

# The Future of Digital Infrastructure for the Creative Economy

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Every member of the arts community has been impacted by the unprecedented challenges and opportunities proffered by technology. The last decade has observed our field coming to terms with this disruptive force in inspiring and innovative ways. Equally exhilarating and demanding, these transformations challenged many previous assumptions about the role of the arts and culture sector. This paper briefly examines some of the challenges and opportunities presented by the digital era, and also suggests how the development and maintenance of certain digital infrastructure<sup>i</sup> is critical to a successful and resilient 21st century arts and cultural sector.

## What has changed

In many ways, the arts and cultural sector has benefited from technologies like the internet, which allow for previously unimaginable levels of connectivity. Many in our community now have access to an amazing set of tools to reach and cultivate audiences, patrons and supporters. We now have more ways than ever to create, collaborate and connect with our peers, partners and audiences. As the field becomes more and more decentralized and the old infrastructure gatekeepers start to lose their power, new technologies and networks present us with seemingly unlimited choice and flexibility. This, in turn, allows us to carve out a new and vital public space that serves the needs of communities rather than corporations.

Disintermediation<sup>ii</sup> — the fracturing of the system of bottlenecks and gatekeepers that controlled some of the major means of production, distribution and access to audiences — has led to incredible opportunities for our field. With email and file sharing and video teleconferencing, for example, international collaboration is no longer cost prohibitive. For some in music and in the media arts (film, video and digital arts), the cost of production and distribution has radically shifted, in some instances falling to zero. Gone are limits on shelf space, or store hours, or inventory, or even number of seats in a hall.

Choice, flexibility, and direct access to audiences through new platforms such as the web also means that many artists and arts organizations have increasingly shifted how they think about what they do. No longer are we merely touring artists, producers of live performance or filmmakers — our community are now “content providers,” reaching audiences across multiple platforms (both real world and digital) and with varying levels of customization with respect to the audience experience.

This new way of thinking comes with significant challenges to our field. With a world in transition, new models and platforms are appearing and being tested each day. There is a tremendous learning curve in even comprehending the scope of opportunity, and very little certainty about which strategies may be sustainable. Digital rights still exist in a fluid, grey area, and creators are often unsure of their rights and ability to maintain control of their work in the digital space.

## Looking Forward

Over the years, conversations about the impact of technology within our field have considerably evolved. What used to be tentative language about “transitioning to a new era” (with a bright future where everything has perhaps been figured out) has given way to more concrete and inspiring terms as artists and arts organizations accept transition and fluidity as the new norm and empower themselves to take control over their relationships with their audiences. There is greater testing and assessment taking place, with managed and regular risk-taking built into the

DNA of new organizations. Additionally, there is a broader recognition of the tremendous opportunities to harness these changes to make our work more effective.

As we consider the future of the digital infrastructure that will shape our creative economy, we must assess those publicly available that we can adapt for our field, while exploring where new investments should be made. We must explore cross-disciplinary alliances that can share resources and information on what is working and not working. Strategic partnerships outside of the nonprofit arts sector will be key. On both a local and national level, we will also need to reconsider what arts advocacy means, and what forms it will take in an increasingly integrated and networked world.

The future that we're seeing is one in which the lines between non-commercial and commercial, traditional and untraditional become increasingly blurred. As we strive to achieve sustainable cultural communities, we would be well served to recognize that a similar cross-pollination is also occurring on the policy level. Not long ago, commerce, technology, copyright and media issues were entirely separate concerns for lawmakers. This is no longer the case. Technological advancements mean that once disparate issues are now inextricably linked. This, too, creates new opportunities for us to make an impact, provided we remain engaged and mindful of where our interests lie in the emerging digital ecology.

### **The Infrastructure Platform**

Fractured Atlas, Future of Music Coalition, and The National Alliance for Media Arts and Culture (NAMAC) believe that our field is currently at an infrastructure crossroads that will shape the future of the arts in the digital world. There are some critical questions that need to be considered by each member of the arts community about how our digital infrastructure will be shaped.

#### 1. Who Gets To Be Online?

As we entertain new approaches to engagement and information sharing, there are several important issues to consider. The first is access to the technology itself. Ensuring that more American communities have access to high-quality, affordable broadband will strengthen the ability of artists and arts organizations across the US to compete in a global marketplace. Currently, the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA) are examining ways to bring high-speed internet to more parts of the country, rural and urban, and these efforts should be supported. Access to technological platforms is a must for any creator or arts organization, and these platforms must remain fundamentally neutral and open to everyone. Likewise, our audiences need access to communications networks to experience the full scope of our artistic endeavors.

#### 2. Open Source

Open source<sup>iii</sup> is based on the concepts of sharing — rather than locking up — code, and promotes collaboration and open communication, lower overhead costs and greater innovation. The web has been built on open source software. The proliferation of free and open software infrastructure — components like Linux, MySQL, Apache, and SSH — has allowed creative entrepreneurs to focus their efforts on innovation rather than on technological plumbing. The future will see open source tools evolving into industry-specific applications that help us run our organizations and engage with our customers or audiences. By nurturing a healthy ecosystem of free, open, and transparent tools, not only will we become more efficient organizations, but we will also be far more effective at serving our audiences.

### 3. Interoperable Platforms

Another key factor to maximizing the utility of digital infrastructures is interoperability<sup>iv</sup>. Today, many of us receive information not just via desktop or laptop computer, but also increasingly via “smart” mobile phones. We’re able to connect and engage through a variety of social network platforms from YouTube to MySpace to Facebook. We collaborate on projects using online file delivery services like YouSendIt. We collect important information from our constituencies and supporters using free tools like SurveyMonkey and manage our email outreach and marketing efforts with constituent management systems like Constant Contact. We distribute, share and watch films that are available on such diverse platforms as YouTube, Vimeo and HD digital exhibition systems. We build and implement our own ticket selling platforms using the open internet. We evaluate the impact of all of our efforts with free analysis applications like Google Analytics or Facebook’s “Insights” feature. The future is about integrating and leveraging these tools across platforms<sup>v</sup>, thereby increasing our efficiencies.

### 4. Open Standards

Interoperability is made possible through support of open standards<sup>vi</sup>. Standards include things like metadata<sup>vii</sup> on a music recording — the embedded information that tells your iPod the composer and genre of a song. Other standards are more esoteric — like the XML schema to describe a performing arts event listing — but no less important. As a field, we must adopt ways of describing our work consistently and in platform-agnostic ways that facilitate communication among heterogeneous systems. This is a necessary step to developing new audiences in the digital age.

### 5. Transparency and Adaptability

The best ways to monetize digital infrastructures for the benefit of market-based compensation is a subject of ongoing debate, but it is of utmost importance that whatever means by which we receive support — micropayments, novel ticketing solutions, direct-to-customer sales — be as adaptable as possible, and allow us to retain as much control over data collection as is needed to scale growth and measure our effectiveness. We must also be prepared to work collaboratively, regardless of discipline, to aggregate information, test new models and methodologies and monitor our impact, individually and field-wide.

### 6. Genres and Disciplines Are Less Important

As the internet fosters connectivity, we are witnessing the erosion of long-held barriers between disciplines. Collaboration is now as easy as uploading a file and sending it around the world, where the receiver’s own sensibilities can infuse the original material in novel and inspiring ways. And it’s shaping the way we see things, the way we listen. Tinariwen and Tchaikovsky sit right next to TV on the Radio on our iPods. When it comes to collaboration and performance, some of this cross-cultural bleed is formal, some of it ad hoc. Either way, it enhances opportunities for not only the sharing of artistic concepts, but also strategic objectives. For example, we can find points of commonality on issues from diversity in media to digital literacy, without being bound by compartmentalization of discipline or genre.

### 7. We Need to Collect and Understand Data

Digital infrastructure is equally important for our audiences, who now have more power and influence than at any previous time in history. Online, new channels for discovery of art that cannot be directly experienced in a user’s city, region or country are developed every day. In order to capitalize on this trend, we need quality data that can be used to enhance the consumer/audience experience and also aid in transparent, timely and equitable compensation mechanisms for creators. From proper metadata of music files to identifying demographic/user

trends and responding appropriately, data must be a part of our infrastructure goals. Technology can assist us here as well, provided we use it to build bridges, not create walls.

Having good data brings a threefold benefit: first, it aids us in our abilities to understand where we're succeeding, and where we could do better. Second, it vastly expands our ability to reinforce and build upon collaborative efforts. Finally, it helps us quantitatively demonstrate our needs to policymakers who, now more than ever, rely on data to craft policies that make sense for our community. Outcome-driven, data-centric methodologies may seem counterintuitive to arts groups, but they are essential to our ability to amplify our collective efforts, tell our stories and build on our successes.

We should document each of our achievements, as to not have to reinvent the wheel with each new opportunity or challenge. If we can do this effectively, we will redefine what it means to be sustainable and effective organizations and help point the way forward for other groups and individuals seeking to improve conditions in their communities.

### **Understanding Policy Matters**

Currently, there are many unique questions facing policymakers, for example: how to reconcile the amazing platform for creativity and commerce that the internet represents with the problem of the unauthorized sharing of copyrighted works? How important is it to consider arts and cultural groups in underserved communities when implementing a national broadband plan? How do traditional media ownership rules impact the viability of local creator groups to have a voice on the public airwaves? Never before have so many crucial considerations been before us, and never before has it been so important for the perspectives of the cultural sector to be heard.

Although we've been conditioned to a compartmentalized view of policy, new political and economic realities present an opportunity to work towards a more integrated (and hopefully more sustainable) ecosystem: one where culture, creativity, and artists are valued across the board — from the Department of Agriculture to the FCC. Where there are opportunities to present data and perspectives to decision-makers, we should be prepared to seize them.

None of this is meant to avoid economic realities. We know there will be contractions in our field. Many of us have already felt them. Yet despite the current difficulties, the arts and culture sector has a unique opportunity to position itself as leaders. This is because we have a long history of exploring and embracing new ideas, and can articulate ethical values and principles forming the foundation for solutions that are equitable and fair. We must be ready to explore new opportunities and partnerships, moving between the public arts and media sphere and the commercial marketplace.

Technology will play a major part in how we accomplish our goals in this decade, accompanied by a necessary recalibration and ongoing dialogue about what it means to be responsible, compassionate stewards of our rich and varied cultural heritage. By becoming proactive in the building of digital infrastructures with a focus towards cross-field utility, we will guide ourselves through trying times and towards a resilient and rewarding future for the arts.

## Endnote

Some of the terms in this document can have multiple meanings depending on the context. For clarity, we offer the following glossary for how we are using these concepts.

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<sup>i</sup> **Infrastructure:** Infrastructure refers to the network of platforms (or “the way platforms work together to...”) that shape how artists produce, distribute and communicate their work to their audience. "Infrastructure" can refer to physical objects (e.g. the fiber optic lines that provide broadband access services) or digital platforms (e.g. email client servers or music production software).

<sup>ii</sup> **Disintermediation:** the fragmentation of traditional marketplace models that has resulted in increased levels of direct communication between parties. Disintermediation in the context of digital music, for example, refers to ability of musicians and creators to produce and distribute their work without relying solely upon external third-party services (e.g. recording studios or record labels, traditional media, retail outlets, etc.).

<sup>iii</sup> **Open Source:** software programs and/or network-based applications designed to allow for the free and open modification of the source code to tailor the program to the individual requirements of end users.

<sup>iv</sup> **Interoperability:** the ability to freely and easily transfer media between different types of platforms (i.e. from laptop to iPod to smart phone; may also imply "cloud"-based information access).

<sup>v</sup> **Platforms:** the different mediums through which artists communicate and distribute their work and by which fans consume media. Platforms can be physical or digital: physical platforms include smartphones, laptop computers or iPods; digital platforms include social networking web sites (Facebook, Twitter, mySpace), online music or video streaming services (Rhapsody, Lala, YouTube) or online file delivery services (YouSendIt).

<sup>vi</sup> **Standards:** the creation of uniform procedures and processes that facilitate the interoperability of different devices/media, or baseline protocols for engagement in a marketplace.

<sup>vii</sup> **Metadata:** in music, for example, the data used to identify and track information particular characteristics of a media/music file, including the artist name, composer, song title, genre, etc. Clear metadata is important for tracking the uses of musical works and compensating artists/owners. In software, metadata refers to tagging, filing, and storage protocols that increase the cross-platform utility of data.