was very successful on pop radio as well as rock radio (called cross-over) making millions for Geffen Records. Mariah Carey was an overnight success like Whitney Houston. The radio stations couldn't get her material on the radio fast enough to satisfy the ears of the radio listener. This didn't spawn so much new female artists as much as put Whitney Houston on the defensive to come out with stronger albums than she had ever done in the past.

Production Companies - Similar to the mutation and nucleation of an artist, production companies can start up, release a successful project, receive more work because of the previous success, and success feeds success, so a nucleation occurs until they become a viable entity in the production support sector.

Production companies like LaFace Productions and Flyte Tyme Productions, both introduced in the mid 1980's have totally reshaped the Urban Contemporary music genre. Even today, Kenny Edmonds (Babyface) of LaFace productions, every week has anywhere from 1 to 3 of his songs that he produced in the Top Ten. Teddy Riley is another producer that is credited with creating a subgenre with Urban Contemporary called Hip Hop. This subgenre shaped almost every uptempo song in the late 1980's and early 1990's. These producers have much more power to influence genres that artists, because they can produce five to ten artists per year, all shaped with their style.

Promotional Avenues - M_{TV} is a promotional avenue that mutated in the 1980's and nucleated to a powerhouse in the recording promotional industry. M_{TV} took around five years to nucleate into the promotional avenue giant they are today. M_{TV} is now the most important single entity for artist exposure, forever shaping artist exposure. The influence was so great that the concert circuit for live performances almost died in the late 1980's and early 1990's. Today, a concert has to have at least three major artists performing to pull in a crowd that just one could have pulled in just ten years previous. Other avenues for exposure that are growing are in soundtracks for movies and utilization in television shows. Fox Network has been using music videos lately during the credits at the end of a show. Also, world premiers of new videos have also been on major networks, such as the Michael Jackson videos.

Promotional Support - The Network, described early, formed/mutated out a 1978 meeting in New York. The consolidation efforts of the Big Six, provided the energy for nucleation, to a level of total promotional support dominance. The rest is history.

The Recording Industry - The whole recording industry started with a mutation called the invention of the phonograph, The industry nucleated quickly and through evolution growth has become a \$40 billion dollar industry. The Big Six as described early the Big Six structure occurred due to probably one or two labels buying up smaller record companies. The fear of being left behind or absorbed caused others to invest and consolidate thus nucleating into the Big Six structure.

Technological.

The major technological advances in the last 30 years have already been presented such as CDs, MIDI music instruments and digital recording. An exciting technology that was introduced to in 1993 to the recording industry by a company called New Leaf Entertainment in Florida. The technology is a new means of data distribution that uses high speed data transfer to imprint the CD right in the store and prints the jacket insert that goes inside the case. The ramifications as a bifurcation point and power shift have tremendous implications. The technology would basically act like a Juke Box, in that the consumer selects a CD to purchase, presses the associated selection, and a CD pops out a tray after a 2 to 3 minute process. The data, as presented by New Leaf, would be transferred via satellite to the JukeBox like machine within the store, and burn in the CD right their at the store. Hence, a miniature manufacturing station of CDs. This technology would eliminate the requirement for alot of shelf space, and a store would never have an out-of-stock situation. This would also eliminate excess product because it would be created on demand. Figure 16 shows a diagram of the general operation of the New Leaf technology (this is based on hearsay since New Leaf would not send me any material on the proposal).

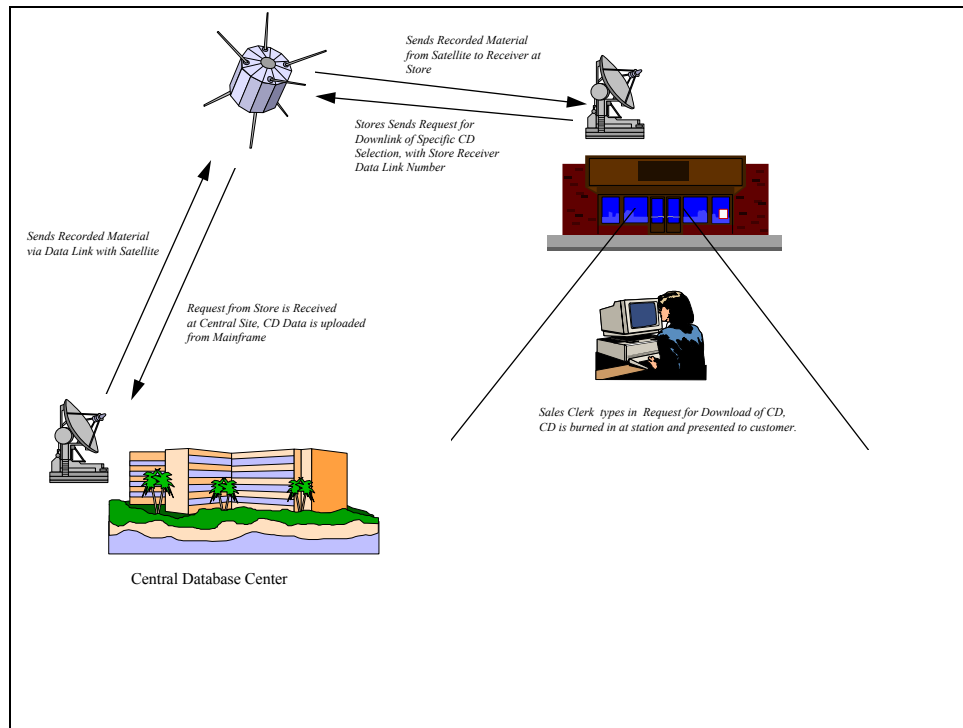


Figure 16 - New Leaf Entertainment in Store CD Manufacturing Station

Great Persons.

The first great person that should be noticed is Thomas Edison the inventor of the phonograph in 1877, the first medium to record sound. With 50 years, a recording industry formed and grew into a \$100 million dollar industry. Other individuals like Berry Gordy and David Geffen formed highly successful independent record labels despite racial and big industry barriers. Gordy's label Motown forever changed the music industry in America, especially since his company discovered Michael Jackson. Record executives like Clive Davis, Moe Ostin, Irving Azoff, and Walter Yetnikoff all helped in forming the Big Six in the late 1970s, which although limited some creative music from getting to the record store shelf, create a quite impressive structure which stabilized (hopefully not to a level of stagnation) an industry. Artists like the Rolling Stones, The Beatles, Michael Jackson, James Brown, Prince and Elvis forever changed the music of the world. And last are some promotions/radio giants like Dick Clark for Radio and one of the co-founders of M_{TV} Robert Pittman that forever changed the exposure of Artists to the world. These are just a few that as individuals can be traced to great accomplishment and caused structural change for the better.

Early-Warning Signs of Crisis or Opportunity

The consolidation of the Big Six is the biggest indication of a response to a felt crisis. The macropsychological phenomenon that are listed in Table 2 supports this. Immediate threat was tightening, perceptions of new market growth were narrowing (usually a reason for consolidation in any business). All this supports a decision making environment during the prosperity/recession apex. Drastic shifts in the sales of recorded music have not been seen, yet there is a definite correlation between the Kondratiev economic cycle which would indicate a downward trend in the very near future. This would cause an improved attitude towards new ideas and technology that has not been previously seen since the 1940s, a window of opportunity.

As presented previously, there is little industry wide structural change that can occur by a single artist or a single genre. Thus coming out of a downward trend is not likely to occur by a genre or artists. These internal evolutions of artists and genres will occur regardless of the trends of sales. For industries to survive major drops in sales, they must occur great advances in product development or drops in cost. As discussed previously new product development (artists and genres) have little industry-wide impact. So for a major shift to occur that could help the industry survive a sales dive, this will have to come in cost savings. This is where the technology of New Leaf Entertainment could come in. Delivery and handling costs per CD can be as high as \$1.00 per copy or approximately \$1 Billion for the industry. Through the New Leaf Entertainment, this delivery cost would be dropped to the cost of a link-up to satellite, or a local phone-call on a T1 data transmission line. T1 lines transfer data at 35 Mega Bytes per second and could fill a 2 Gega Byte compact disc in one minute.

ADAPTATION OF THE SYSTEM

Disparity Between Actual and Desired Conditions

The primary objective that New Leaf Entertainment received from the Recording Industry, was that the copyright holders were concerned with unauthorized access to the transmission. It is the writers opinion that this was just concealing their real concern, maintaining the power position, and distribution control. As long as the product has physical properties, the Big Six control distribution. Once distribution is accomplished by transmitting 1s and 0s, there is no position of power that they hold. Anyone that has a large enough database can be a distributor and download information. Remember the whole power structure the Big Six maintain is a distribution network. As far as copyright protection is concerned, data can be easily encrypted. Satellite transmissions are easily encryptible, television stations do it all the time for in home television satellite receivers. Banks transmits billions of dollars per day over these data lines. Even the US Government has overcome data protection and transmits Top Secret data over T1 lines. The real barrier is to the Big Six distribution power structure.

Recommendations for Reducing Disparity

To maintain the Big Six power structure, the Big Six could manage central database hubs in regions of the country that have hundreds of dial-up ports to download data via T1 lines. The Big Six would maintain a large capital investment that most small labels could not afford.

If the Big Six don't utilize the technology, the technology will be picked up by smaller entities, which through nucleation could take over the Big Six distribution structure with little financial investment. A bifurcation point that the Big Six probably couldn't survive.

Restructuring/Reconfiguration

First the Technology would have to be accepted, used and nucleate from a sort of novelty item in a corner of the store, to later dominance in the whole store. Only the newest artists would be available on the machine, since those are usually the ones that sell out the most. Once the consumer began to accept the technology a move towards transferring all the titles to these databases would be seen. This would reduce store size and raise the total individual selections available to the consumer. The structural constraint would move from distribution and more toward the promotional avenues in getting an artist exposed to the consumer. Regardless of the new distribution situation, record companies are always looking at new ways to get their artists exposed.

Future Forecast

I see the future going towards a less physical distribution system for recorded material with multiple mini purchase sites. With the new information highway and fiber optics going into everyone's home, the future may see downloads of material right into an individual's harddrive. Structurally they would need to be a raise in technological for data protection. This is already seen outside the music industry for electronic data copyrights on electronic transfer systems such as the internet. Genres will continue to grow and fall, artists will continue to rise and fade away. Musical instruments will get smarter and smarter, recording will get easier and less expensive. Power structure will be based on influence and less on capital investments. I see the organizational opportunities for forward thinking individuals to rise greatly in these declining times. New ideas will more likely be accepted and implemented, improving customer satisfaction and music quality.

CONCLUDING REMARKS

As presented in the paper, the recording music in America is a complex, multifaceted, structure with internal and external influences that constantly perturb the structure causing bifurcations, causing structural change. Genres, artists, and the music industry all dissipate energy into the market through recorded music, artists personas, genres of music and styles within the genres. By understanding how systems evolve with limits to growth, and saturate the market decisions can be made about how and when to release new or existing artists. When to change an artists persona or style to bring about a new hunger in the market. And when to look at technology with an open mind and implement it appropriately.

Concerning the Kondratiev IV/V interface and windows of opportunity. The primary opportunity will be the opening of a very closed and dominant structure that is maintained by the Big Six. This is not to say I'm against big record companies. I am a musician and a creator of music, desiring to share my work with anyone willing to listen, and hopefully willing to buy. Any structure that limits artists from sharing their material with the world is a sad one. As far as the recession that will probably occur in the next decade, I foresee major changes in the recorded music distribution system. This is the only function in the industry that is set in stone, and is a very expensive in its current distribution methods. Using technology as the one presented by New Leaf Entertainment provides the flexibility to meet demand as it occurs, product will never be physically created that isn't bought. Are the Big Six going to ever except a technology that threatens their very power structure. Probably not, until a mutation occurs and some smaller entities begin to use the technology. Nucleation will occur through savings to both record stores and record companies. This will drive the technology so big that the Big Six will have no choice but to use it as their distribution system.

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BIBLIOGRAPHY

APPENDICES