



Journal of the
Music & Entertainment Industry
Educators Association

Volume 15, Number 1
(2015)

Bruce Ronkin, Editor
Northeastern University

Paul Linden, Associate Editor
University of Southern Mississippi

David Schreiber, Associate Editor
Belmont University

Published with Support
from



Complexity, Adaptive Expertise, and Conceptual Models in the Music Business Curriculum

David Bruenger
The Ohio State University

Abstract

Music business curricula are necessarily complex because the subject itself is multifaceted and continually evolves in response to technological, social, and economic change. But in addition, if a goal of music business education is to prepare students to participate effectively in the business of music, then its curricula must not only reflect the evolving complexity of the music marketplace, but also foster the development of skills sufficiently adaptable to its changing conditions. This article uses complexity theory and the concepts of routine and adaptive expertise to explore how the curricular framework of music business studies might be adjusted to deepen understanding of the principles, processes, and patterns, as well as the critical analysis and creative problem-solving skills essential to successful entrepreneurship in the field.

Keywords: curriculum, complexity theory, complex adaptive systems, adaptive expertise, routine expertise, transfer, transactional model, concept model, meta-model, process map, music business, music business education

Introduction

Over the past one hundred years, the musical experience and the means to monetize it have been thoroughly transformed—and more than once. The systems that have supported the mass production, distribution, and consumption of music involve many individuals, organizations, relationships, and processes. As new technologies, social behaviors, and economic conditions emerged, these systemic frameworks—whether based on records, radio, print publishing, and live shows; or downloads, streams, licensing, and live shows—were inevitably affected, either adapting to changing circumstances or collapsing into irrelevance, insolvency, or both.

Both the music production-distribution framework and its ongoing evolution exemplify a *complex system*. It is “complex” not only in the casual usage of “complicated,” but also in the more technical meaning of the

term. As broadly defined across multiple disciplines, a “complex system” is a network comprising many discrete components or agents that interact with one another at a local level and, though lacking any centralized control, produces coordinated results that go beyond the sum of the individual actions. While the workings of such a system tend to follow consistent, observable patterns, they are also organically adaptive to emergent changes in the environment.¹

Such complex adaptive systems—as they are sometimes called—have been observed in nature, computer networks, as well as in social and economic contexts. It is therefore only a small step, following Tussey (2005), to state that the business of creating and distributing music as a whole, “can be described as a complex adaptive system in which legal, political, economic, socio-cultural, and technological subsystems converge, interact, and coevolve.”²

A detailed discussion of complex systems and complexity theory in general is beyond the scope and purpose of this article. But whether considering “the complexity model to be directly applicable or merely a helpful analogy or metaphor,”³ it does present two practical considerations for music business educators. First, there is the capacity of the model to improve understanding of the music business, its agents, and processes. Second, applying a complex systems framework to music enterprise illuminates particular challenges in designing the curricula used to teach it.

Curricula for a Complex System: Practical, Historical, and Adaptive

One consequence of such complex subject matter as the music industry is that there is so much information to cover. Inevitably, content is streamlined in order to fit the constraints of class time, degree plans, and comprehensibility. Often the streamlining process leads to a curricular focus on preparing students of music commerce to understand “how it works.” Or perhaps some combination of how music commerce used to work before the digital era and what has happened to it since. This is what may be called a “best practices” or *practical curriculum* approach.

Practical Curriculum

The traditional—and in many ways still standard—music business curriculum is based on practice: the tools and procedures that are commonly used and found to be effective today—however “today” is defined.

There is unquestionable value in understanding current best practices in the field. It is essential if one of the objectives of music business education is to produce competent professionals.

One problem, though—or perhaps limitation is a better word—with the practical approach to curriculum is defining the relevant time frame. Because the music business is volatile, subject to changing technologies, legal frameworks, social behaviors, and economic conditions—not to mention the transient tastes of the listening public—it is challenging to keep studies of current practice “current.”

It is more difficult still to anticipate what is just over the horizon: the not yet, but soon to be current demands of an emerging marketplace. Prediction further out is speculative at best. Thus, the tendency of the practical curriculum is to focus on teaching “what we know” and “how it works” now. This approach comes with a real and ongoing risk that the information covered will be outdated, in some cases by the end of the semester, let alone by graduation.

This dilemma of the practical curriculum parallels challenges presented by the music marketplace. A great value of any adaptive system is its capacity to be emergent—that is, to respond to changing conditions. Consequently, music business curricula need to be adaptive to keep up with the marketplace. But should they not also encourage the development of some kind of adaptive capacity in students if it is a program goal for them to be able to effectively participate and produce value after graduation? If that is the case—and it is the position of this paper that it should be—then students are going to need more than even a detailed understanding of current practice.

Historical Curriculum

One way to broaden student understanding of music enterprise is via the historical survey. This method traces the evolution of commerce in music, copyright law, relevant technologies, and perhaps even public policy. Goals of this curricular approach include providing context for current conditions, understanding how they developed, and perhaps even a consideration of recurring patterns of production and consumption.

One challenge with the historical approach is, again, the amount of potential content. Where is the optimal place to start? Perhaps looking back to the golden era of print music publishing, the early days of sound recording, or the rise of radio networks? Regardless of the starting point,

there is a more critical issue. Because of changes in the technologies of creation, production, promotion, distribution, and consumption, historical examples can seem impractical and irrelevant today. Further, even when comparing one historical event and another (where both “feel” equally outdated) it is easy to be more distracted by contextual differences than to recognize fundamental consistencies.

If, for example, one were to compare the crises of print music piracy in 1899 and audio piracy in 1999, that pairing could seem to be, at most, a mildly curious parallel lacking practical utility. Certainly there are fundamental differences between the products being pirated and the means by which pirated copies were distributed. In addition, the intellectual property laws in place in each era, as well as the means by which copyright owners could and did respond to infringement, are dissimilar in many respects.

Because of those differences, it is relatively easy to miss the fact that one of the greatest problems for the publishing industry in the years around 1899 was that public sympathies were with the pirates, not the rights holders. And those sentiments were not only the result of lower prices for bootleg copies, but were also inspired by a public perception that legal publishers took advantage of creative artists, preying upon them by paying so little, while at the same time overcharging the public. Further, many were outraged by what they saw as the strong-arm tactics of publishers against pirates.⁴

Those factors were just as critical for the recording industry in the years following 1999 and that fact is far more significant than the differences between a copy of sheet music and an MP3 file. Awareness of the social reaction and public relations consequences for publishers in 1900 could have provided a predictive and cautionary reference for record labels and the RIAA in the litigation strategies they pursued a century later. In terms of strategic outcomes—in this century as in the previous one—the public has not been won over by “big business” rights owners, and piracy has been only marginally reduced.

There is a lesson in that lesson. It suggests that a historical curriculum is more valuable when it emphasizes patterns and comparisons. Historical details change, but comparative analysis between one event and another can reveal underlying principles that remain consistent, whether based on human nature, economic tendencies, or the fundamental characteristics of the music experience.

But historical comparisons, however thought provoking, still have

only a limited value in the contemporary marketplace unless they can be effectively adapted from one context to another. It is one thing to see, based on historical precedent, that a strategy has not worked in the past. But determining what would work now, whether or not a previous strategy is adaptable or an entirely new one must be developed, is another thing entirely. Teaching students how to do that would require another kind of curriculum: one that encompasses complexity, practice, historical context, and adaptivity.

Adaptive Curriculum

An adaptive music business curriculum would include both “how it works” and “how it has worked” content as well as comparative analysis and pattern recognition skill development. It would explore not only how, but why a system or tactic works when it does and why it fails to work when it doesn’t. The goal would not be to catalog past successes and failures or simply understand current practice, but rather to extract principles of operation that are consistent and adaptable across a variety of contexts.

In studying such principles historically and deliberately drawing comparisons over time and across different contexts, students could begin to develop the ability to analyze what is happening as it happens, recognize whether or not it has occurred before, and what response—familiar, adapted from another context, or entirely new—might work best in the emergent situation.

It seems clear that such a curriculum would not only have to include elements of both practical and historical curricula, but also conceptual, analytical, and problem-solving tools and exercises specific to the adaptive domain. Further, if the goal of the practical curriculum (as defined in this paper) is to produce entry-level experts in the field as it stands, then the goal of the adaptive curriculum—to have real utility—would also have to cultivate expertise. It would have to be capable of producing graduates with the tools to efficiently meet the existing demands of recording, publishing, and promoting music, but not be restricted by them when facing the unexpected.

Theories of Expertise

Preparing students to become efficient professionals in the music business as it works today requires providing opportunities to acquire knowledge and develop skills in that setting. The literature of expertise

education defines this as *routine expertise*. If to that efficiency in standard settings one wishes to add a capacity to adapt to changing conditions, then it becomes necessary to consider what is called in the research literature, *adaptive expertise*.

The groundbreaking work of Hatano and Inagaki (1986) first articulated the distinction between *routine expertise* and *adaptive expertise*.⁵ Their research focus was to determine how students could be taught to adapt a previously learned solution to a new context.

They define “routine expertise” as the mastery of known procedures and having the goal of developing increased speed and efficiency in their application. In contrast, while “adaptive experts” acquire the same practical knowledge, they do so in order to develop a conceptual understanding of how and why a given process works. Routine experts operate at peak efficiency in the world of known problems. Adaptive experts excel in their ability to analyze problems and repurpose existing solutions or create new ones as needed.

The analytical capacity of the adaptive expert is of particular interest in the context of the music industry. If pattern recognition is a highly relevant skill and one that is based on an understanding of historical trends, patterns, and behaviors, then it follows that being able to recognize deviation from those patterns is of equal or even greater value. Consider for example how effectively the recording industry has historically been able to optimize and extend existing musical trends and processes and how often it has been caught off guard by the unexpected emergence of a new style, social behavior, technology, or some synergy of all three.

From a problem solving perspective, the routine expert tends to view all problems categorically, in line with what he or she knows to be standard operating procedure. In contrast, “rather than *assuming* that their current knowledge and their problem definition are correct, adaptive experts draw on their knowledge in light of situational factors or unique aspects of a case to formulate a *possible* explanation or a *theory* of the situation which they test in the given context of the problem at hand.”⁶ As a result, the adaptive expert is more able to distinguish between what is a “normal” situation and when conditions deviate from the norm.

Returning to the 1999 audio file-sharing/piracy example, routine expertise is what drove major label decisions to attempt to minimize the threat (Napster and other file-sharing services) via the legal system using existing copyright law as a mechanism. Copyright infringement *is* against

the law. There *are* legal remedies provided for copyright owners. That *is* how the system is intended to work, that is what the (routine) experts recommended, and that's what the RIAA and many labels did.

But there was another dimension of that unfolding situation to consider. In the wake of those legal actions, Napster's representatives began to negotiate with record labels to make a case for the legitimate value of file sharing to the recording industry. Apparently the founders of Napster had recognized early not only the possibility of being "sued out of business" for their creation, but also the potential that "artists and record labels would appreciate the distribution mechanism and the amount of data you could pull from it—understanding who's listening to what, who's engaged with what content."⁷

The Napster team—coming from an innovative and adaptive perspective—assumed that this forward-looking strategy would be recognized by, or at least explainable to, major labels. Considering the importance of digital delivery and data analytics today, it was a remarkably prescient, if naive position. On the basis of the routine expertise at the labels of the time, it was concluded that Napster offered little of value. According to Jay Samit, for example, then an executive at EMI:

Shawn and Sean came in, and they didn't have a model. Their model was: Somebody other than them makes money. Somebody has to pay. I said, "Come back, and tell me how someone is going to get paid." And they never came back.⁸

In a commercial business, somebody does have to get paid. That's a foundational truth. It's routine. A more adaptive perspective at the labels, however, could have led to the recognition that the problem as presented—file "sharing" where nobody pays—did not fully describe the larger social situation. Or that on the scale represented by Napster, a massive shift in the mechanisms of distribution and consumption of recorded music represented an unprecedented opportunity. Shawn Fanning and Sean Parker may not have understood the traditional record business (lacked routine expertise) but neither did record executives recognize the socio-technical shift already in motion or that traditional responses would not be effective to mitigate its effects—that an unprecedented solution was going to be necessary.

Ultimately, an adaptive solution for the digital music era did emerge. It came from Apple in the form of the iTunes store: a “new” solution for an emergent problem. But that innovative response was actually based on adaptation of old ideas—music “stores” and single “record” sales—to the new online context. Apple provided the large on-demand catalog of songs that listeners were coming to expect and they did so at a price point close enough to “free” to convert many sharers to customers.

In addition, Steve Jobs recognized something that the Napster team did not: he had to sell the concept to record label executives before he could sell MP3s to the public. That required providing real protection for copyright holders in the form of Digital Rights Management (DRM) copy protection software⁹ and, in the beginning, limiting playback to only Apple devices.

Once Jobs had major label buy-in for the iTunes concept, he was able to establish an online digital “record store,” but his real innovation was more profound. By creating and integrating the software and hardware for both listening to, and purchasing, music, he transformed the relationship between distribution and consumption, placing Apple in a position of dominance in the music download market that remained unchallenged for years.¹⁰

The products and processes necessary to create and implement iTunes on a scale that transformed business practices and social behaviors alike exemplify the potential of adaptive expertise to impact the marketplace and society. If the goal of music business education is to nurture entrepreneurs, leaders, and creative problem-solvers—people who are capable of creating value in complex and evolving markets—then the cultivation of adaptive expertise must become a core objective of music business programs. If music business educators stipulate the truth of that assertion—that adaptive expertise should be taught—then the questions that inevitably follow are can it be taught and how?

Teaching Adaptive Expertise: Facts, Concepts, Transfer

There are disciplines of study that already make the cultivation of adaptive expertise in their graduates an explicit goal. There is a body of research in engineering, for example, that explores how students can become adaptive experts during their education. One study on undergraduate pedagogy operationalizes the component elements of adaptive exercise as follows:¹¹

Adaptive Expertise	=	Factual Knowledge	+	Conceptual Knowledge	+	Transference
---------------------------	---	-------------------	---	----------------------	---	--------------

Obviously there will be significant, discipline-specific differences in content, but it is the position of this paper that this formulation can provide a valuable template for the design of a music industry curriculum and pedagogy that support adaptive expertise. The following sections consider the individual elements and then their combined application to music business teaching and learning.

Factual Knowledge

Following the curricular analysis above, it will be helpful to subdivide factual knowledge into two categories: a) standard practices and current conditions in the music industry, and b) historical structures and events as a basis for recognizing and understanding trends and recurring patterns.

In terms of covering current (or relatively recent) business conditions and practices, music business education today is in good shape. There are a number of strong texts available that provide detailed information that is often (if not always) up-to-date and reflective of current developments. There is also ample information available online that—with careful vetting for accuracy—can provide insight into emerging musical, legal, business, and technological developments.

With respect to historical knowledge as a foundation for understanding and recognizing trends and patterns in music production and consumption, music business students are perhaps less consistently well informed. Still, most if not all will be aware of more recent history and, for example, the impact of file sharing on the recording industry business model and the subsequent developments in digital downloading, streaming, and brand-based licensing.

Where they may not be as well grounded is in understanding how the rise and/or fall of historical business models, technological innovations, and legal developments can reveal recurring patterns of consumer behavior and cycles in the business, economic, and regulatory climate. Without that, a critical basis for analyzing current and emerging conditions is missing.

Conceptual Knowledge

Historical context is also essential to the development of conceptual knowledge—an understanding of the principles underlying established practice in the music business. Developing a conceptual knowledge framework depends upon the study and comparison of historical and contemporary cases with a particular purpose: to identify conceptual principles that can be applied to more than one context, era, or music business sector.

Doing this requires the identification of consistent principles and also the development of process models that separate structural elements from situational detail. A discussion of formal process models is beyond the scope and purpose of this paper, but in a broad sense it is important to recognize that they can serve more than one purpose for music business students.

First, context-specific process models and case studies can deepen student understanding of how specific businesses currently work or have worked in the past. Such conceptual frameworks—particularly when introduced early in the learning process—can deepen understanding of each new layer of information and each new understanding makes student mastery of the framework more nuanced and adaptable as well.

Next, the concept of *business process model abstraction*¹² has a particular value in the education of the adaptive expert. Abstracted process models are the result of “an operation on a business process model preserving essential process properties and leaving out insignificant details in order to retain information relevant for a particular purpose.”¹³ In terms of cultivating adaptive expertise, that purpose will most often be to facilitate the application of the insight provided by one model to another situation. It is a particularly useful tool when the model can be transferred from an instance where the outcomes are known to another—perhaps emerging—situation where they are not.

Beyond that, the development of a *meta-model* that eliminates all contextual detail to highlight only the most fundamental structural processes affords additional opportunities for understanding and applying conceptual knowledge. A highly generalized process map can be transferred and scaled to a wide variety of circumstances. Students can apply this tool to each new level of learning and fill in the details specific to each situation as they go, improving understanding of the material, increasing mastery in the use of the model or map, and expertise in transferring relevant information from one situation to another.

An example of a context-specific process model would be an examination of the strategies of concert promoters such as Adolphe Jullien and Robert Newman in nineteenth-century London. A process model abstraction might be to compare multiple presenters of various musical entertainments from the era using key data points such as ticket sales, revenue, venue size, and promotional methods. Finally, a meta-model could be used to describe, understand, and compare all forms of musical experience based on performance regardless of era, genre, or locality (see the *Musical Experience as Transaction* model, below).

Transfer

Both the process model abstraction and meta-model depend upon the transfer of learning from one context to a new one. Such transfer is constrained by a number of factors. One of these is the distance or difference between the context of original learning and the context to which knowledge is being transferred. For example, “applying what one has learned to a slightly different situation” is called *near transfer*. *Far transfer* “refers to applying learning to situations that are quite dissimilar to the original learning.” When the act of transfer requires learning something new in order to make the connections necessary for transfer, then it is *creative transfer*.¹⁴ In the context of expertise education, near transfer would be more associated with routine experts and both far and creative transfer with adaptive expertise.

Another aspect of transfer learning with curricular implications is the distinction between *low road* and *high road* transfer. These concepts come from a model of transfer education developed by Perkins and Salomon. In it they define low road transfer as the “automatic triggering of well-practiced routines in circumstances where there is considerable perceptual similarity to the original learning context.” In contrast, they state, “high road transfer depends on deliberate mindful abstraction of skill or knowledge from one context for application in another.”¹⁵ High road transfer would obviously be associated with the development and application of abstracted process models.

The “deliberate mindful abstraction” of process models in the study of music business raises two fundamental questions. First, what are the necessary characteristics for such a conceptual model to support transfer, adaptability, and a progressive understanding of the production and reception of music? Second, since conceptual frameworks most support

learning when introduced early, which concept or concepts are the most fundamental to the subject of music enterprise? Ultimately, is there a foundational model that could be introduced at the beginning of study, would support learning new information, deepening conceptual understanding and reflection, and thus have the capacity to develop adaptive expertise throughout the music business curriculum?

It is the position of this paper that the answers to these questions are, yes.

Conceptual Models: Core Principles and Operative Dynamics

The concepts and processes essential to the adaptive curriculum in music business may be categorized as *core principles* and *operative dynamics*. Core principles are fundamental concepts that describe something that remains consistently valid across a wide variety of contexts. Consider for example, the importance of convenience to creating value through music.

In 2007, Fredric Dannen, author of *Hit Men: Power Brokers and Fast Money Inside the Music Business*, was asked, what is the future of the music industry? Part of his answer follows:

I believed I had discerned something about the consumption of recorded music—something startlingly obvious that has somehow eluded the record industry throughout its history, and led to the industry’s irreversible decline.

My epiphany, if you want to call it that, was simply this: consumers of recorded music will always embrace the format that provides the greatest convenience. No other factor—certainly not high fidelity—will move consumers substantially to change their listening and buying habits.¹⁶

Dannen’s response makes a point that is critical to understanding music consumption patterns, regardless of the era. While the legalities of music ownership and rates of compensation have received and (continue to receive) massive attention, they are not the most important determinants of what works and what doesn’t in the music business. According to Dannen, convenience of access always trumps everything else. If true,

it is a core principle, transferrable not only from era to era, but also from Dannen's specific context—recorded music—to potentially every situation involving music, people, and money.

To provide maximum utility, however, core principles must not only be descriptive, they must also be dynamic, functional, and operative. An *operative dynamic* describes in the most fundamental terms a scalable, transferable, and adaptive relationship or process—not only a structure, but also what it does. An operative dynamic must be able to explain the workings of music piracy in 1899 and 1999, or the initiatives of Thomas Edison and Daniel Ek with equal validity.

An operative dynamic must be able to illuminate music enterprise broadly, across multiple eras and sectors, and provide a framework for understanding how value is produced regardless of context. One such dynamic is based on the premise that, in order to produce value, music must exist in a social context. From that principle, it is possible to look at the musical experience—the platform for the creation and reception of music in all its forms—as an operative dynamic.

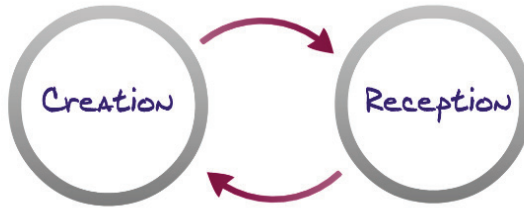
Musical Experience as Transaction

While musical endeavors can be entirely personal and never intended for public listening, more often than not, music exists in a social context. Simply, music happens when someone makes it while someone else is listening. That shared experience of making and listening to music can be understood as an exchange, or transaction, between performer and listener. It is only when music is placed in such a social context—where the musical experience is an exchange between people—that its full potential to create value in all forms—social, artistic, and economic—can be fully realized.

Framing musical experience transactionally is a powerful conceptual device. It helps us to describe how musical value was created historically, see how it is produced today, and predict in what contexts it is likely to develop in the future. It is arguably the foundational operative dynamic for the development of adaptive expertise in music enterprise.

This concept may be mapped as follows:

Musical Experience As Transaction



The circles in this diagram describe the two basic components of the musical experience: creation and reception. Each of the circles can also represent different actions and processes—performing/listening, producing/consuming, and so on. The circles may also describe agents—the people—engaged in these activities. Whether one define the person(s) acting on the left side of the diagram as Creators, Performers, Producers, or Content/Service Providers and the person(s) on the right as Listeners, Audience Members, or Consumers, the relationship between them is defined by an exchange of something: a “this” for “that” transaction (*quid pro quo*) represented by the arrows that connect them.

One of the most compelling aspects of this operative dynamic is that, while what the arrows specifically represent—technologies, distribution channels, revenue streams, means of communication, degrees of connectivity, and so on—have changed extensively and continue to evolve at an accelerating rate, the underlying relationship between creation and reception and, ultimately, between performer and listener have not. It is a diagram that explains roles and relationships in the eighteenth-century patronage system as well as the persistent value-generating potential of the live touring show today. It explains the enduring value of live music.

Sometimes the top arrow simply represents the sound traveling from the stage to the audience, or it can stand for a complex process administered by a record label, the iTunes store, or Spotify. Regardless, the upper arrow is always about making the artist’s music accessible to the audience. Sometimes the bottom arrow is as simple as the feedback of applause. Often it represents some form of compensation—money in a hat on a street corner or a 360-degree deal with a hundred agents, agencies, and moving parts. Increasingly today, the lower arrow can also stand for all of the data collected about listeners, which can then be used to amplify value creation throughout the model.

Across the history of commercial music, the business application of the model has depended upon attracting enough people into the reception circle to support mass production and distribution, making the arrows robust distribution channels and revenue streams. As the scale of enterprise expanded, each individual artist became a smaller part of the creation circle, increasingly populated by many artists aggregated by the recording and publishing industries. As the size and complexity of the overall transactional structure grew, the literal and symbolic distance between artist and audience increased both due to the complexity of the structures and the competition for “bandwidth” within each arrow.

In addition, the diagram can illustrate that the transactional dynamic works best when all the pieces are in place, connected, and in motion. Take away either of the circles or the arrows and the exchange stops. When, for example, Napster introduced a new means to achieve the top arrow function being performed by twentieth-century record labels and radio stations, the bottom arrow was immediately and profoundly affected. Similarly Spotify has an incredibly robust top arrow—massive international distribution of an enormous catalog—but the bottom arrow, as it connects to the creative artist, is a trickle. Thus the transactional model, while still valid for the streaming era, can be understood as unbalanced.

Consequently, Jay-Z’s initiative with the TIDAL streaming service can be seen as an effort to make the lower arrow—the one connecting the money from the fans and/or advertisers to the artist—more robust, rebalancing the streaming model. But if in doing so there is a deflation of the reception circle, then the diagram becomes unbalanced in another way.

Using the diagram to evaluate the TIDAL versus Spotify issue would reveal that in the creation circle, Jay-Z could and did pull in many big-name, big-ticket artists on the basis of making the bottom arrow more robust. But, the reception circle was constrained by the necessity of a higher price point for consumers. Compensatory inducements added to the top arrow—lossless audio, supporting better artist revenue, access to proprietary editorial content, and the potential for HD video—were not sufficient (at least early on) to drive consumer adoption on a sufficiently large scale. The result: another imbalanced transactional model.

The musical experience as transaction model can be introduced early in the study of music business and referred to repeatedly throughout the curriculum. By providing a foundational reference point, it enhances understanding of new information, promotes comparisons and transfer of

information between and among contexts, and offers a reliable point of departure for the critical analysis of emerging phenomena.¹⁷

Conclusions

If the goal of music business education programs is to produce expert professionals who can add value to the enterprise of music now and in the years to come, then curricula and teaching methods must be designed accordingly. The capacity of music business graduates to act effectively not only in the present but also as circumstances inevitably evolve must be based on a critical understanding of what has happened before, as well as how and why. The difference between success and failure in the present often depends upon clear understanding of the past.

Further, practical knowledge of past patterns and their potential relevance today requires the ability to distinguish the elements and relationships that remain stable over time from those that change more often. By identifying consistent core principles and persistent operative dynamics, students can learn to evaluate situations, transfer information from one context to another, adapt an existing solution to a new problem, or creating a new one entirely.

Core principles and operative dynamics could also provide a theoretical framework for research, which would in turn afford opportunities to refute, validate, and/or improve the conceptual models. But it is the position of this paper that the greater urgency is the application of such frameworks to an adaptive music business curriculum.

Knowledge, conceptual understanding, and transfer ability are the hallmarks of adaptive expertise and constitute the critical skill set for high level functioning in the complex adaptive environment that is the music marketplace. From both philosophical and pragmatic perspectives, it is vital that curricular goals be aligned with the marketplace as defined by the transactional music experience in all its diversity, variety, and boundless creativity.

Endnotes

1. Definition adapted from the following sources: "About Complex Systems," *New England Complex System Institute*, <http://necsi.edu/guide/>; "Definitions of Complexity," <http://serc.carleton.edu/NAGTWorkshops/complexsystems/definitions.html>; and "Complex Systems Modeling: Using Metaphors From Nature in Simulation and Scientific Models," <http://www.informatics.indiana.edu/rocha/complex/csm.html>.
2. Deborah Tussey, "Music at the Edge of Chaos: A Complex Systems Perspective on File Sharing," *Loyola University Chicago Law Journal* 37 (2005): 105, accessed April 29, 2015, <http://www1.it.luc.edu/media/lucedu/law/students/publications/llj/pdfs/tussey.pdf>.
3. Ibid., 103.
4. Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: The University of Chicago Press, 2009), 331-333.
5. Glyoo Hatano and Kayoko Inagaki, "Two courses of expertise," in *Child Development and Education in Japan*, ed. Harold W. Stevenson, Hiroshi Azuma, Kenji Hakuta (New York: WH Freeman/Times Books/Henry Holt, 1986), 262-272.
6. Valerie M. Crawford, Mark Schlager, Yukie Toyama, Margaret Riel, and Phil Vahey, "Report on a Laboratory Study of Teacher Reasoning: Characterizing Adaptive Expertise in Science Teaching," (presentation, the American Educational Research Association Annual Conference, Montreal, Canada, April 11-15, 2005), 4.
7. Richard Nieva, "Ashes to ashes, peer to peer: An oral history of Napster," *Fortune*, September 5, 2013, quoting Ali Aydar, then Senior Director of Technology for Napster, accessed April 29, 2015, <http://fortune.com/2013/09/05/ashes-to-ashes-peer-to-peer-an-oral-history-of-napster/>.
8. Ibid.
9. Long-since removed by the company due to competition from DRM-free services and consumer complaints. For discussion of early DRM issues with iTunes purchases and the iPod player, see, for example, Josh Lowensohn, "Jury Finds Apple Not Liable of Harming Consumers in iTunes DRM Case," *The Verge*, De-

- cember 16, 2014, accessed April 39, 2015, <http://www.theverge.com/2014/12/16/7402695/jury-decision-in-iTunes-iPod-DRM-case>.
10. Alex Pham, "iTunes Market Share Still Dominant After a Decade (Research)," *Billboardbiz*, April 16, 2013, accessed May 1, 2015, <http://www.billboard.com/biz/articles/news/1557486/itunes-market-share-still-dominant-after-a-decade-research>.
 11. Marcus G. Pandey, Anthony J. Petrosino, Barbara A. Austin, and Ronald E. Barr, "Assessing Adaptive Expertise in Undergraduate Biomechanics," *Journal of Engineering Education* 93, no. 3 (July 2004): 217.
 12. Sergey Smirnov, Hajo A. Reijers, Thijs Nugteren, and Mathias Weske, "Business Process Model Abstraction: Theory and Practice," *Technische Berichte Nr. 35 des Hasso-Plattner-Instituts für Softwaresystemtechnik an der Universität Potsdam* (Potsdam: Universitätsverlag Potsdam, 2010).
 13. Ibid., 4.
 14. Robert E. Haskell, *Transfer of Learning: Cognition, Instruction, and Reasoning* (New York: Academic Press, 2001), 29-30.
 15. David N. Perkins and Gavriel Salomon, "Teaching for Transfer," *Educational Leadership* 46, no. 1 (September 1988): 25.
 16. Stephen J. Dubner, "What's the Future of the Music Industry? A Freakonomics Quorum," *Freakonomics*, last modified September 20, 2007, accessed July 12, 2014, <http://freakonomics.com/2007/09/20/whats-the-future-of-the-music-industry-a-freakonomics-quorum/>.
 17. Students in the Music, Media, and Enterprise Program at Ohio State University did use the transactional model as well as other operative dynamics and tools to evaluate the strategic potential of TIDAL early in the spring of 2015. During the class discussion, many immediately predicted that a) Jay-Z would have to take a larger role in attracting prominent artists, b) listeners would find the ancillary inducements insufficient to support a customer base large enough to be competitive with better established streaming services, and c) by highlighting already successful artists, the initiative would fail to motivate listeners to support better pay for artists generally.

References

- “About Complex Systems.” *New England Complex System Institute*.
<http://neccsi.edu/guide/>.
- “Complex Systems Modeling: Using Metaphors From Nature in Simulation and Scientific Models.” <http://www.informatics.indiana.edu/rocha/complex/csm.html>.
- Crawford, Valerie M., Mark Schlager, Yukie Toyama, Margaret Riel, and Phil Vahey, “Report on a Laboratory Study of Teacher Reasoning: Characterizing Adaptive Expertise in Science Teaching.” Presentation at the American Educational Research Association Annual Conference, Montreal, Canada, April 11-15, 2005.
- “Definitions of Complexity.” <http://serc.carleton.edu/NAGTWorkshops/complexsystems/definitions.html>.
- Dubner, Stephen J. “What’s the Future of the Music Industry? A Freakonomics Quorum.” *Freakonomics*. Last modified September 20, 2007. Accessed July 12, 2014. <http://freakonomics.com/2007/09/20/whats-the-future-of-the-music-industry-a-freakonomics-quorum/>.
- Johns, Adrian. *Piracy: The Intellectual Property Wars from Gutenberg to Gates*. Chicago: The University of Chicago Press, 2009.
- Haskell, Robert E. *Transfer of Learning: Cognition, Instruction, and Reasoning*. New York: Academic Press, 2001.
- Hatano, Glyoo and Kayoko Inagaki. “Two courses of expertise.” in *Child Development and Education in Japan*, edited by Harold W. Stevenson, Hiroshi Azuma, Kenji Hakuta, 262-272. New York: WH Freeman/Times Books/Henry Holt, 1986.
- Lowensohn, Josh. “Jury Finds Apple Not Liable of Harming Consumers in iTunes DRM Case.” *The Verge*, December 16, 2014. Accessed April 39, 2015. <http://www.theverge.com/2014/12/16/7402695/jury-decision-in-iTunes-iPod-DRM-case>.
- Nieva, Richard. “Ashes to ashes, peer to peer: An oral history of Napster.” *Fortune*, September 5, 2013, quoting Ali Aydar, then Senior Director of Technology for Napster. Accessed April 29, 2015. <http://fortune.com/2013/09/05/ashes-to-ashes-peer-to-peer-an-oral-history-of-napster/>.
- Pandy, Marcus G., Anthony J. Petrosino, Barbara A. Austin, and Ronald E. Barr. “Assessing Adaptive Expertise in Undergraduate Biome-

- chanics.” *Journal of Engineering Education* 93, no. 3 (July 2004): 211-222.
- Perkins, David N. and Gavriel Salomon. “Teaching for Transfer.” *Educational Leadership* 46, no. 1 (September 1988): 22-32.
- Pham, Alex. “iTunes Market Share Still Dominant After a Decade (Research).” *Billboardbiz*, April 16, 2013. Accessed May 1, 2015. <http://www.billboard.com/biz/articles/news/1557486/itunes-market-share-still-dominant-after-a-decade-research>.
- Smirnov, Sergey, Hajo A. Reijers, Thijs Nugteren, and Mathias Weske. “Business Process Model Abstraction: Theory and Practice.” *Technische Berichte Nr. 35 des Hasso-Plattner-Instituts für Softwaresystemtechnik an der Universität Potsdam*, Potsdam: Universitätsverlag Potsdam, 2010.
- Tussey, Deborah. “Music at the Edge of Chaos: A Complex Systems Perspective on File Sharing.” *Loyola University Chicago Law Journal* 37 (2005): 101-167. Accessed April 29, 2015. <http://www1.it.luc.edu/media/lucedu/law/students/publications/llj/pdfs/tussey.pdf>.

DAVID BRUENGER is Director of the Music, Media, and Enterprise (MME) Program in the School of Music at Ohio State University. The MME Program provides an interdisciplinary curriculum connecting music, technology, communication, and business for students interested in entrepreneurial careers in music and entertainment. Bruenger's research focuses on the interrelationships between and among music, media, economics, and culture, with a particular focus on complexity theory, process models, and adaptive expertise in music business education and entrepreneurship.

