ACCELERATING UTAH'S DIGITAL MEDIA
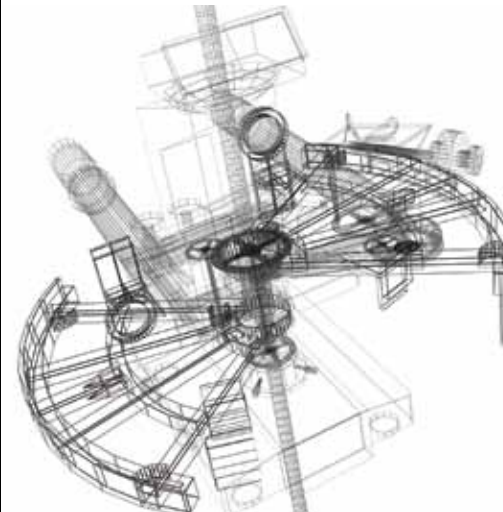
Accelerating Utah's Digital Media Industry

Strategies to accelerate expansion of Utah's digital media industry by focusing on technology and creativity.

About This Report

This report presents specific strategies designed to accelerate and support the growth and expansion of Utah's digital media industry and to fashion a well-trained workforce possessing the critical skills needed by this industry.

These recommendations were generated by a number of dedicated leaders from within Utah's digital media industry as well as by public, academic, and business leaders. Each of these participants has contributed his or her time, expertise, and insight to this collaborative effort that sets the direction for the expansion and acceleration of this vital industry in Utah.

This Cluster Acceleration Partnership has been authorized and sponsored by the Utah System of Higher Education, the Utah Department of Workforce Services, and the Utah Governor's Office of Economic Development. Utah Valley University has led the project and served as the primary convener.
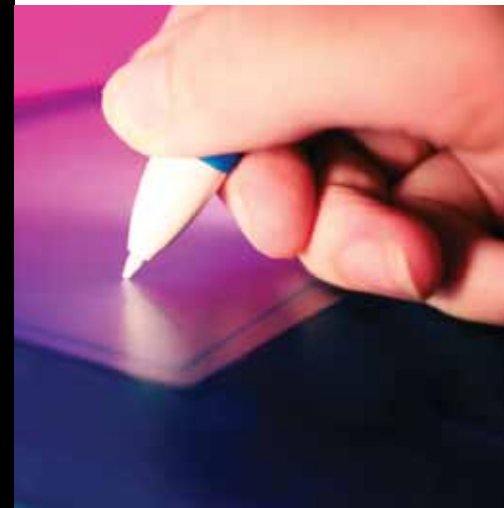
The consulting team from Grow Utah Ventures, a nonprofit organization, served as the strategic facilitator and acceleration advisor on the project.

For more information on this and other Cluster Acceleration Partnerships, please contact the Utah System of Higher Education.

A strategic direction and high-level action plan to increase the existing 1,500 jobs and $415 million in revenue.

Executive Summary

The Utah Digital Media Cluster Acceleration Partnership Strategy defines a specific course of action to sustain and grow this vital industry cluster in the state of Utah.

This strategy lays out a specific direction and high-level plan of action to guide the collective efforts of academia, the public sector and Utah's digital media industry both in the short and long term.

Our major conclusions include the following:

- Utah has a rich legacy in pioneering digital media innovation and technology advancements.
- Utah's digital media cluster employs over 1,500 workers.
- Utah businesses in this cluster have direct annual revenues exceeding $415 million.
- In general, workers in digital media are paid above-average wage rates.
- 41% of all digital media jobs are in the video gaming sector.
- 20% of jobs are in the simulations sector.
- Utah can best accelerate the expansion of this industry by fostering creative talent and technology innovation that will drive the future of the industry.

As a result of these findings, the Utah Digital Media Cluster Acceleration Partnership recommends this comprehensive strategy that includes enhancing the state's workforce and relevant educational curriculum. Finally, long-term success is dependent on a partnership of industry, business, community and academic leaders.

Contributors and Commitment

This Utah Digital Media Cluster Acceleration Partnership Strategy incorporates the views, insights and recommendations contributed by a wide spectrum of representatives from industry, academia and the public sector on how best to accelerate the growth of the industry.

Utah's digital media industry employs over 1,500 workers statewide and has combined revenues of $415 million. This workforce includes artists, designers, technologists, developers, and engineers who work together to create and deliver dynamic, innovative digital content. They provide consumers of all ages with rich media experiences, such as leading edge video games, digital effects and feature animation that continue to engage and excite consumers of all ages.

We are proud of Utah's heritage in the digital media industry. From the pioneering research conducted at the University of Utah to the state's many early commercial leaders, Utah is a strong contributor in both the creative and technological components that are integral to the digital media industry. Building on this legacy, this acceleration strategy charts the direction for future growth and a strong economic impact to the state.

The partnership between academia, public sector entities and industry specialists formed through the course of this project is essential for long-term success. Achieving what we envision in this strategy will require aligned resources and a focused commitment to the initiatives.

We are confident, as we do so, that our combined efforts will yield positive individual, corporate, and statewide results as we accelerate the expansion of Utah's digital media industry.

Members of the UCAP Oversight Committee

Commissioner William A. Sederburg- Commissioner of Higher Education

Kristin Cox - Executive Director Workforce Services

Spencer Eccles-Executive Director Governor's Office of Economic Development

Mathew Holland- President Utah Valley University

Members of the Digital Media Cluster Acceleration Strategy Steering Committee

Utah Valley University Convening Institution

Special recognition and appreciation to Utah Valley University for serving as the convening institution for this project.

Digital Media Industry

Adam Abel- Go Films

Lee Baker-Sandman Studios

Jim Banister- Spectrum DNA

Mike Bartholomew- Eat Sleep Play

Jeff Bunker- Disney Avalanche

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John Corser- Corser Inc.

Ben Dahl- Pelion Venture Partners

Jon Dean- Electronic Arts Salt Lake

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Lane Kiriyama- Wahoo

Dave Peterson- Hill Air Force Base

Howard Phillips- Independent

Clark Stacey-Smart Bomb

Rachel Stewart- Department Workforce Services

Kent Thomas- Advanced CFO Solutions

Kasandra VerBrugghen- SpyHop

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Utah Digital Media Cluster Acceleration Strategy Review Committee

In addition to the steering committee, the following leaders provided critical insight to the final digital media acceleration strategies and their implementation.

Digital Media Industry

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Jim Alvey- Alvey Media Group

Steve Avery- PMG

Ben Bell- EA

John Blackburn- Avalanche Disney Interactive

Joshua Buhler- Rain

Daniel Burman- Holorad

Christopher Clark- Solar Monkey Media

Devlin Daley- Instructure

Andra Duke- Kaleidoscope Pictures

Bill Eggington- Eggington Productions

Jon Foster- Impatient Cow, Inc.

Peter Fuszard- 3DMI

Calvin Gaisford- Appigo

Brad Hintze- Bungee Labs

Matt Hoffman- BluFire Studios

Derek Jackson- GND-TECH

Dylan Jobe- Light Box Interactive

Jones Ammon- BluFire Studios

Geoff Keene- Sandswept Studios, Inc.

Russ Kendall- Kaleidoscope Pictures

Robb Kunz- Venture Blue Capital

Emily Lawrence- Zygote Media Group

Jonathan Lund- Garafa, LLC

Chad Lee- React Games

Darin McDaniel- Lumenas Studios

Dave McGinn- Agilix Labs

Micah Merrill- Kaleidoscope Pictures

Laura Mustard- Chair Entertainment

Dave Owen- Bend Reality Studios

Ryan Owen- Protoven

Les Pardew- Alpine Studios

Annie Perng- WTCU + MMI

Jill Porter- Workman Nydegger

Angelic Quintana- Eat Sleep Play

Adrian Rupp- Circles and

Squares Animation

Dave Rushton- Sensory Sweep

Clark Schaffer- A Schaffer Studios

Nathan Smith- Tandem Motion Picture Studios

Stephen Sobisky- Sandman Studios

Derrick Sorensen- Lumenas Studios

Steve Spencer- Twelve Horses

Andrew Stack- Steep Productions Inc

Gavin Sullivan- Prox13 productions

Phillip Windley- Kynetx

Scott Witt- Salt Aire Films and Media

Education

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Robert Kessler- University of Utah

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Kent Millington- UVU Tech Commercialization

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Richard Nelson- UTC

Utah's digital media industry capitalizes on the convergence of creativity and technology.

Table of Contents

Introduction

The Utah Cluster Acceleration Partnership (UCAP) is an initiative focused on increasing the economic impact of Utah's critical industry clusters and the contribution made by the various institutions of higher education.

Utah's higher education institutions are strong drivers of economic development in the communities they serve. In addition to educating a well-qualified workforce for local employment, these institutions are committed to doing more to further expand Utah's economic base.

SPONSORING PARTNERS

Key sponsors of the UCAP include the Utah Department of Workforce Services, the Utah System of Higher Education and its member institutions, the Governor's Office of Economic Development, and critical private employers in industry clusters across our state.

For the digital media cluster, Utah Valley University has served as the project lead and convener.

PROJECT SCOPE

An economic cluster acceleration strategy must address a wide range of facets that contribute to the rapid expansion of the targeted industry. In this project, primary focus has been placed on two significant elements:

Talent and Workforce Development
Determining what skill sets the industry cluster needs to drive expansion.

Innovation and New Technologies
Identifying ideas and technologies essential for future cluster expansion.

In order to achieve these general purposes, the UCAP initiatives have been organized into two specific phases of effort.

Phase I: Cluster Assessment

This phase has focused on conducting a strategic assessment of the cluster to determine the overall value, economic status, growth potential, and competitive positioning of the cluster.

Phase II: Acceleration Strategies

The second phase has focused on developing acceleration strategies with specific emphasis on developing talent and ideas that support and drive expansion of the cluster.

PROJECT LEADERSHIP

The UCAP is under the direction of an oversight committee consisting of the Executive Director of the Utah Department of Workforce Services, the Executive Director of the Governor's Office of Economic Development, and the Commissioner for the Utah System of Higher Education.

In addition, a steering committee has been organized by Utah Valley University comprised of industry leaders representing various digital media businesses across the state as well as certain key public and higher education leaders.

Grow Utah Ventures has provided project leadership in strategic economic and acceleration consultation.

Digital Media Cluster Assessment

The digital media cluster is comprised of some of the most innovative, dynamic and broad-reaching companies in the world. Spurred by continual developments in both rich media content and ever-changing delivery and media distribution technologies, this industry is at the center of today's consumer demands for entertainment and information.

CLUSTER DEFINITION

Given the far-reaching impact and diverse applications of digital media, setting a concise definition for what is included in the industry can be challenging. Today's businesses almost universally use digital media to some extent to deliver their service or product. The technology that makes access to digital content possible virtually anywhere and at any time as well as the tools that facilitate the creation of digital content have become integral to most business offerings. This has changed the once traditional definition of the digital media industry.

For the purposes of this acceleration strategy, we have chosen to narrow the definition with the intent of focusing our strategic actions. The following defines digital media as used throughout this report.

Digital Media

We define digital media as a collection of industries that work in the field of electronic media created and displayed using computer technology. These include digital audio and video, computer games, computer animation, and online and internet technologies -- including web-based tools, applications and services such as e-mail, e-commerce or social networking.

VALUE CHAIN OF THE INDUSTRY

Our acceleration strategy is best understood in the context of the value chain for the digital media industry.

Content Creators

The value chain for the digital media industry begins with the creation of content. Content includes the creation of all digital media such as feature animation, 3D imagery, special effects, and video games. It also includes the creation of digital audio content such as music, voice, and sound effects.

Content Publishers and Content Distributors

Created content is made available to consumers by publishers and distributors. This includes content aggregators, large video game publishers and film and animation distributors.
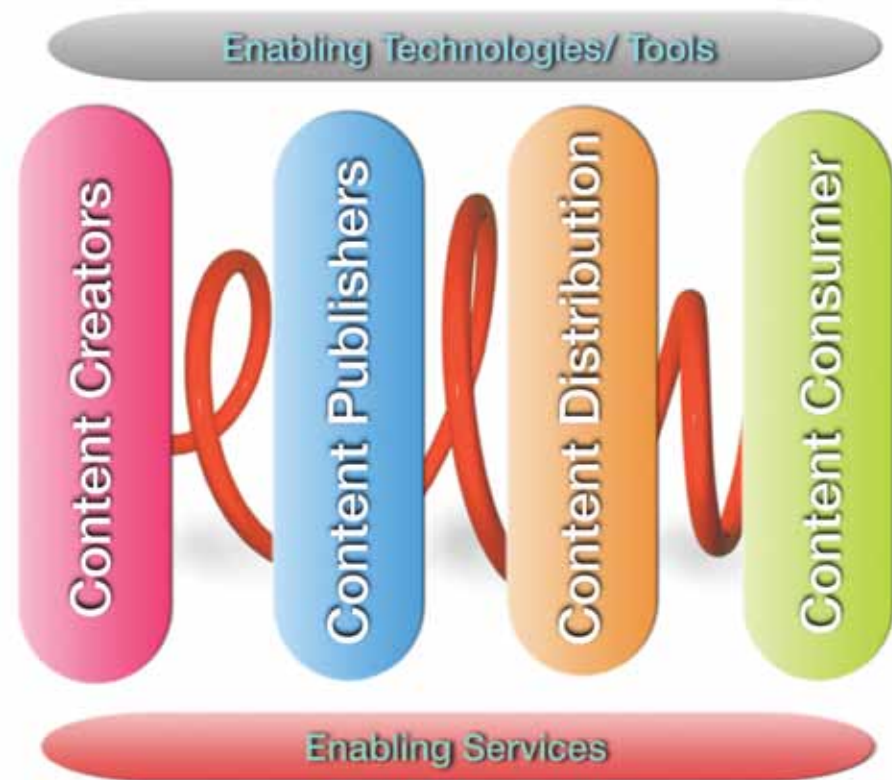
Content Consumers

Today's consumers have a wide range of options for accessing digital content. No longer are people simply viewing content on a home computer or in a theater. A vast array of technologies gives consumers a host of alternatives for interacting with digital media. Consumers access content in their homes via cable and dish transmission, or more recently over a string of mobile devices. Using mobile smart phones or tablets, consumers can view video content, play electronic games and share digital content.

Enabling Technologies, Tools and Services

The rich media experience is enabled by a set of new technologies and tools that have standardized how digital content is created, which has made it easier and more cost-efficient.

One of the most recent and industry changing enabling services is a part of the emerging concept of "cloud computing." Enabling services, provided via the internet, through the "cloud" make it possible to deliver digital content to consumers anytime, anywhere over a variety of technical platforms.

Digital Media Value Chain

Enabling Technologies/ Tools

Content Creators · Content Publishers · Content Distribution · Content Consumer

Enabling Services

GLOBAL DIGITAL MEDIA MARKET

The appetite and demand for more and more digitally created and delivered content of all types is truly a growing demand that reaches across continents, countries and cultures. Much digital media is instantly made available throughout the worldwide infrastructure of the Internet, making virtually all-digital media companies global in nature and directly impacted by worldwide markets.

In spite of the recent economic downturn, the global demands that drive this industry are increasing. Consider a few interesting facts:

• In 2010 the global media and entertainment market was estimated to be $1.4 trillion. With a projected growth rate of 5% annually the market size will be $1.7 trillion in 2014.

• The US digital media market in 2011 is projected to reach $445.7 billion followed closely by Japan at

$171.2 billion, and the combination of Germany, the United Kingdom and China at $70 billion.

• China is projected to have the fastest growing market at 12% annually.

• Of the various market segments, video games leads in growth at 10.6%. This is followed by increases in internet advertising at 11.4% and film at 4.8%

• The video game segment globally is estimated by the industry to be $60.4 billion in 2009 and estimated to grow to $70.1 billion in 2015.

INDUSTRY TRENDS

The digital media industry is constantly changing. These changes primarily are driven by advancements in technology, dynamic consumer preferences and the innovations of creators and artists.

The following highlight a few industry trends that directly influence Utah's acceleration strategy.

Changing Technology Platforms

The dramatic changes in technology platforms and their impact on consumers can best be illustrated by considering how video game playing has changed in recent years. Once dominated by retail packaged goods purchased by consumers for stand-alone game devices and consoles, video games are now accessible across various mobile platforms and are often available for purchase as instant downloads.

The impact has been an increase in game users from 200 million to well over 5 billion.

With the introduction of the iPhone and other such devices, mobile games and other digital content have become widely available to an ever increasing consumer base. According to Apple, the App Store now has over 65,000 apps from the 100,000 developers who participate in the iPhone Developer Program.

At the end of 2009, 4.6 billion people worldwide subscribed to mobile phone service, up from one billion in 2002. The mobile games sector is projected to continue to expand and grow.

Motion control devices, such as offered by the Nintendo Wii, have expanded the market by

transforming even non-gamers into active users of gaming technologies expanding the market size. Similarly the addition of cameras to game devices enables game players to play and interact with the games using only their hands for input, providing even the technology novice access to a digital gaming experience.

More recent developments include social gaming via Facebook or other social media sites. Here consumers play digital games with people in various locations. Facebook now has over 200 million logins per day for game players.

The overall impact has been an increase in market. According to the Entertainment Software Association, the average gamer is 34 years old and has been playing for 12 years. Forty percent of gamers are women and more than a quarter are over age 50. In addition, a December 2008 study by the Pew Internet and American Life Project found that 53 percent of all Americans over the age of 18 play video games, as do a full 97 percent of teens. As these statistics show, today's video game players include a wide variety of individuals including students, employees, military personnel, seniors, mothers and fathers.

Technology Transition

Retail Packaged Goods

Download Content Services

Motion Control Play /Cameras

Social Gaming

These trends have accelerated the need for rapid development cycles, more flexible development teams, and consumer pricing options that include providing it for free.

Relocation

The digital media industry, and, in particular, the video gaming industry, is on the move. Driven by the demand to reduce operating costs, major game producers are relocating to lower cost operating centers. As a result, economic development efforts have become increasingly more competitive.
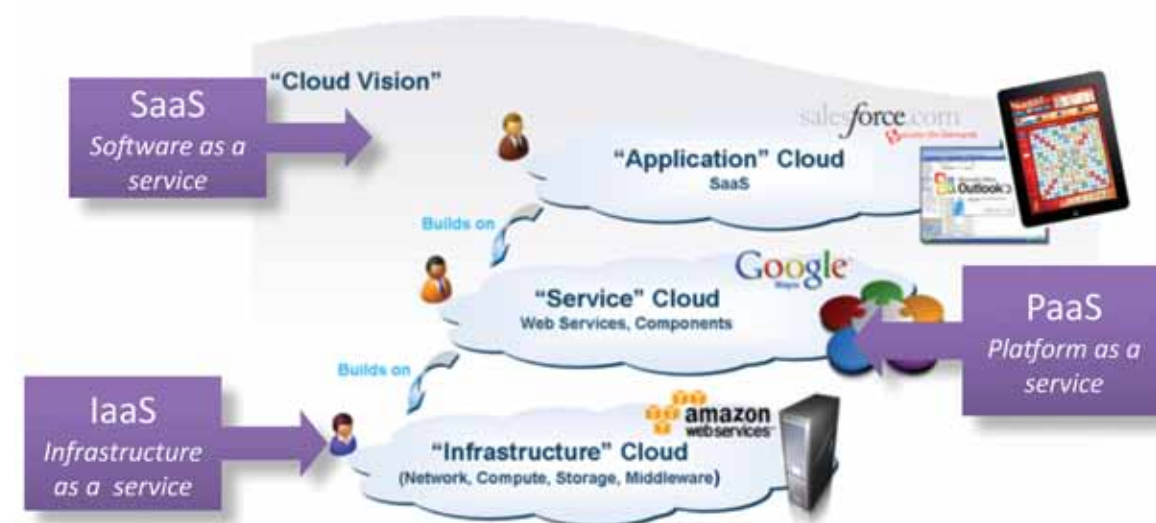
Some countries have offered extensive inducements to the industry to locate domestically. This has led to a general concentration of the industry globally. Game developers worldwide are located in four main countries, with the United States being first. Followed by Japan, Canada and Great Britain.

Canada particularly has been aggressive in offering significant relocation incentives to lure companies to their region. Many of these efforts have been successful.

A similar situation exists among the states, with over 74% of the video game workforce primarily in six states: California, Texas, Washington, New York, Massachusetts, and Illinois.

Location of Game Developers

US Developer Locations

Six US States House 74% of all US employees in videogames

✓ California
✓ Texas
✓ Washington
✓ New York
✓ Massachusetts
✓ Illinois

Game Development Teams

Traditional
Game team 40+ internal plus contractors
$10M+, 1 – 3 yr

Today
Game team 5+ internal
$250K+ 3mo – 6 mo

Cloud- Layers of Service

This trend towards relocation is expected to continue as cost of operation remains a driving success factor for the industry.

Access to Skilled Talent

As the video game industry has changed, the skill set and the mix of talent required by industry professionals has also changed.

For example, game development teams traditionally consisted of over 40 internal developers and relied heavily on outside contractors. Game development would cost in excess of $10 million per game and the development cycle would extend over a one- to three-year period.

Today, games for smartphones or social media sites are developed by a small, flexible team of some five internal developers working with a budget of $250,000 and a completion deadline of three to six months.

These teams must be made up of skilled individuals who are proficient in the latest technologies and have the ability to collaborate in small teams.

Cloud Based Services

The technology of cloud based services is the underlying technology making it possible to combine massive audiences sharing a digital media experience at any location, at any time of the day or night over mobile devices.
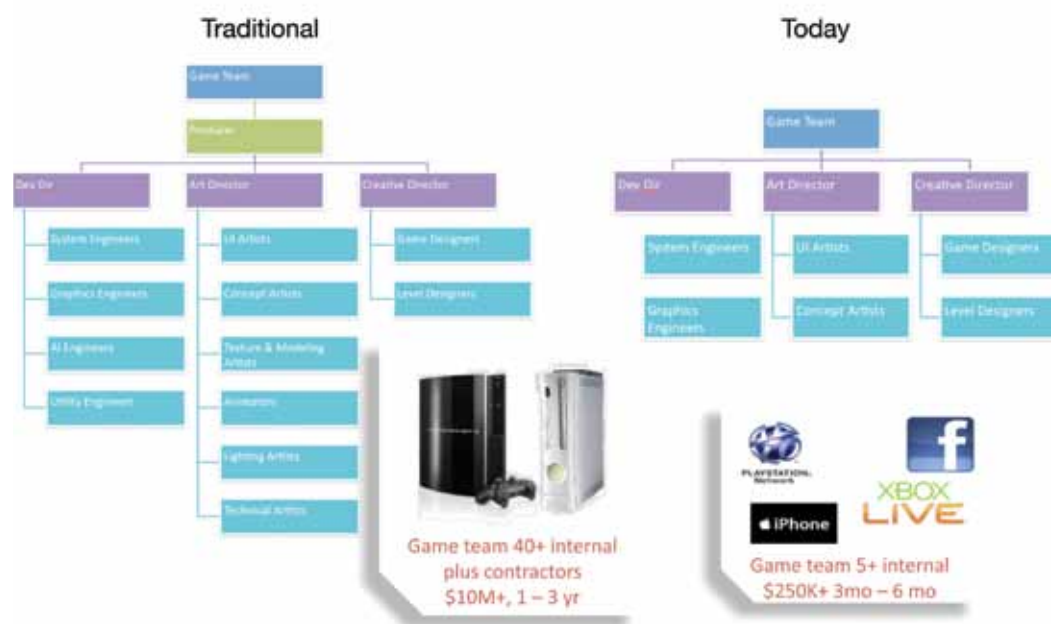
The cloud is best understood as technology that enables digital media services to be accessed on demand. Three layers of the cloud directly enable both the consumer and the industry side of the digital media industry. These are:
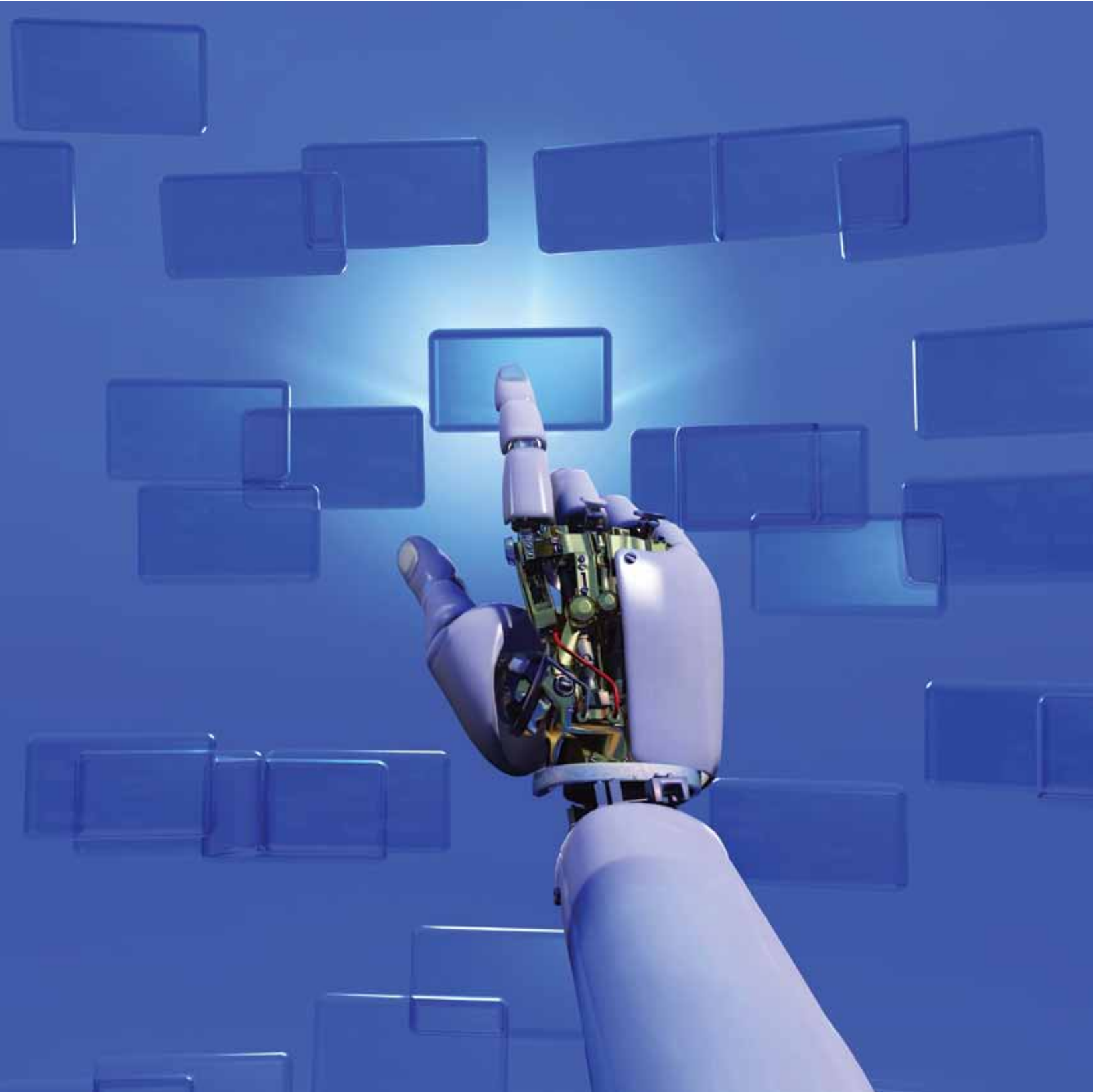
• SaaS- Software as a Service. This consists of end users utilizing applications that are resident in the cloud and accessed when needed.

• PaaS- Platform as a service. Enabling technologies have rapidly extended to platforms, web services and components that are made available on demand. Google-type services are an example of this offering.

• IaaS- Infrastructure as a service. In this case, basic infrastructure such as networks, data storage and middleware are provided to commercial users as needed. Examples include web services provided by Amazon.

The digital media cloud enables the seamless interaction between the significant players of this industry, including web application services, video and film production, interactive producers, and content users. The result is increased development speed, enhanced collaboration and rapid distribution of content.

This section presents a current overview of Utah's digital media cluster today, including an estimate of its economic value to the state.

CLUSTER ECONOMIC VALUE

In general, the digital media industry employs a workforce that is paid significantly above the average wage rate and one which requires skill sets that extend across the technology to the creative arts.

The following table highlights some of the Utah wages paid to employees in this industry.

Utah's Historical Strength in Digital Media

Utah boasts a pioneering history in animation, digital media, and information technology. Many leading experts and founding digital media companies—Atari, Adobe Systems, Silicon Graphics, and Pixar, to name a few—can trace their roots to research conducted in the early years of the industry at the University of Utah. Ivan Sutherland, the creator of com-

Position Title (SOC Code)	State of Utah	National Comparison	Utah as % of National Wage
Multi-Media Artists & Animators (27-1014)	$51,600	$61,010	84.6%
Fine Artists, Illustrators (27-1013)	$42,680	$48,110	88.7%
Producers & Directors (27-2012)	$55,320	$77,070	71.8%
Media & Communication Workers (27-3099)	$41,680	$45,720	91.2%
Film & Video Editors (27-4032)	$44,500	$61,180	72.7%
Media & Communication Equipment Workers (27-4099)	$51,850	$54,090	95.9%
Graphic Designers (27-1024)	$39,850	$46,750	85.2%
Film & Video Editors (27-4032)	$38,400	$62,500	61.4%

Sources: Utah Department of Workforce Services, Bureau of Labor Statistics (May 2008 wage estimates)

Accurate and complete employment and revenue data for Utah's dynamic digital media industry is not readily available. There is no complete list of digital media companies and no one source for business data. An effort has been made to rely on an estimated list of companies.

Based on the data collected, the following highlights the economic value of Utah's digital media industry:

- Total jobs- 1,460
- Total direct revenue $413,700,000
- 41% of all jobs are in the video gaming sector
- 20% of jobs are in the simulations sector
- 15% of jobs are in the support services

puter graphics and founder of the GUI Interface, was a University of Utah professor who later co-founded Evans & Sutherland. Leading technology companies including WordPerfect, Novell and Iomega were all founded and headquartered in Utah.
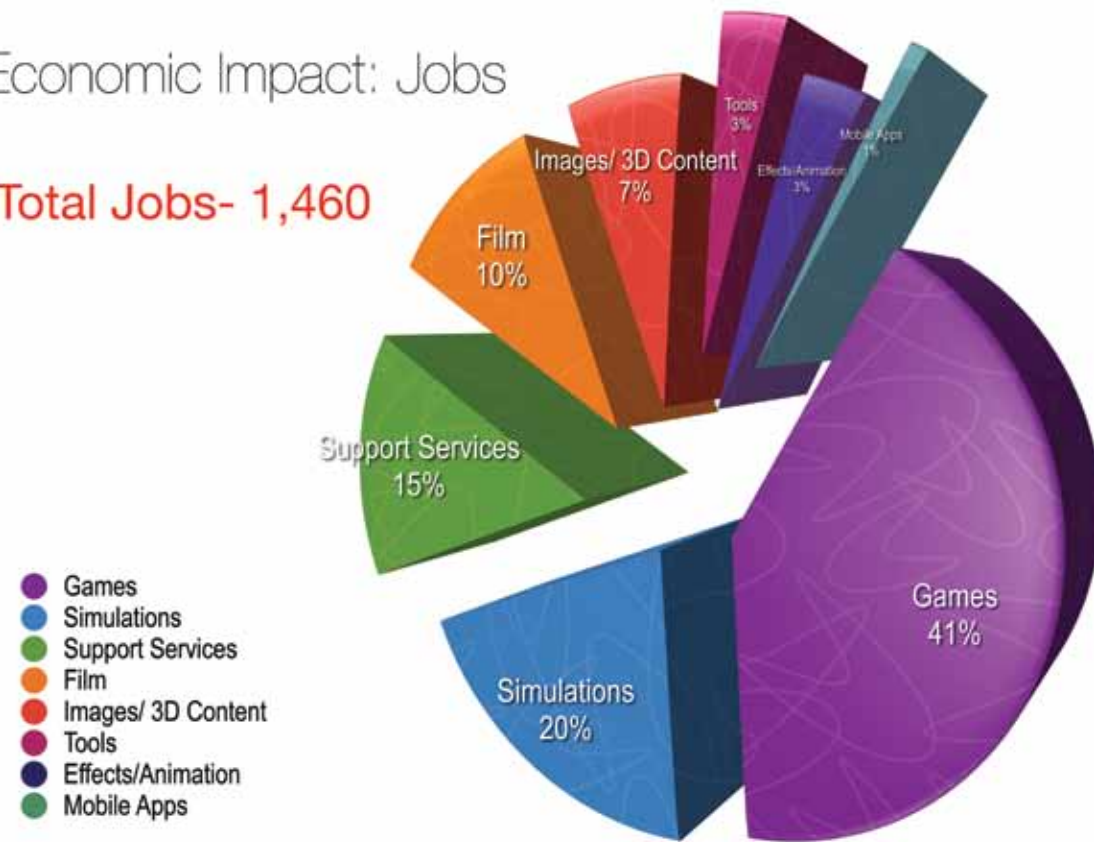
The Digital Media Industry in Utah

Today, Utah boasts the presence of a number of industry leaders and successfully continues to create vibrant businesses in this industry. The following highlights some of the key points and players in this progress:

ChAIR Entertainment- Epic Games

In 2008, Epic Games Inc., creators of blockbuster video game franchises Unreal and Gears of War

Economic Impact: Jobs

Total Jobs- 1,460

- Games
- Simulations
- Support Services
- Film
- Images/ 3D Content
- Tools
- Effects/Animation
- Mobile Apps

Games 41%
Simulations 20%
Support Services 15%
Film 10%
Images/ 3D Content 7%
Tools 3%
Effects/Animation 3%
Mobile Apps 1%

Economic Impact: Revenue

Total Revenue- $413,694,100

- Games
- Simulations
- Support Services
- Film
- Images/ 3D Content
- Tools
- Effects/Animation
- Mobile Apps

Games $242,119
Simulations $62,488
Support Services $42,050
Film $41,584
Images/ 3D Content $15,440
Tools $5,648
Effects/Animation $5,115
Mobile Apps $10

and the industry-leading Unreal Engine 3, acquired Provo-based ChAIR Entertainment, creators of the award-winning Undertow and Shadow Complex video games. In 2010, ChAIR relocated to downtown Salt Lake City to expand its development capabilities and released Infinity Blade for iOS, which received several "Mobile Game of the Year" awards and won "Excellence in Design" at the International Mobile Game Awards.

Walt Disney Creates Fall Line Studios

In February 2008, Disney Interactive Studios, the interactive entertainment affiliate of The Walt Disney Company, announced its plans to expand its focus into the video gaming industry. The Walt Disney Company acquired Avalanche Software and created Fall Line Studio, based in Salt Lake City. The company was awarded a state post-performance tax credit of $5.25 million spread out over the next ten years. The company is projected to create 500 new jobs paying wages at 240% of the county median and to generate $15 million in new state tax revenue.

Silverlode Interactive

Silverlode Interactive created the world's first online real-time strategy game. Known as SAGA, Silverlode's online gaming system is a free-to-play collectible model that established over 150,000 player accounts in the first year.
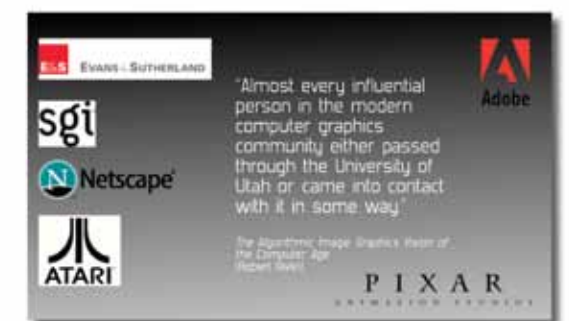
Electronic Arts Salt Lake

Electronic Arts, one of the leading producers of digital games, has recently completed a significant expansion of its Utah studio, moving it into a larger office in downtown Salt Lake City.

Smart Bomb Interactive

Smart Bomb Interactive develops new games for National Geographic. In 2010, Smart Bomb launched an online virtual playground for kids in partnership with the National Geographic Society. National Geographic Animal Jam drew over a half million registered users in its first three months of operation, and continues to grow at a breathtaking pace. Animal Jam gives kids the opportunity to become their favorite animals and see the world through their eyes, while learning about the natural world through the vast multimedia libraries of National Geographic.

Our Beginning

Strategic Position in Response to the Industry

Our acceleration strategy for the digital media industry in Utah is based on a careful review of the national and global trends of this industry and how we can best respond to these trends.

The following describe national and global industry trends and the strategic response we recommend. This response is incorporated into the final components that comprise the acceleration strategy.

Trend: *Concentration of the Industry in Major Geographic Locations*

Strategic Response: We recognize that Utah may not be the lowest-cost location for operations of businesses in this industry. We do feel however, that Utah can become a "must connect to" state. By establishing this position, Utah will come to be viewed within the digital media industry as a state the industry must connect to in order to better understand future trends and developments in both the creative and technological aspects of digital media.

Trend: *Movement and Relocation of the Industry*

Strategic Response: Given the degree to which the industry is relocating its operational centers, there is strong merit in launching an aggressive business attraction campaign. This campaign must include a competitive incentive package offered to businesses considering relocating in Utah.

Trend: *Increasing Pace of Change*

Strategic Response: The digital media industry is changing too rapidly for the state to emphasize training and education available for any one specific platform or technology. We feel, however, that we should encourage leadership in the future by instilling in our students and workforce a creative mind-set and a sound understanding of technology. This emphasis will enable us to contribute to and lead the future of the industry.

Trend: *Reduce Operating Costs*

Strategic Response: As digital media companies seek to lower their operating costs by relocating business centers, we do not recommend competing on the basis of lowest-cost location. We feel strongly that the industry values the skill sets and capacity required to create content and technology assets. Businesses will not outsource these vital functions. As they seek to cultivate the core capabilities to create such assets, they will find this aligns directly with Utah's strengths.

Trend: *Need for Strategic Partners*

Strategic Response: The digital media players that will be successful in the future are those that form a range of public and private sector partnerships. The synergy that has resulted from this UCAP initiative among Utah's digital media businesses, public organizations and academic institutions, reflects the spirit of collaboration and support that will be vital to the future growth of the industry in Utah.

Trend: *Acquiring and Managing Talent*

Strategic Response: A key to future success is acquiring and managing excellent talent. Utah has an abundance of gifted talent in both the creative and the technological fields. This talent will be cultivated and trained by curriculum and real-world experiences that are jointly shaped and offered by both industry and academia.

Our Response to Industry Trends

Concentrating in Major Locations	➡ Utah become a "Must Connect To" state
Movement and Relocation	➡ Agressive "Attraction" campaign ➡ Competitive incentive package
Increasing Pace of Change	➡ No focus on a single platform or technology ➡ Emphasize leading the creative and technology future
Reduce Operating Costs	➡ Can't outsource asset makers/ technology innovators- Utah's strengths
Need for Strategic Partners	➡ Collaboration- Industry/Academia/Government
Acquiring and Managing Talent	➡ Abundant pipeline of talent ➡ Industry influenced curriculum/training

Focus on Creativity and Technology Innovation

Recognizing the global and highly competitive nature of the digital media industry, we choose to focus on the intersection of creativity and technology innovation as the area most likely to provide sustainable growth and significant opportunity for Utah.
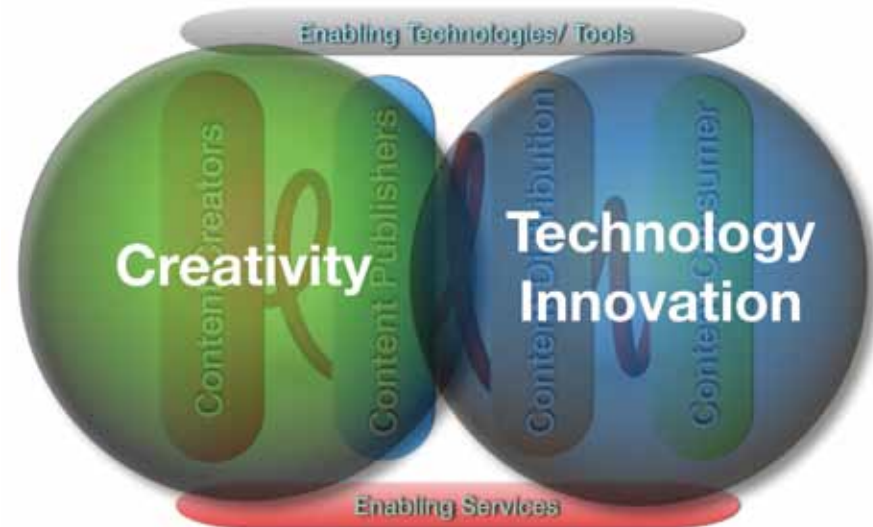
Through this focus we will leverage the creativity of our people – within digital media today and those of our future workforce – and innovate the technologies and tool sets that will lead the industry's design, development, delivery and use of creative digital media content.

Our Strategic Goal

Our overall goal is to become the creative and technological epicenter for educating, training and stimulating both creative thinking and innovative technologies that will shape the future of the digital media industry. Utah will be a "must connect to" state for any business that hopes to succeed in the global digital media industry.

We feel confident in setting a goal for 2016 that includes 3,000 total jobs and a direct revenue increase to $800,000,000.

Strategic Focus

DIGITAL MEDIA CLUSTER ACCELERATION STRATEGY

STRATEGIC GOAL

Recognizing the global and highly competitive nature of the digital media industry we choose to focus on the intersection of creativity and technology innovation as the area most likely to provide sustainable growth and significant opportunity for Utah.

Through this focus we will leverage the creativity of our people-those within digital media today and those who comprise our future workforce-and innovate the technologies and tool sets that lead the industry's design, development, delivery and use of creative digital media content.

STRATEGIC FOCUS ON CREATIVITY & TECHNOLOGY INNOVATION

Utah will become the creative and technological epicenter for education and training in the creative thinking and innovative technologies that will shape the future of the digital media industry.

Utah will be a "must connect to" state for any business that hopes to succeed in the global digital media industry.

Strategic Focus

Acceleration Strategies

The primary objectives of the UCAP are to lay out a strategy for accelerating the growth of the industry and, in particular, to determine how to provide the manpower and technologies required to meet future industry needs.

The overall goals of the project are to:

Accelerate Economic Growth— Accelerate the growth of the industry to provide employment and career opportunities in the future and expand the state's overall economy.

Create a Talent Development Strategy— Define the workforce and talent base needed to grow the industry. This includes developing a sufficient talent base to attract businesses to the state, expand current industry employers, and create new entrepreneur-led businesses.

Enhance Coordination— Enhance coordination of higher education, industry, and workforce training to improve the education services that ensure a qualified workforce.

For this project, Utah Valley University, serving as the project convener, invited a group of industry leaders representing the various segments of Utah's digital media industry to form the Digital Media Cluster Acceleration Strategy steering committee. These leaders, along with representatives from higher education and the public sector, participated in a series of work sessions. Each work session was designed to identify the strategic drivers that influence the expansion of this cluster and to determine actionable strategies that could accelerate the growth of the industry.

Research and analysis were conducted to further assess unique elements of the industry and to determine the skill sets required in its future employees. While this research led to the refinement of specific strategies, this is not meant to be a comprehensive economic study of the industry. The collective expertise, years of experience, and in-depth understanding of the industry brought to the project by the participating committee members has shaped the final recommended acceleration strategies.

GROWTH OPPORTUNITIES

Three specific growth opportunities are addressed, each reflecting an increasing level of opportunity with a corresponding increase in risk.

Sustain the Core—This category represents specific opportunities essential to sustaining the core of Utah's current digital media industry.

Drive Growth Accelerators—This category represents the most important short-term opportunities that have the potential to expand the overall growth of the cluster.

Explore Future Opportunities— This category represents future opportunities in which Utah has a strong likelihood of succeeding.

The following illustration depicts in detail the recommended Utah Digital media Cluster Acceleration Strategy.

DIGITAL MEDIA CLUSTER ACCELERATION STRATEGY

Growth Opportunities

Sustain the core

Ensure The Viability of Utah's Game Development Industry Cluster

Provide companies with access to a proficient and creatively competent workforce capable of meeting the requirements of this fast-changing industry. This workforce is to be trained at universities that have formed industry partnership to achieve greater specialization in the areas of game development skills.

Enable Utah companies to compete globally by achieving the greatest operational cost advantage as compared with other US national locations.

Continued Creation of Digital Media Support Companies

Continue the creation and expansion of innovative, entrepreneur-led, digital media support companies providing such essential services as: sound engineering, audio effects, visual effects, animation, branding, advertising and production of commercial.

Ensure a Broad Mix of Customer Facing Service Companies

Ensure continued availability and growth of a broad mix of businesses that enable 24-7 access to digital media content by consumers across a range of technical and mobile platforms.

Essential Service Include
- Back end systems support consisting of both software and technology
- Improved customer interface
- Maintaining 24-7 persistent service to consumers
- E-Commerce
- Web advertising
- Server-side engineering

Drive for growth

Become the Epicenter for Creative Thinking and Talent

Become the epicenter for educating and training, creative talent by stimulating creative thinking that will shape the future of the digital media industry and design the technical innovations to achieve the future.

Extend the creative capacity of Utah's workforce beyond current technologies, platforms or formats-to those that will drive the future.

Establish University based creative institutes that promote cross discipline curriculums to produce creative thinkers. This includes creative development of new media properties as well as creative problem solving to design new technologies and new applications of technology.

Attract and form sustainable Utah based content creation businesses such as game development studios, animation studios, film studios, post-production studios, interactive and advertising studios, and other businesses that create digital content.

Accelerate the Expansion of Technology and Innovation

Accelerate the creation and adoption of innovative technologies and tool sets used within the digital media industry by leveraging the unique creative thinking available in and attracted to Utah.

Establish Utah as the place where digital media tools are created better than anywhere else and where tool developers most want to come. This includes cloud-based technology innovations and solutions, production centered tools, middleware solutions standardizing processes and utilities and tools for the efficient and rapid creation of digital media content, animation and computer games.

Ensure the future

Maintain Utah's Position as a Creative Center for Digital Media

Maintain Utah's position as a creative center for digital media designers and thinkers by offering a unique combination of enriching culture, rich aesthetic appeal, inspired talent, leading innovation and broad based support for the digital media industry.

The following describe the supportive strategies that are required to fully achieve the overall acceleration strategy.

Key Supporting Strategies

TALENT DEVELOPMENT

Creatively Competent Workforce – Provide companies with access to a proficient and creatively competent workforce capable of meeting the requirements of a fast-changing industry. This workforce should be trained by university and industry partners to achieve greater skill specialization in areas critical to game development and other segments of the industry. (See Appendix Required Workforce Skills)

Industry-driven Educational Curriculum – Provide design-relevant training and curriculum for students pursuing careers in the digital media industry through the cooperative efforts of industry and academia, design relevant training and curriculum for students pursuing careers in the digital media industry. Coordinate the delivery of this curriculum across various institutions of higher education and applied technology colleges across the state. (See Appendix Coordinating Education Programs)

BUSINESS EXPANSION

Business Awareness – Establish industry forums for sharing information about applicable new technologies, innovations and services that support Utah's digital media cluster.

Business Policies – Ensure that Utah's law and tax policies are favorable toward the digital media industry. These policies also promote the adoption and expansion of industry enabling technologies such as rapid expansion of broadband infrastructure into areas beyond the Wasatch Front.

BUSINESS ATTRACTION

Incentive Package – Become more competitive in attracting digital media businesses by adopting an aggressive incentive package for businesses relocating to Utah. (See Appendix Recommended Incentive Package)

BUSINESS CREATION

Foster Targeted Business Creation – Foster the creation and expansion of innovative, digital media support companies that provide such essential services as sound engineering, audio effects, visual effects, animation, branding, advertising, and production of commercials.

Support Entrepreneur- Led Businesses – Promote the creation of digital media technology businesses by providing entrepreneurs with support services, business incubation, guidance from seasoned mentors, and access to investment capital. Give Utah angel investors and venture capitalists incentives for investing and mentoring companies in this industry.

CLUSTER LEADERSHIP

Digital Media Industry Forum – Establish a digital media industry forum to oversee the implementation of acceleration strategies and regularly assess their effectiveness. Consider integrating this forum with existing trade and industry organizations and associations.

Marketing and Branding Initiative – Instigate a cluster specific marketing and branding initiative to promote the economic significance of the digital media industry. Through this initiative, educate private and public sector business and policy leaders on the economic contribution of digital media creativity and technology to the overall economic growth of Utah in the 21st century.

Enhanced Community Cooperation – Improve the cooperation and coordination between industry and the various entities that influence its success such as Utah System of Higher Education, Public Education, USTAR, Governor's Office of Economic Development, and the Utah Technology Council.

A. Recommended Elements of Business Attraction Incentive Package

The following are recommended elements that should be included in a business relocation incentive package targeted to the digital media industry. An incentive package should:

• Be post-performance based, increasing the incentive post-performance from 20% to 30%.

• Emphasize cooperation with existing digital media companies.

• Be based on the incremental and extended investment in jobs that the company makes to their products over time.

• Include transferable tax credits.

• Be made available to small companies. State incentives, such as EDTIFF, should be made available to companies with less than 10 employees to address the trend to smaller, more agile companies.

• Be provided for post-production and visual effects companies.

B. Required Workforce Skills

Given the rapidly evolving nature of this industry, specific career pathways in digital media are defined. Talent development should focus on acquiring the following skill sets:

Programming Skills

• Ability to write in C and C++.

• Foundation in math, physics and Boolean Algebra.

• Understanding of the programming constraints of today's actual gaming platforms.

• Comprehension of version control.

• Optimization.

• Desire for career beyond game design.

Film Skills

• Desire for career beyond film direction.

• Technical skills such as grip and electric to replace an aging workforce.

• Accounting skills for short-term, project based jobs

Art Skills

• Talent for construction, set design, art, and architecture.

• Competency in the latest tools. Current key tools include: Maya, Photoshop, and Flash.

General Skills

• Ability to work well on a team.

• Ability to learn in a constantly changing environment.

• Student portfolio that goes beyond school assignments.

• Game film.

C. Coordinating Educational Programs

As a part of developing a skilled workforce possessing industry-relevant skill sets, the curriculums and instruction provided at the following institutions should be coordinated. Extensive and ongoing input from industry should also be provided in designing and delivering the education and training.

Brigham Young University (BYU) Animation Program

The animation major covers everything from traditional cell animation to 3D animation and compositing. The program gives students broad experience in art and technology, which is applicable in a wide variety of career paths.

University of Utah (U of U) Scientific Computing and Imaging Institute (SCI) and Entertainment Arts & Engineering Master Games Studio (MGS)

SCI is a permanent research institute at the U of U. SCI aims to develop innovative and robust software packages and make them broadly available to the scientific community. SCI is associated with several national research centers.

The Entertainment Arts & Engineering Master Games Studio (MGS) graduate degree program is a combined effort of the School of Computing and the university's film department with the objective of teaching students how to design, develop and publish video games.

Utah State University (USU) Center for High Performance Computing (HPC)

HPC enables research into activities dependent on advanced computing technologies and educates students in all disciplines dependent on advanced computing technologies. The center enables education of advanced simulations and cyber environments and the design, development and deployment of new computing systems.

Appendix

Salt Lake Community College (SLCC) Center for New Media
SLCC's Center for New Media is home to students in Digital Media Design, Animation, and Visual Art and Design. The school recently broke ground on 100,000 square feet of new space to host three new studios. Students specialize in one of six areas: animation, design, illustration, multimedia, photography and electronic publishing.

Utah Valley University (UVU) Digital Media Program (DGM)
UVU is leading a statewide effort to accelerate the growth of Utah's digital media industry by bringing the state's business, government, and academic leaders together to create an integrated and cohesive strategy. UVU DGM integrates conceptualizing projects through analysis, design and evaluation and developing skills of creativity and teamwork to deliver products.
Weber State University (WSU) Computer Science Program
In partnership with Disney's Avalanche Software and Microsoft, WSU hosts an annual 2D video gaming camp for high school students using Game Maker. WSU's Design Graphics Engineering Technology program allows students to receive

Bachelor's and Associate's degrees. Students explore applications in 3D Modeling, CAD/CAM, Graphics and Animation.

Dixie State College (DSC) Visual Technologies (VT)
Dixie State College offers a 4-year degree program in Computer and Information Technology with an emphasis in Visual Technologies. VT coursework includes Graphic Arts, Graphic Design, Desktop Publishing, Illustration, Computer Graphics, Web Development, Multimedia Development, and Digital Video Development.
Neumont University Computer Science Programs
Neumont University began with its first freshman class in 2004. This new private university offers Bachelor of Science degrees in Computer Science, Master of Science degrees in Computer Science and MBA's in Enterprise Informatics. Neumont aims to educate the most sought-after software developers in the world. They have partnered with IBM and Microsoft.

College of Eastern Utah (CEU) Graphic Arts Program
CEU offers many courses from its Graphic Arts Program. Coursework includes Basic and Intermediate Illustration, Drawing Fundamentals, and 3D Modeling and Animation.