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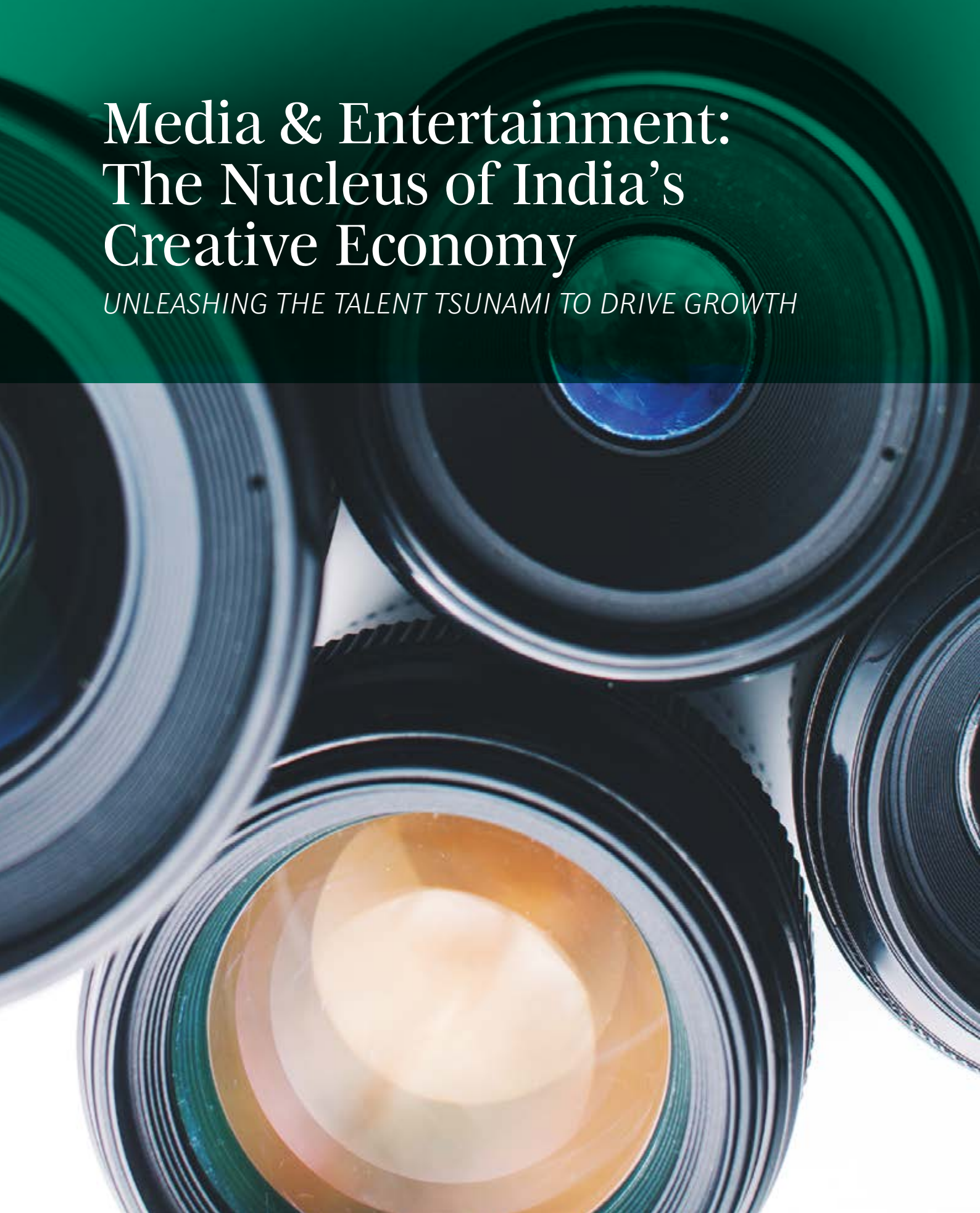
THE BOSTON CONSULTING GROUP

Media & Entertainment: The Nucleus of India's Creative Economy

UNLEASHING THE TALENT TSUNAMI TO DRIVE GROWTH

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MEDIA & ENTERTAINMENT: THE NUCLEUS OF INDIA'S CREATIVE ECONOMY

UNLEASHING THE TALENT TSUNAMI TO DRIVE GROWTH

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has over 8,500 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 200,000 enterprises from around 250 national and regional sectoral industry bodies.

CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes. Partnerships with civil society organizations carry forward corporate initiatives for integrated and inclusive development across diverse domains including affirmative action, healthcare, education, livelihood, diversity management, skill development, empowerment of women, and water, to name a few.

As a developmental institution working towards India's overall growth with a special focus on India@75 in 2022, the CII theme for 2017-18, India@75: Inclusive. Ahead. Responsible emphasizes Industry's role in partnering Government to accelerate India's growth and development. The focus will be on key enablers such as job creation; skill development and training; affirmative action; women parity; new models of development; sustainability; corporate social responsibility, governance and transparency.

With 67 offices, including 9 Centres of Excellence, in India, and 11 overseas offices in Australia, Bahrain, China, Egypt, France, Germany, Iran, Singapore, South Africa, UK, and USA, as well as institutional partnerships with 344 counterpart organizations in 129 countries, CII serves as a reference point for Indian industry and the international business community.

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1. Foreword

Welcome to the 2017 edition of CII Big Picture Summit's knowledge report, in partnership with BCG, on the future of the Indian media and entertainment industry.

The media and entertainment industry plays a significant role in the economy of our country, with a direct impact of over INR 130K Crores in 2017 alone, while also employing over a million people. The industry is currently witnessing a fundamental shift, with many disruptions-changing consumer behavior, structural changes in how content is produced and pervasive use of data in all decision making. Many of these trends and technological disruptions trends will have a course-altering influence on the talent and skill requirements of the industry. Consequently, many new job roles are being created while existing roles are transforming. A significant chunk of sales and marketing activities, for example, are moving towards being data and analytics driven.

India is in a unique position to take advantage of these tectonic shifts, given both its significant long-term growth potential as well as its demographic dividend, which offers it a unique opportunity to continue the strong double digit growth in the Media industry. The right enabling ecosystem to identify and build the required talent pipeline will be critical to monetize this growth and create value. A cohesive partnership between the government and industry is the only way this opportunity can be realized for our country.

CII and BCG thank our stakeholders for their valued perspectives and support towards enriching the content of this knowledge report. We continue to look forward to your feedback in enhancing the usefulness of this publication.

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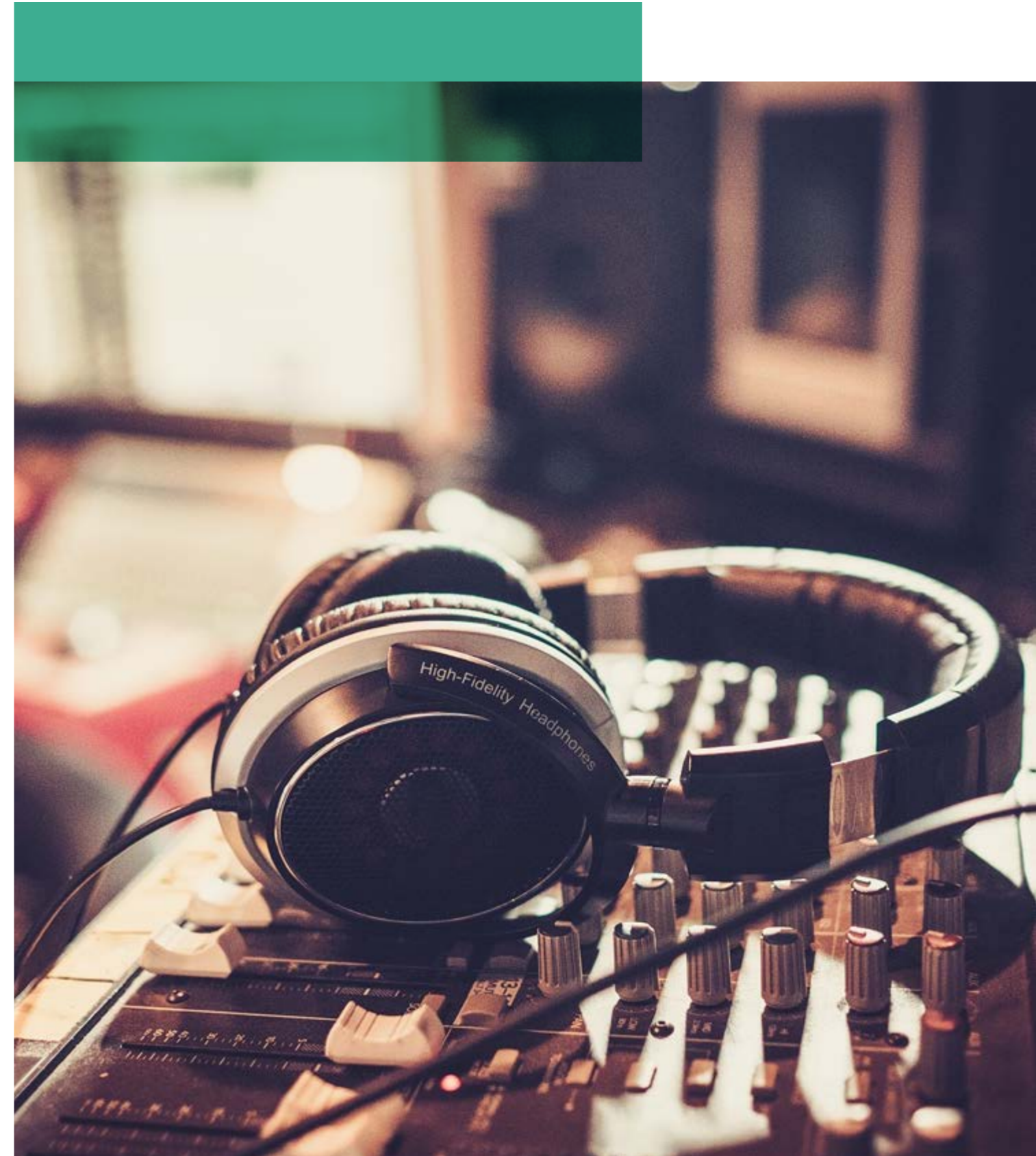Boston Consulting Group (BCG),
India

2. Executive Summary

The Media and Entertainment industry has been the powerhouse of creative talent in India for several decades. The Media industry has added over INR 50K Crores in output in the last five years and is at INR 130-135K Crores in 2017. Taking into account the indirect and induced benefits to the economy the total industry size is ~INR 450K Crore, with a contribution of 2.8% to GDP. The industry also employs, across both formal and informal sectors 1-1.2 million people, contributing significantly to India's job creation.

Most media companies are aware of the massive shifts in content creation and consumption in their industry. Companies are reinventing themselves by innovating their business models to both attract and retain audiences. The three vectors of growth highlighted in the previous year's report – the digitally connected consumer, the rural consumer and the potential of niche content – continue to represent the opportunity pools of growth in the industry.

The industry promises to continue a strong double digit growth in the next five years, and is poised to add 700-800K new jobs in the country. With the rising consumer demands, changing business models and digital disruptions, the industry needs to prepare itself for a completely different and perhaps, unrecognizable workforce by 2022. The demand for talent and functional skills in the industry will outstrip supply given the pace of growth. Concerted efforts from the government, academia as well as industry bodies are the need of the hour to create a large and skilled workforce to take the industry to the pinnacles of growth.

In summary, there is significant potential for growth, with industry creating additional 700-800K jobs in the next 5 years. However, industry participants with the support of the government need to build a strong pipeline of talent and ensure large scale upskilling of its current workforce.

3. The Indian media & entertainment story: Poised to be the economy's next blockbuster

Potential to add 250K Crores, when compared to direct revenue GDP contribution to global average of 2.6%, India is at ~1%

The media and entertainment industry has been the powerhouse of creative talent in India for several decades. Still, the growth of this sector was curbed by the limited platforms available for consumption, which are now fast changing with the smartphone revolution underway. India already has the largest smartphone user base in the world. By 2020 it is predicted that every second Indian will have a personal media consumption device.

Additionally, Indians are now displaying an increased propensity towards consumption and spending on leisure and entertainment, given the significant rise in disposable incomes and aspirations of the upwardly mobile on the back of the country's secular growth story. The Indian government has also backed the growth of the M&E industry through several initiatives such as the digitization of cable networks and raising FDI limits in cable and satellite platforms to 100% from 74%. These initiatives have enabled Indian media firms to now gain easier access to institutional finance, further catalyzing rapid growth.

Driven by these tailwinds, the Indian media and entertainment industry has grown at a strong 10% from 2011 to 2017, adding over INR 50K Crores in additional revenue to the Indian economy. This is despite the short term blip in the last two years on the back of demonetization and GST reforms which are expected to be only a short term impact. Today, the media and entertainment industry accounts for 1% of India's GDP in direct terms alone and is poised to continue a strong double digit growth in the coming years.

Despite its strong growth, the sector continues to underperform to its true potential. Globally, the media and entertainment industry contributes on average ~2.6% of a country's GDP. In India, this number is still well below the average at ~1%. If the media and entertainment industry were to mature in India and match the global average, we would add over INR 250K Crores to the Indian economy.

Indian M&E industry added ~50Cr between 2012 to 2016

Industry size in INR Cr ('000)

While the sector has grown faster than ~10% over the last 5 years, demonetization and GST reforms have resulted in muted growth in 2016 and 2017.

These are short term implications, and the industry is likely to make a quick recovery.

~+10%

130-135

81

- Television
- Music
- Film
- Outdoor
- Print
- Digital
- Radio
- Animation & VFX

2012   2017E
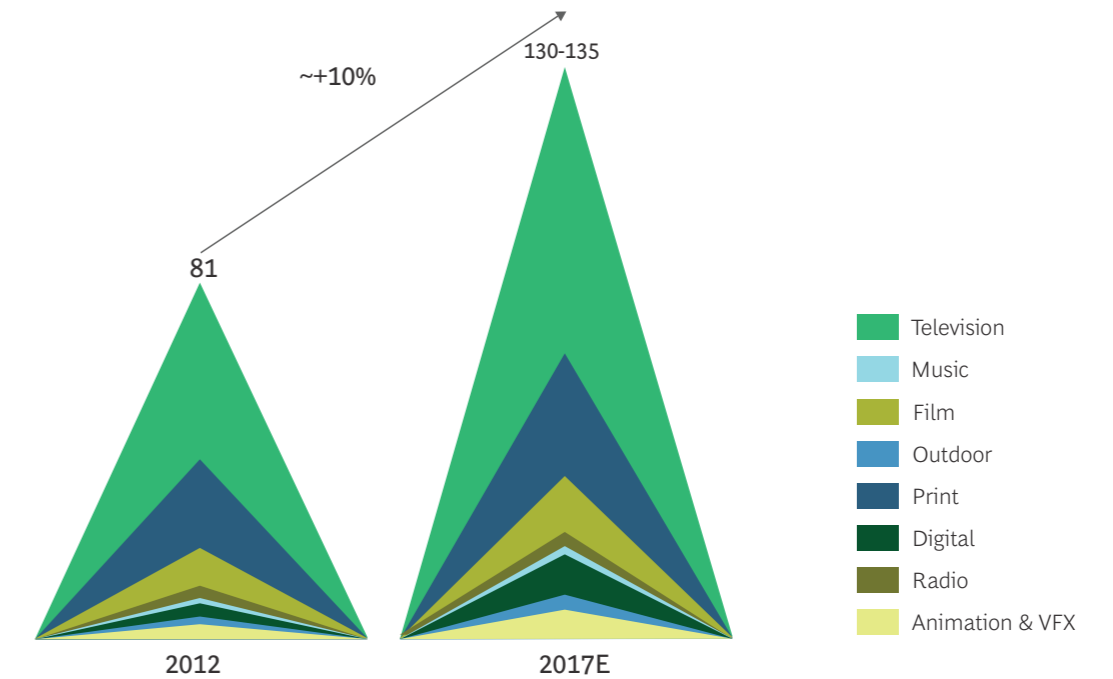
Source: Pitch Madison, Ovum, Industry reports, Expert interviews, BCG analysis

Indian M&E has room to grow; contributes ~2-3% GDP in-comparable economies

Market potential
Base case estimate: 2.6% $380k Cr
Conservative estimate (developing only): 2.1% $300k Cr

Developed countries (except China, Brazil) | Developing countries
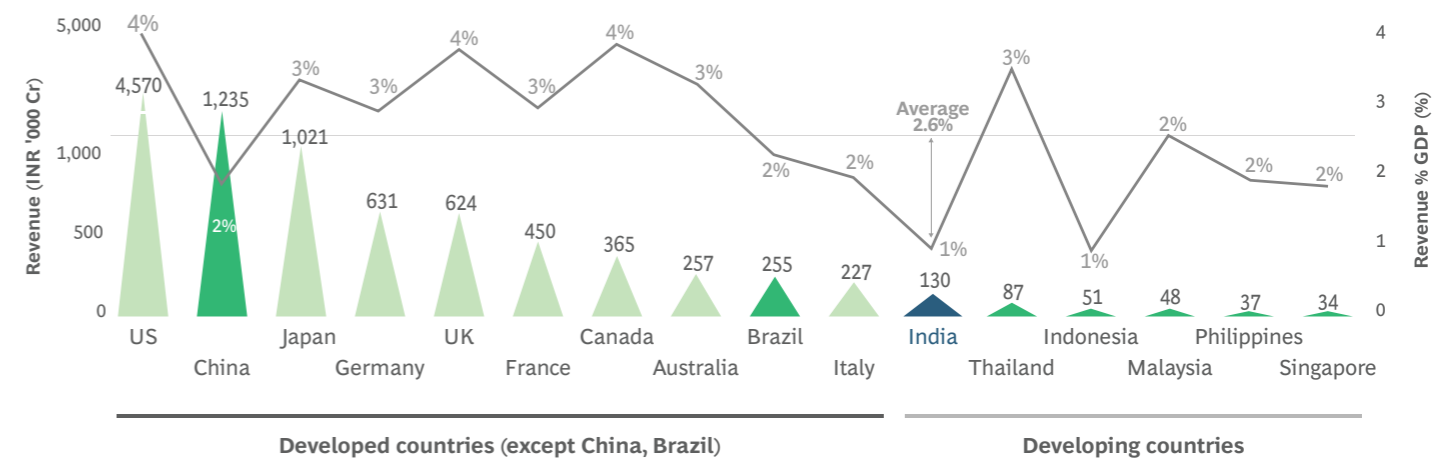
Source: Pitch Madison, Ovum, NCAER, analyst reports, expert interviews, BCG analysis

3.1 Total economic impact: Direct, Indirect and Induced effects

Total economic impact captures Media industry's multi-faceted implications on revenue and jobs in ancillary industries.

The media and entertainment industry's economic impact on the country's GDP extends beyond just direct revenue. There are multi-faceted economic implications of the industry on the overall economy. The movie industry, for instance, will call upon entertainment lawyers when drafting contracts; sets will require electricians, carpenters and painters to help put on shows. In transactions such as these, the media industry has an indirect economic impact on other industries beyond the direct revenue generated. The core sectors therefore generate jobs, wages, and output for the suppliers, professionals, and contractors they rely on in the course of business.

There are several methods of measuring economic impact. The input-output analysis, invented by Wassily Leontief (Nobel Prize-winner in 1973), is considered a reliable and sophisticated model. This method is based on the input-output tables published by the Ministry of Statistics and Program Implementation (MOSPI), employment data from the National Sample Survey Organization (NSSO), and supplemented by research from the National Council for Applied Economic Research (NCAER).

The input-output tables capture the inter-industry transactions across different industries. MOSPI defines 130 different industries (Appendix 8.1) in the standard input-output table. Media and Entertainment is included under item 129. They show the value of goods and services produced by each industry and who purchases them (e.g. some goods, such as cars, are mainly sold to final consumers, while others, such as steel, are used as input to other industries in producing more goods and services). Thus, input-output tables show the relationships that exist between industries. From these tables, it is possible to determine what types of inputs, such as raw materials, manufactured goods and labor, are used by any industry.

The total economic impact of the media and entertainment industry has three distinct components:
1. Direct impact:
   The jobs, wages, and output generated within the core media and entertainment industry ecosystem. The core, or direct, output consists of revenues including sales to consumers and business-to-business spending within the industry. It should include the formal and informal sectors.

2. Indirect or flow on impact:
   The revenue generated in the economy that are caused by subsequent suppliers' production as a consequence of related economic activity. This can be understood as all other production activities as a result of the relations between direct suppliers and their subcontractors in the local economy.

In the Media industry, the main drivers of indirect impact are communication, electronic equipment (e.g. TV sets, mobile handset, etc.) and electricity which contribute to 20 - 30% of the indirect revenues. Additionally, financial services, infrastructure, services and transportation contribute close to 30-40% of the consumption of services outside of the core media industry.

3. Induced impact:
   The jobs, wages, and output generated as a result of employees in direct and indirect sectors spending their wages in the country. Induced impact is generated by the income (compensation to employees) and employment generated in the economy across sectors benefiting from this increased consumption spend.

There are two major economic impacts that are considered for this study – 1) income and 2) employment. These are estimated using economic multipliers:

- **Type 1 multipliers[1]:**
  › **Output multiplier:**
    Measures the direct and indirect impact of the M&E industry on the economy. This is a multiple of the industry revenue. Reference the methodology described earlier at 8.1, 8.2.

  › **Employment multiplier:**
    Measures the direct and indirect employment created by the M&E industry. This is a multiple of the number of jobs created annually. Reference the methodology described earlier at 8.1, 8.2.

- **Type 2 multipliers[1]:**
  › **Output multiplier:**
    Measures the direct, indirect and induced impact of the M&E industry on the economy. This is also a multiple of the industry revenue. Reference the methodology described earlier at 8.1, 8.2.

  › **Employment multiplier:**
    Measures the direct, indirect and induced employment created by the M&E industry. This is also a multiple of the number of jobs created annually. Reference the methodology described earlier at 8.1, 8.2.

Source: NCAER "Impact of Housing on GDP and Employment" (2014), MOSPI Input- output tables 2013–14
Note: Impact of Investments in the Housing Sector on GDP and Employment in the Indian Economy, April 2014; Input – Output table for India: 2013–14, NCAER

[1]http://www.livemint.com/Industry/QWzIOYEsfQJknXhC3HiuVI/Number-of-Internet-users-in-India-could-cross-450-million-by.html

Economic impact of an industry goes far beyond just revenue earned

Induced impact
Influenced consumer spend such as tourism, consumer goods, retail

Indirect impact
Trickle-down growth in other industries due to media and production activities

Direct impact
Revenue from core media activities
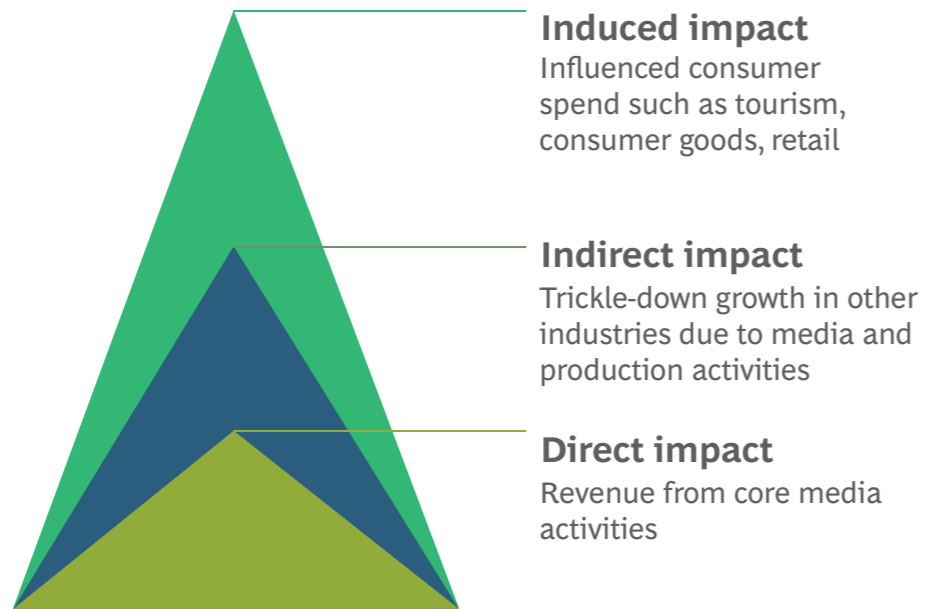
How do we quantify this impact?

Type I multiplier
estimates direct + indirect impact

Type II multiplier
estimates direct + indirect + induced impact

ex: Total GDP impact =
Type II revenue multiplier x revenue

"Source: Indian IO table (MOSPI), Expert inputs, BCG analysis"

3.2 Total Economic Impact: Revenue

Total economic impact of ~450K Crores on the Indian economy by the Media and Entertainment industry

Comparing the revenue multiplier of 3.5 in Media and Entertainment industries across other countries, highlight that we are well above the global average of 2.4. Typically, as industries achieve scale and more activities are done in house the multiplier will start reducing as is visible in developed markets like UK and US.

The detailed methodology employed to estimate these numbers can be found in Appendix 8.2.

The direct revenue generated by the media and entertainment industry is ~INR 130-135K crores. When considering the total economic impact including direct, indirect and induced benefits, the total output is ~ INR 450K Crores, a multiplier effect of over 3.5. This is a significant benefit to the overall Indian economy and means that every rupee earned in the industry translates to 3.5 rupees to the country, and a contribution of 2.8% to the Indian GDP.

Contribution by industries vary significantly, comparable service related industries like hotels, restaurants, trade contribute ~7% to GDP whereas Financial services contribute ~ 6%.

Revenue impact multiplier for entertainment segments across markets

Average economic impact multiplier 2.4

Indonesia	India	Taiwan	China	South Africa	Canada	South Korea	UK	Hong Kong	Netherlands	Malaysia	USA	UK
3.5	3.5	3.0	2.7	2.5	2.3	2.3	2.2	2.2	2.1	1.9	1.3	1.3
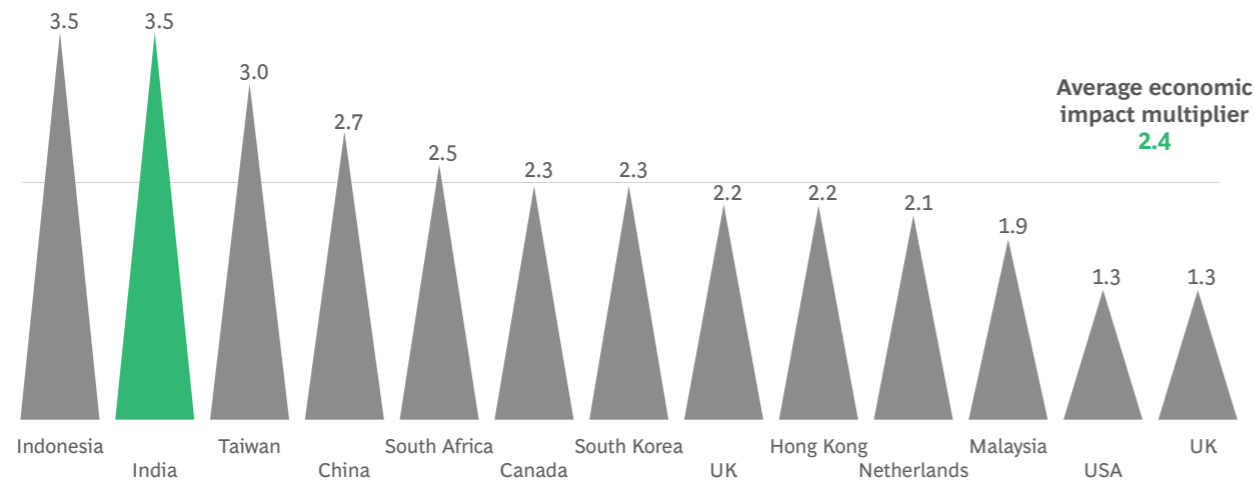
1. Across types of media: print, TV, film and music
Source: Oxford economics, Industry reports, BCG analysis

Total economic impact of ~450k Crores, contributing to 2.8% GDP

INR '000 Cr

Revenue 2017 (Direct)	Indirect	Induced	Total
~130-135	~190-200	~120-140	~400-450

Source: Indian SUT 2013-14 (MOSPI), NCAER analysis, Expert interviews, BCG analysis

3.3 Total Economic Impact: Employment

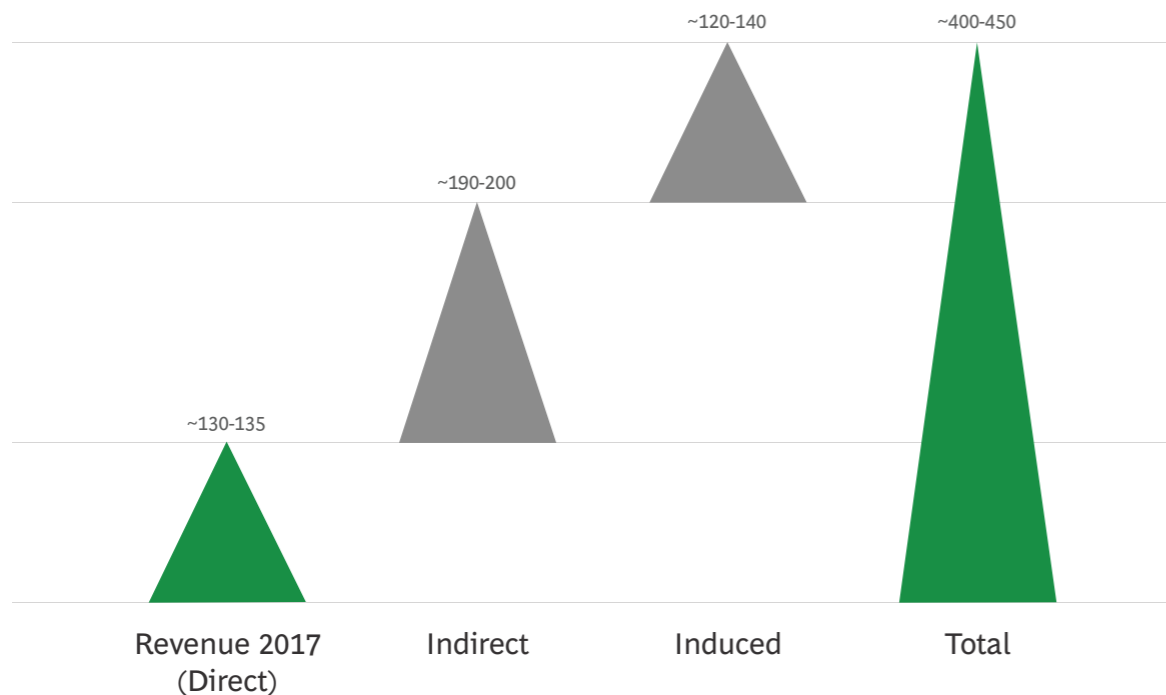**Total employment opportunities generated by the media and entertainment industry is ~3.5-4 million jobs in 2017**

The media and entertainment industry employs 1.1-1.2 million employees, making a significant contribution to the Indian job market. These jobs are spread across various verticals within the industry including Films, Print, TV, Music, Radio and other smaller sectors like Gaming, Animation, etc. As we prepare and move with the digital revolution that is fast disrupting the industry, it is important to understand the types of jobs that the industry offers.

The entire swathe of jobs in the industry have been classified into seven main job families that cut across sectors within the industry. Broadly, these jobs are fungible and skills can transfer across segments like films, TV, Radio etc. Of the 1.1-1.2 million jobs identified in the industry, 44% are currently operations roles (E.g., ticketing agents, DTH installers, spot boys, camera crew etc.). ~18% of the core roles include content creation, supported by a similar number in the sales and marketing functions. Further, a growing 9% currently manage

the technology and ~2% are dedicated to data analytics.

The direct employment generated by the media and entertainment industry is currently at 1.1 – 1.2 million jobs. Although, similar to the revenue calculations above, when considering the total economic impact including direct, indirect and induced benefits, the total employment opportunities generated by the media and entertainment industry is close to ~3.5-4 million jobs, a multiplier of 3.6.

This is a significant number to note, as creating one job in the media industry is creating a total of 3.6 jobs in the economy ranging from communication, electronics, service industries etc. Comparing the multiplier to similar service industries, it is evident that Media is a strong driver in generating additional jobs in the market. For example, the business services industry which includes IT BPO services currently at a multiplier of 2.9.

The industry directly employs over one million people

Content	Content production, post-production, publishing, etc.
Sales	Advertising slot sales, licensing deals, etc.
Marketing	Marketing, customer acquisition, promotional activities
Support	HR, IT, Legal, Finance and Accounting
Analytics/Strategy	Data analytics, Business analytics
Technology	Software programming, broadcast equipment, system integration
Operations	Operational activities, distribution

2%
4%
9%
9%
13%
18%
44%

2017

Source: Pitch Madison, Ovum, Industry reports, Expert interviews, BCG analysis

Total emplyoment including indirect and induced is at 4 million in 2017

Total number of jobs (million)

Employment 2017 (Direct)	Indirect	Induced	Total
1-1.2	1.6-2	0.8-1	3.5-4

Source: Pitch Madison, Ovum, Industry reports, Expert interviews, BCG analysis

Employment impact multiplier across Indian service industries

Ø 3.2

Software Industry (Software developers, Mobile app developers, etc.)	Legal Services (Law firms, regulatory bodies, etc.)	Media & Entertainment (Film, TV, Radio, Print, Animation, etc.)	Hospitality (Hotels, restaurants, resorts, tour operators, etc.)	Business Services (Accounting, Consulting, Marketing, etc.)	Social & Personal Services (Concierge, NGOs, etc.)	Education (Schools, colleges vocational training institutes, etc.)
4.2	4.1	3.6	3.6	2.9	2.0	1.8

Source: Indian SUT 2013-14 (MOSPI), NCAER, expert inputs, BCG analysis

4. Up, up and away: M&E industry growth

Three main drivers of growth, Rural users Internet connectivity Regionalisation of content

The next five years could fundamentally change the face of the media and entertainment industry in India. Unlike in the West, where many parts of the industry are struggling, India's unsaturated markets is flush with opportunity. Demand levels are set to surge as vast, latent consumer segments get tapped. On the other hand, robust economic growth is set to catalyze further growth of the advertising pie. If India could reach China's media consumption levels, it could create an incremental "Billion media hours" a day, given the similar sized population without strict state propaganda censorship on content.

Three key opportunities will be the drivers of consumption growth over the coming 5 – 7 years:

- Tapping the rural un-connected consumer
- Capturing a large share of time of the digitally connected consumer
- Explosion in the supply of strategically segmented audiences

India currently has over 450 million Internet users, representing an overall penetration level of 31% with about 60% of urban pockets and 17% of the rural population having access to this leveler, according to IAMAI data[2]. Internet consumption is proving to be an additive form of media consumption as compared to being substitutive. Internet connectivity is fundamentally changing individual media consumption habits across the country as it increases the number of hours spent on media consumption in a day. The digitally connected population consumes approximately 50% more media on a per capita basis than consumers without access to the Internet.

There is a large chasm between the daily Internet consumption of the rural population versus their urban counterparts. As an increasing number of rural households become media-literate, emphasis on rural distribution and creation of specific content for these markets will ensure such centers leapfrog into the digital age. It is predicted that by 2020, every second Indian will have a personal media consumption device.

Markets within India that offer a large supply of content for individual consumption and homogeneous consumer communities are characterized by high per-capita consumption e.g.: Tamil Nadu and Andhra Pradesh, among others. These markets see a large volume of content consumption in their primary language with growth driven by niche genres of content. An increase in supply targeted at segmented audiences can dramatically unlock further consumption potential.

4.1 Industry growth outlook

India is gearing for a consumption explosion. India already has 250 Million digital screens (smart phones, tablets, laptops and PCs), which is more than the number of TV and film screens put together. This number is projected to multiply to 600 Million by 2020, implying that every second Indian will have a personal media consumption device. New consumption behaviors will get created with always-on, on-the-go, on-demand and seamless pick-where-you-left models across multiple devices and time frames. The distinction between prime and non-prime time will become redundant due to these changing patterns and behaviors of online consumption.

In 2016, BCG undertook a consumer survey encompassing over 20,000 respondents across several urbanization and income profiles to understand media consumption patterns across various demographic segments in India.

Three vectors of growth were identified with the potential to unlock media consumption, and represent true opportunity pools that serious media players would need to target in a focused manner. These focus areas have higher probability of

driving break-out growth for the industry as a whole. They can also push erstwhile growth rates to significantly higher levels than the current ones arising from secular trends that are already seen to be unfolding.

The expected growth over the next five years, 2017-2022 is expected to be~11-12% with the industry looking to add over INR 350K crores of additional revenues (Direct, indirect and induced) to the Indian economy.

Within this environment of change, India has the potential to emerge as a global M&E hub. Opportunities, content and players are all becoming universal and India—backed by a stable macroeconomic outlook, a youthful, English speaking workforce and the government's "Make in India" and "Digital India" blueprints—is strongly positioned to exploit such trends. To attain this stature, India needs to establish itself as a global production hub and attract global investment. Industry and government must come together to invest in education and infrastructure to attain this dream. Creating clarity on the IPR policy and enhancing ease of doing business will also be critical to propel growth.

Media and Entertainment industry to add ~100K Crores in direct revenue in the next 5 years
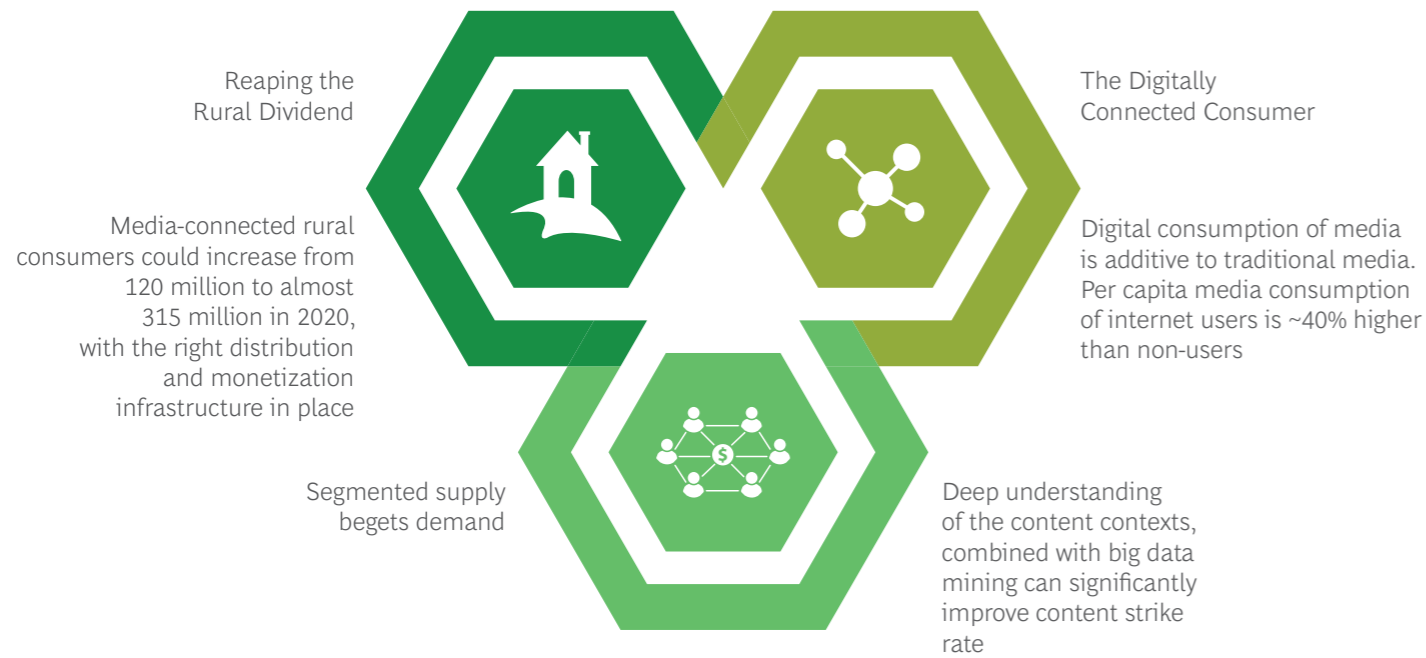
The visual effects (VFX) industry is a rapidly evolving segment in the Indian media & entertainment industry and is a good example for the case to India becoming a global hub for the production of media and entertainment content. It is being increasingly used by the visual media in India and can be broadly classified into the following verticals — movies, TV shows and advertisements. The segment is still at its nascent stage with mainly low-end work being done in India. Domestic consumption is fairly small, and therefore, the bulk of the work includes outsourced projects. In fact, of the total INR 4,200 crore animation market in India 70 per cent comes from international project. There is a significant growth in the number of VFX companies operating in India. For example, Indian post-production company Prime Focus has worked on 200 visual effects for James Cameron's Avatar, one of Hollywood's largest "grosser" ever. Similarly, much of the detailed animation for the live-action/ CGI Disney film The Jungle Book was done in the Bengaluru offices of the Soho-headquartered Moving Picture Company. The film won the Oscar for Best Visual Effects.

Moreover, domestic players are setting up local offices abroad to provide enhanced client servicing.

Tata Elxsi has a facility in Los Angeles and Pixion has acquired two studios in London. Prime Focus also has offices in the US, UK and Canada. However, currently, India accounts for only around 10% of the total animation and VFX outsourcing pie and there is room for growth and the amount of work coming to India from Hollywood is on the rise. Many governments viz. UK, US, Australia offer tax incentives to VFX work. Others like Canada, France, China and Malaysia provide significant incentives by way of subsidies, finance etc. for setting up of studios; while there is no such provision in India. For example, a prominent Canadian studio, Starz Animation Toronto, has received grants amounting to around US$23 million out of a total investment of around US$153 million over five years. Some such countries also provide subsidies if the work is outsourced to a country with which the host/engaging country has a co-production treaty. For India to become the digital hub in the post-production segment (VFX, animation, etc.), it is imperative to have a favorable and enabling policy framework.

This opportunity to create India as a global digital hub will be an important component of the growth story.

Three vectors for media consumption growth

Reaping the Rural Dividend

Media-connected rural consumers could increase from 120 million to almost 315 million in 2020, with the right distribution and monetization infrastructure in place

The Digitally Connected Consumer

Digital consumption of media is additive to traditional media. Per capita media consumption of internet users is ~40% higher than non-users

Segmented supply begets demand

Deep understanding of the content contexts, combined with big data mining can significantly improve content strike rate

Source: Convergence: The New Multiplier for Indian Media & Entertainment's $100 Billion Vision, BCG CII report, 2016

M&E expected to almost double by 2022, CAGR 11-12%

~750-800

~400-450

130-135

230-235

2017E

2022E

Revenue (INR '000 Cr)

■ Direct ■ Indirect ■ Induced

Source: Pitch Madison, Ovum, Industry reports, Expert interviews, BCG analysis

4.2 Employment creation potential

Direct employment in the industry doubling, 1.1-1.2 to 1.8-2.0 Million from 2017 to 2022

Currently 1.1-1.2 Million people are employed directly by the Media industry, although when considering the overall employment including indirect and induced employment results in 3.5-4 Million employees in the complimentary and allied industries.
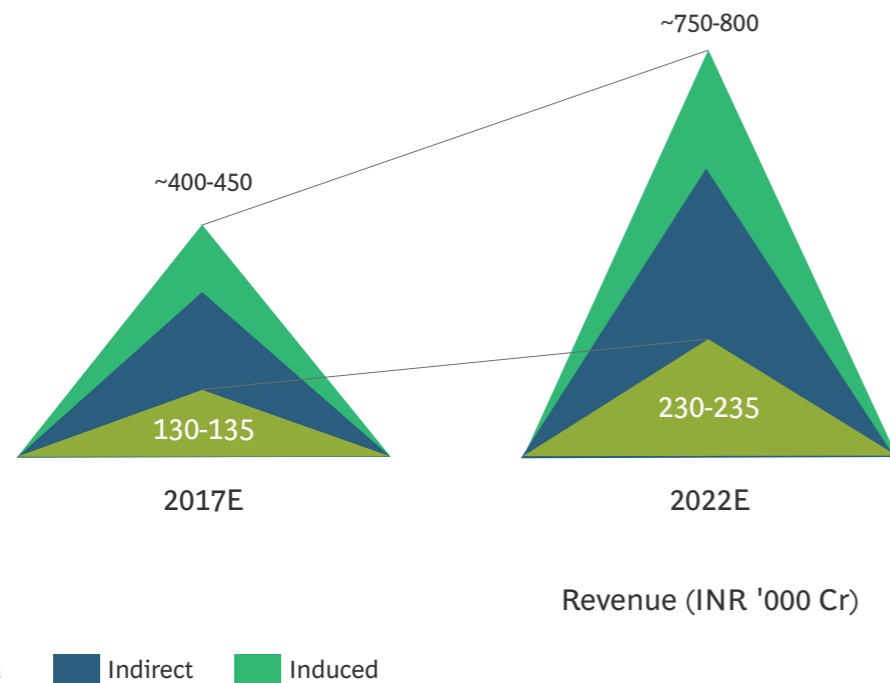
With a strong growth expected in the industry, 700-800K jobs are expected to be added directly to the industry. The current ecosystem does not cater to the requirement for such a large number of jobs in the M&E industry. The next 5-7 years will see two trends playing out simultaneously.

- The need for a very large workforce in the media and entertainment industry. To put

this in context for the last 5 years, India has on average created ~230k jobs every year. The M&E industry alone with require ~140-160K trained / employable individuals entering the workforce every year for the next 5 years.

- At the same time, the skills required for evolving job roles required will completely transform given the many disruptions taking place across consumers, competitors and digital. Concerted efforts by the government, academia as well as industry bodies is required to create a large and skilled workforce to take the industry to the next stage of growth.

Direct employment almost doubling in 5 years, expected to add ~700-800K additional jobs
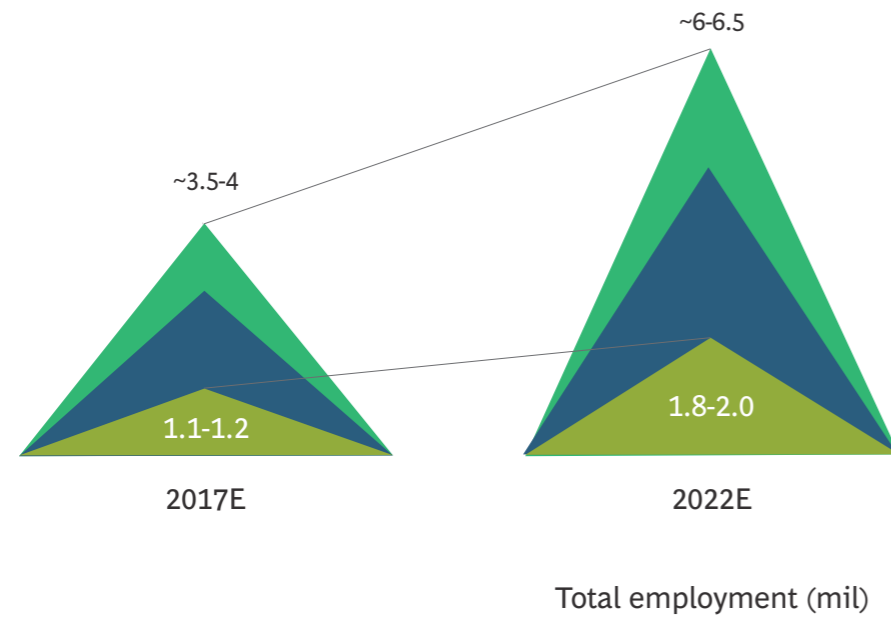
~6-6.5

~3.5-4

1.1-1.2

1.8-2.0

2017E

2022E

Total employment (mil)

■ Direct   ■ Indirect   ■ Induced

Source: Pitch Madison, Ovum, Industry reports, Expert interviews, BCG analysis

4.3 Going beyond the numbers: Role of the creative economy

The media and entertainment industry also has an intangible, but, undeniable role in building a national identity and portraying India's brand globally. It plays an important role in shaping cultural heritage and identity of the country. M&E is uniquely positioned to influence consumer behavior as no other industry is. For example, the release of the Bollywood film, Zindagi Na Milegi Dobara increased Indian tourism in Spain by 35% in H1 2011. The industry works as a "soft power" having enormous impact on India's global standing - as a place worth doing business with; as a place worth visiting; and as a place worth experiencing culture in its many varied forms, thus changing the world's perception of India. Indian cinema, for example, exerts an influence far beyond our borders and across the world. The creative economy of India has the ability to bestow upon us a level of trust, soft power and influence in global forums.

The M&E industry is also an important contributor to social cohesion and nation-building through the promotion of intercultural dialogue, understanding and collaboration. The sector has a multiplier effect in the generation of intellectual capital in the country. It provides us with "cultural capital" – defined as the sum total of a country's wealth or stock of art, heritage and other kind of cultural expression. Like all other kinds of capital, it needs to be invested in. Else, it will depreciate and be devalued over time.

5. Trends shaping the industry: The New Normal

Three mega trends in the Media and Entertainment industry, changing consumer demands, New industry structures and Digital Disruptions

Most media companies are aware of the massive shifts in content creation and consumption in their industry. Companies are reinventing themselves by innovating their business models to both attract and retain audiences.

The number of users accessing the Internet via their mobile devices is expected to reach 3 billion by 2020, covering over 65% of the world's adult population. Today, we live in an always-on, data-rich world, where the digital aspirations of people on both sides of the economic divide is fast converging.

In India, a large section of the un-organized and fragmented sector is going through consolidation into organized sectors. Technological advancements especially in automation, robotics and AI are going to fundamentally transform a large number of current job roles. For example, while sales & marketing continues to remain an integral part of industry, their functions will become far more data driven with the large amounts of consumer data that the digital revolution is enabling.

The many mega trends impacting the industry will have profound effects on the talent requirements of the industry. Many new job roles will be required to support new digital formats, consumer driven content as well as the data driven decision making, which will become pervasive across the organizations.

It becomes increasingly clear that the media company of the future will need to look fundamentally different and is a clear call for action on the talent building agenda.

Below are a sample list of the many types of jobs the Media industry will need to think about going forward.

Each of the trends highlighted above creates a different complexion of talent needs

- Changing consumer demand: content creation is fundamentally changing. The democratization of content distribution has meant that there is much deeper segmentation required with content getting created for specific niches as opposed to masses. This also implies a velocity of content creation that India has never witnessed before. It calls into question the amount of content talent available in the country as well as the skill of this talent to really understand deep consumer insight and segmentation and customize content for that

- New industry structures: the fundamentals of how the traditional media players compete with as well as monetization structures are all coming under question.
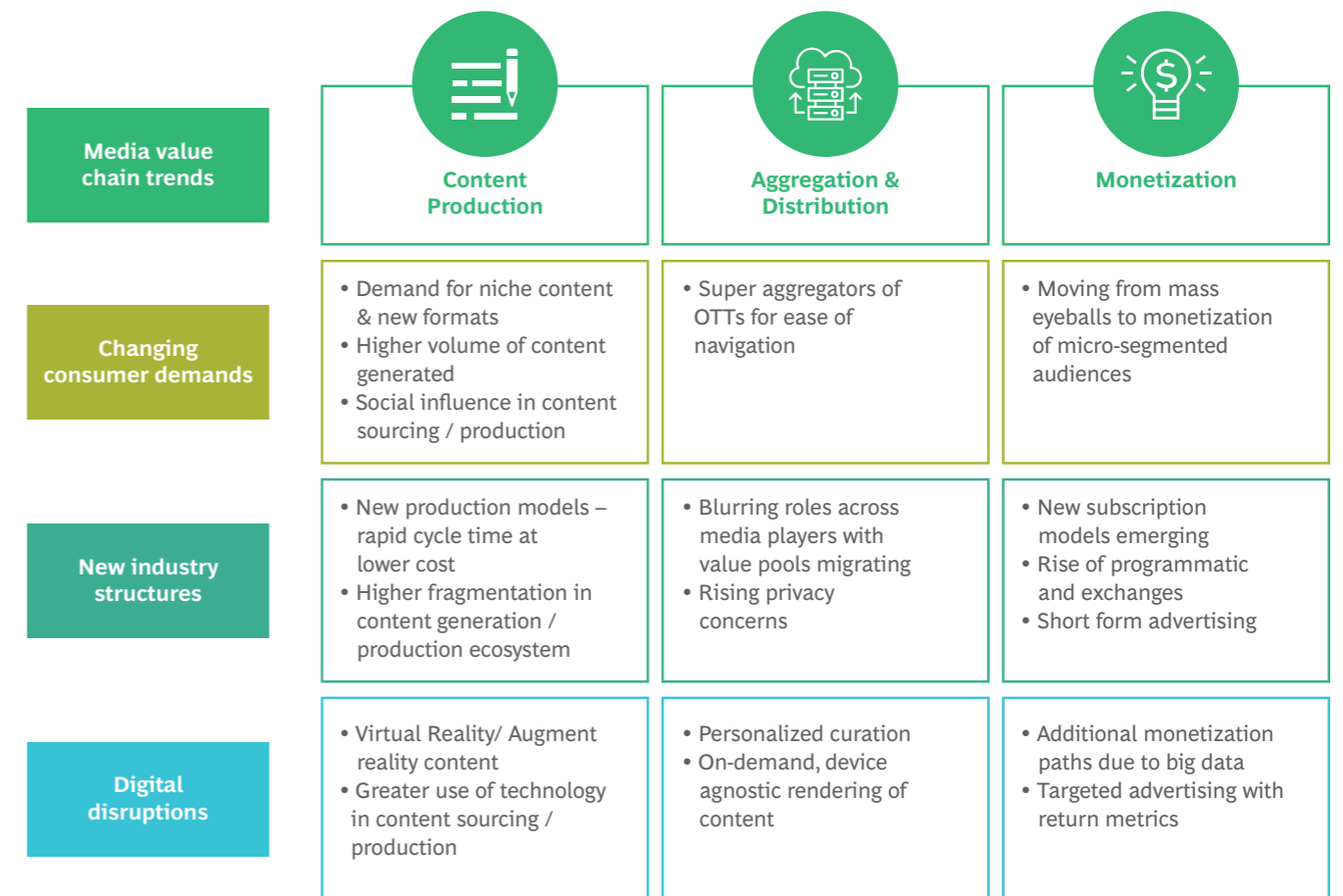
This implies a need for talent that understands digital ecosystems, is able to deeply understand consumer trends using social media, sell ad inventory on programmatic and auctions rather that one way negotiations etc.

- Digital disruptions: the war for talent on technology, analytics and engineering is only beginning and the media sector needs a significant share of this talent to compete in the new reality.
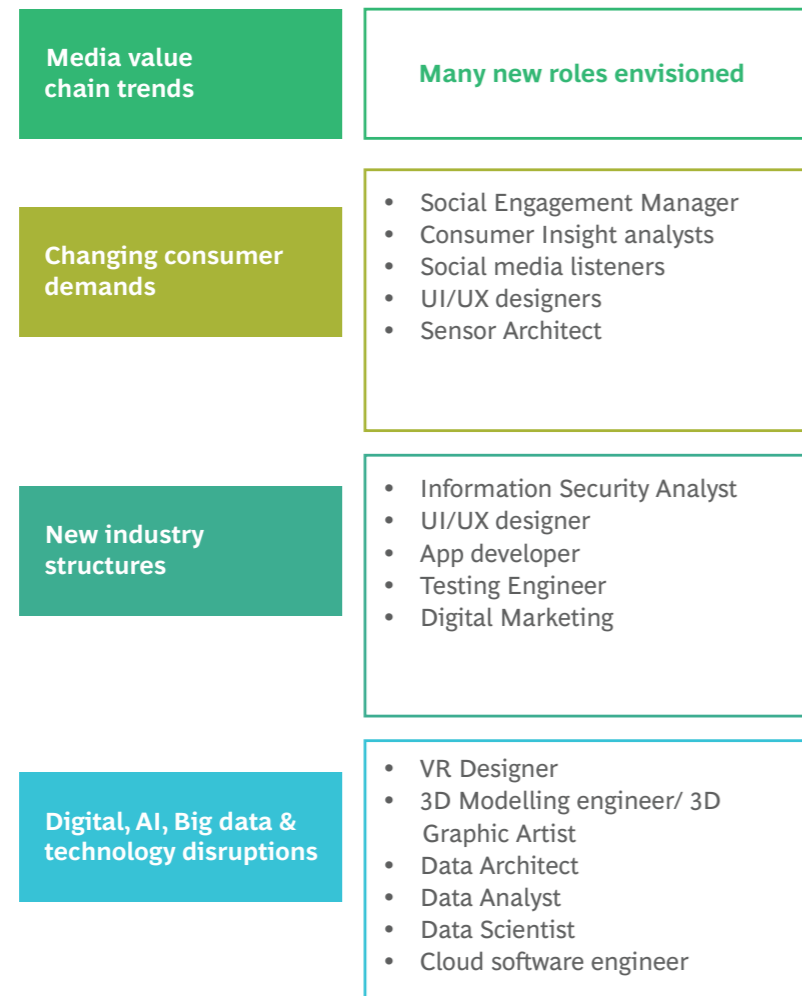
The emergence of digital technologies has also opened up an opportunity for India to position itself as a "digital hub" globally. However, the ever-changing and dynamic nature that is inherent to the sector, coupled with rapid changes in technology, adoption and growing digital mediums of distribution, make talent and its availability a challenge for the industry.

Three fundamental shifts that will transform the industry

Media value chain trends	Content Production	Aggregation & Distribution	Monetization
Changing consumer demands	• Demand for niche content & new formats • Higher volume of content generated • Social influence in content sourcing / production	• Super aggregators of OTTs for ease of navigation	• Moving from mass eyeballs to monetization of micro-segmented audiences
New industry structures	• New production models – rapid cycle time at lower cost • Higher fragmentation in content generation / production ecosystem	• Blurring roles across media players with value pools migrating • Rising privacy concerns	• New subscription models emerging • Rise of programmatic and exchanges • Short form advertising
Digital disruptions	• Virtual Reality/ Augment reality content • Greater use of technology in content sourcing / production	• Personalized curation • On-demand, device agnostic rendering of content	• Additional monetization paths due to big data • Targeted advertising with return metrics

Workforce of the future to have many new and different roles

Media value chain trends	Many new roles envisioned
Changing consumer demands	• Social Engagement Manager • Consumer Insight analysts • Social media listeners • UI/UX designers • Sensor Architect
New industry structures	• Information Security Analyst • UI/UX designer • App developer • Testing Engineer • Digital Marketing
Digital, AI, Big data & technology disruptions	• VR Designer • 3D Modelling engineer/ 3D Graphic Artist • Data Architect • Data Analyst • Data Scientist • Cloud software engineer

Linkedin analytics, Expert interviews, Analyst reports

5.1 Back to the future of talent

> **Shifts in job mix: 55% of current roles are analytics, big data and technology related profiles at a leading OTT**

Shifting consumer behaviors, disruptive technologies, convergence, and quadruple-play offerings are revolutionizing the media industry. While the impending change holds great promise, patterns of consumption, production and likely employment created by the digital revolution also poses major challenges that require a proactive rethink of the overall talent requirement for the industry.

Companies need to move away from traditional HR functions to build HR that is more business outcome driven, positioned to recruit new types of roles and build internal capabilities to adapt to changing business models. As an industry, there is an urgent need to build a pipeline of qualified staff across many different elements of the value chain.

The changes in roles and the profiles are already visible in some of the newer age business who have been set up for the digital age. For example, at a leading OTT player, over 55% of their current roles are analytics, big data and technology related profiles. Although content remains strong at 20%, the productivity, speed-to-output

and formats being produced are very different when compared to any traditional content creation company. Some of the new roles in the company include cloud engineers, data scientists and insights researchers. In fact much of the content talent lies outside the structured formal media businesses who syndicate/ buy content from independent producers. The content talent required to generate the velocity of content is not visible when we only look at the formal employment.
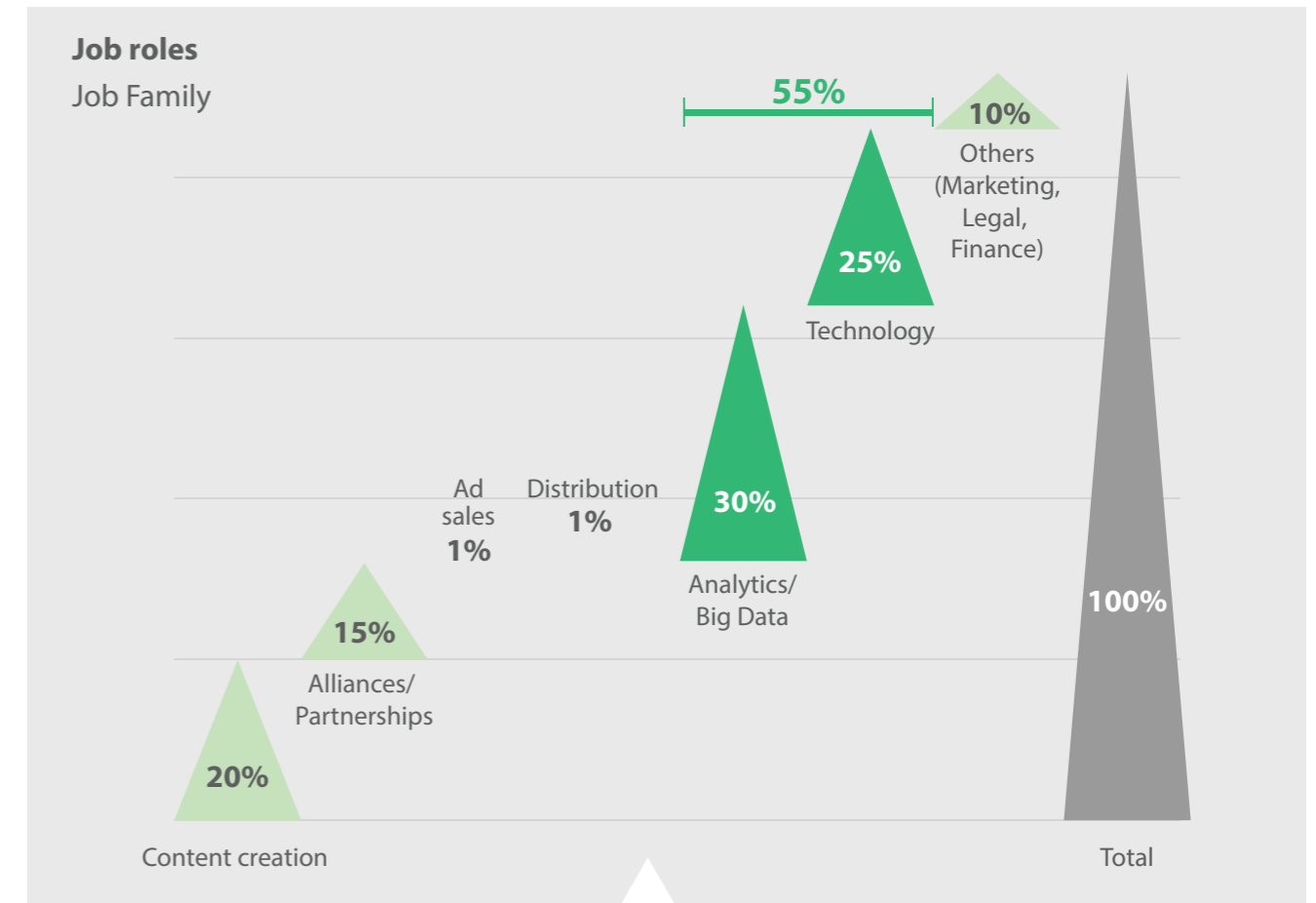
The media and entertainment industry needs to prepare itself for a completely different and perhaps, unrecognizable workforce by 2020. The current roles within the industry are likely to undergo three major waves of transformation:

1. New roles: Given the many trends impacting the industry, many new roles will be created within the industry. We are already witnessing some of these in data analytics and big data but these will go beyond a few data jobs to include technology, AI, cloud support teams and specialist content creators for AR/VR, etc.

2. New skills in existing jobs: Many job families of today —sales & marketing, content creation, etc. – will continue to remain the core of the M&E industry but the skill sets required will transform beyond recognition in the coming years. The proliferation of data in marketing decisions and the extensive move to digital advertising are all just the beginning of this trend towards different skill set requirements for employees in these traditional departments.

3. Different soft skill requirements: The workforce will need to transition from traditional rule and process followers to collaborators, innovators and decision makers. In essence, this will call for a radical change in the approach and mindset of the workforce, which isn't used to the autonomy that these future roles require. Collaborating with smart machines, new technologies and AI will become a reality soon, and a core skills requirement will be the need to work in an environment of constant change and ambiguity.

New age media companies have ~55% Tech & analytics jobs

Job roles

Job Family

55%

10% Others (Marketing, Legal, Finance)

25% Technology

Ad sales 1%

Distribution 1%

30% Analytics/ Big Data

15% Alliances/ Partnerships

20% Content creation

100% Total

Software engineer, testing
Test features of the product and assure quality

Cloud engineer
Provide cloud solutions for content

Senior UI/UX engineer
Architect, develop user experiences on TV & Web interfaces

KEY TECH & ANALYTICS JOB ROLES
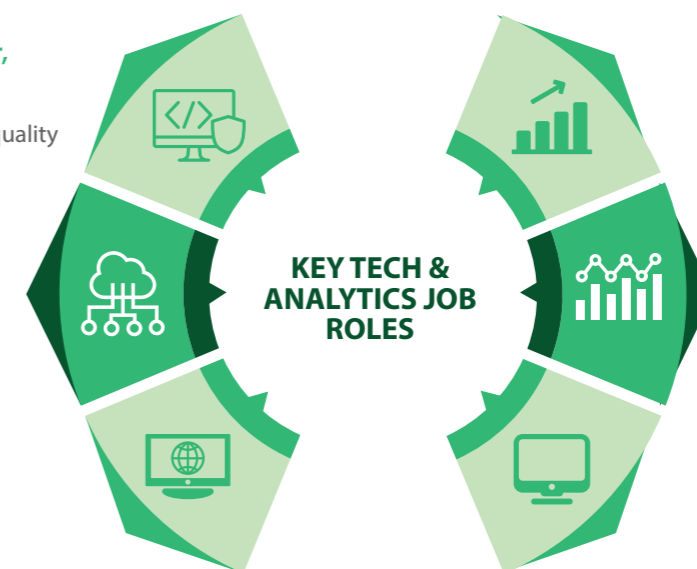
Customer service – insights researcher
Convert customer feedback (through call centres) into business insights

Data scientist – experimentation
Convert customer feedback (through call centres) into business insights

Data scientist – algorithms engineer
Develop improvements to the core algorithms like recommendations

Source: Linkedin analytics, analyst reports

5.2 New trends require new roles

Given the rise of many new advancements, we expect to see the creation of a large set of new job roles. For example, new jobs will be created across the value chain of the media cycle from content creators with technical skills for new platforms to a plethora of roles catering to the data explosion, ranging from data scientists and data architects, etc. Many new technologies like augmented reality and virtual reality will also introduce many new roles, as organizations start building new capabilities to service rising consumer demands for more engaging content.

Below, we highlight one set of new roles in the big data and analytics department that will become a significant driver in media companies.

5.2.1.1 Advent of the Data roles

Analytics and data sciences is gaining more acceptance in the media space as other established companies and sectors (like banking) have already started showing the potential value and results which can be achieved using data-backed decision making.

Keeping in mind that media business has always believed "content is king", the ability of data to further help refine the traditional "gut-feel" with a data backed approach is likely to create the next pocket of growth for the industry in the next few years. In reality, analytics will permeate all functions of media houses – content production, sales, marketing, branding, consumer insight, and pricing and back office support. Hence while at the outset this may seem like a niche skill requirement, in reality it will requires across all parts of the media value chain.

The currency which works in analytics world is called "use cases". An analytics use case is a methodology which helps to achieve a specific business goal leveraging structured and unstructured data with clear measurable outcome.

For analytics function, there are three roles which are most common and will be in the greatest demand in the coming years:

1. Business analyst (BA)
2. Data scientist (DS)
3. Data technologist (DT)

A business analyst act as central contact person between business units and data analytics functions. He / She works with different BUs to select, define, and prioritize "use cases". He/She also works with data scientists to translate business cases into data analytics while driving project timeline and delivery expectations. BAs also analyze and visualize data insights and interpret results to drive value.

A data scientist defines data governance / information management standards. He / She also works with business analysts to define analytical requirements and develops algorithms to generate analytical insights / predictive models. They also prepare, clean, and check data to ensure accuracy for use case development.

A data technologist works with internal IT to design and build technology and data architecture to execute use cases. He / She also models and executes how data is moved, stored and integrated across infrastructure, platforms, and applications. They also work with vendors and internal IT to set up and customize data analytics platforms / applications. The need for data technologists is also increasingly exponentially as each of the media businesses goes online across different digital platforms.

For an analytics function, it is also important to establish some key leadership / managerial positions which can drive the change and evangelize the approach in the rest of the organization. One common approach adopted across companies is the setup of a Centre of Excellence (CoE). This acts as an internal data analytics company which works with individual BUs to find and address key business problems that need to be addressed using data.

> Set up Centre of Excellence (CoE), this acts as an internal data analytics company which works with individual BUs to find and address key business problems

Business analyst translates business problems into complex mathematical problems

- Evaluation of business requirements, and translation into proper advanced analytics solution specifications
- Understand the business implications and assist in defining the solutions to support any future business requirements
- Working knowledge of technologies such as SAS, SQL, Oracle, SAP

Degree: MBA
Work-ex: 2-6 years
Skills: Working knowledge of technologies

Leadership
- Stakeholder (BU teams) management
- Influencing skills and command skills – to drive conclusions with business basis data and analyses

Business sense
- Expertise in process, business model, or industry domain
- Strong analytical skills

Operational excellence
- Hands on expertise in business communication tools/ presentation skills
- Attention to detail
- Strong business documentation skills

Data scientist solves complex mathematical problem with business logic in the background

- Design, develop & execute the required analytical algorithms, techniques, and statistical methods to address and then solve business problems and requirements
- Pilot advanced analytics methods, tools, and platforms
- Work with legacy and new technologies: SQL, NoSQL, R, C, Java, SAS, Hadoop, Pig

Degree: B.Tech (Engg.),
or Masters (Applied Maths /
Stats / OR / Comp. Science)
Work-ex: 2-6 years
Skills: Hands-on experience on
latest technologies (R, Python,
SQL, Hadoop, etc.)

Leadership
- Internal stakeholder management
- Management of team of data scientists

Business sense
- Ability to convert business problems into statistical/ analytical problems
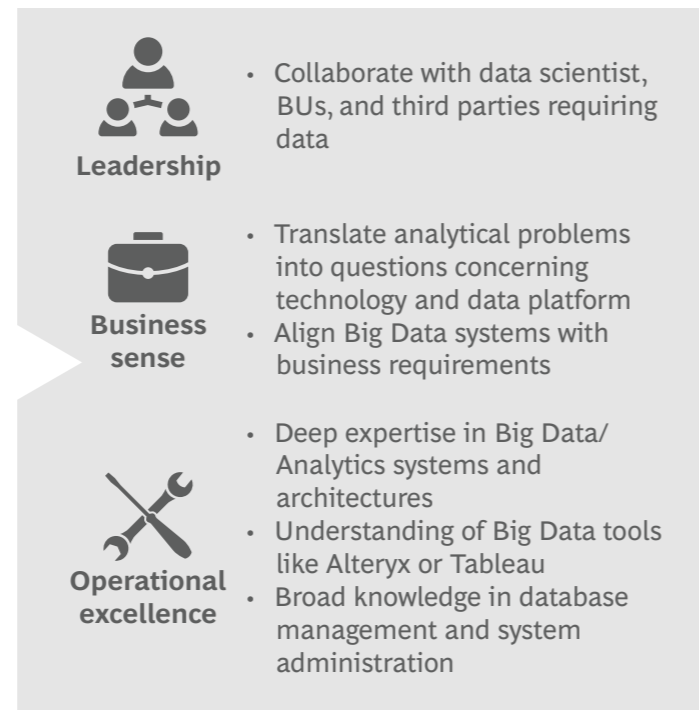- Solving and converting output to business solutions

Operational excellence
- Deep expertise in data mining, analytical/ statistical techniques & solution design
- Experience in handling & managing large quantum of data using tools & techniques

Data technologist brings the data in the shape required by use case team

- Maintain advanced analytics infrastructure and provide ad hoc data access to BUs
- Design, develop and maintain the required warehouse, prepare and refine data to help address and solve analytic problems
- Work with legacy and new technologies: SQL, NoSQL, R, C, Java, SAS, Hadoop, Pig

Degree: B.Tech (Engg.)
Work-ex: 2-6 years
Skills: Hands-on experience on deploying latest technologies

Leadership
- Collaborate with data scientist, BUs, and third parties requiring data

Business sense
- Translate analytical problems into questions concerning technology and data platform
- Align Big Data systems with business requirements

Operational excellence
- Deep expertise in Big Data/Analytics systems and architectures
- Understanding of Big Data tools like Alteryx or Tableau
- Broad knowledge in database management and system administration

5.3 Old bottle, new wine: New skill sets for existing jobs

These disruptions are also fundamentally changing the current ways of working. Sales and marketing roles will continue to remain key to the media industry but may completely transform given the influence of data as well as the many digital platforms to cater to.

Below, we highlight one set of new roles in marketing department, to highlight how even the traditional job roles will evolve as we face many disruptions across consumer, competition and technology.

> Digital marketing is not simply an add-on to traditional marketing. It is a completely new way of operating.

In the US, digital advertising spends in 2017 is on track to surpass spending on television advertising. In India, anecdotal evidence suggests that companies have moved between 10-20% of their advertising budgets to digital. Many start-ups and SMEs are even using digital only as their promotional channel. Digital marketing is not simply an add-on to traditional marketing. It is a completely new way of operating.

A recent report by BCG titled, The Digital Marketing Revolution Has Only Just Begun, says that three forces are fundamentally changing the way marketing can be done:

1. Access to large quantities of real-time data to inform their campaigns: Marketing can now take advantage of abundant,

real-time data. Companies can increasingly follow consumers on this journey, target with greater precision, and track how specific interactions perform.

2. Ability to engage in long-term, omni-channel relationships with consumers (as opposed to one-way, scattershot interactions): Marketing is moving away from one-off transactions and towards pursuing ongoing relationships with consumers to drive business value. Digital channels allow two-way relationships that can drive loyalty and advocacy over a consumer's lifetime and across different touch points and channels.

3. Flexibility to deploy multiple concepts and gather real-time feedback from customers: Marketing is tapping the flexibility and speed of digital. For decades, marketing has been organized around the slow world of TV and print ads, which requires lengthy creative processes, months of fine-tuning, and much uncertainty regarding market feedback.

The new way of marketing demands new skills, including advanced analytics, test-and-learn media design, and data management. At the heart of this change will be marketers who must relearn their trade while reclaiming their role as integral business managers. Existing marketing teams will require retraining, and organization structures will need to be re-designed for more cross-functional teams that can work close to the consumer.

Publishers have had to transform from print to digital, but are now facing a new disruption: the move from direct to programmatic advertising, which can be defined as the purchase or sale of adverts through automated technology.

There has been a transition from analogue advertising to digital and programmatic over the last decade. In developed markets like US, UK etc., ~60% of digital ad spend are expected to be programmatic by 2020 and increasingly, premium inventory is moving towards programmatic execution. TrueCaller is an example of a 100% programmatic publisher.

Three types of capabilities & knowledge are required to drive programmatic drive programmatic advertising.
- Deep knowledge of programmatic channels & product sets
- How to match these to clients' needs and communicate this effectively to clients
- Ability to identify attractive programmatic partners, and nurture relationships with them

Companies will also need to create a new technology infrastructure and develop explicit strategies to acquire, integrate, and analyze data, both in-house and with partners.

Many shifts expected in the Sales jobs

Driver

In addition to sales capabilities, maximizing programmatic revenue requires analytic & tech skills

Specifically on sales capabilities: Buyers increasingly familiar with programmatic, requiring publisher agents to be "at least as knowledgeable" as their clients
- Demand for sales agents that are specialists
- Transitioning towards a sales consultancy model vs agents who gave traditional transaction support

Approach

Build capabilities within existing teams, through learning and development workshops
- Can leverage ad-tech partners to provide training

Hire in new talent to fill key specialist gaps
- E.g. Programmatic specialists/ operations agents to support general sales teams

5.4 Soft skills requirements
from followers to problem solvers

The workforce will need to transition from being rule followers to problem solvers, experimenters, and innovators, from process adherence to value & experience creation, from working with computers to collaborating/teaming with smart machines, robots & intelligent systems. Increased autonomy, empowerment, & data enablement of frontline teams means raising the bar on professional skills - newer & deeper skills are the need of the hour and it will all begin with a change in mindsets.

Some of common elements of upskilling across the workforce will include,

- Enhanced productivity through technology tools
- Creativity and problem solving
- Advanced data analytics tools
- Communication and collaboration techniques

Given the magnitude of learning needed, opportunities need to be created for on-demand and personalized for the employee requirements.
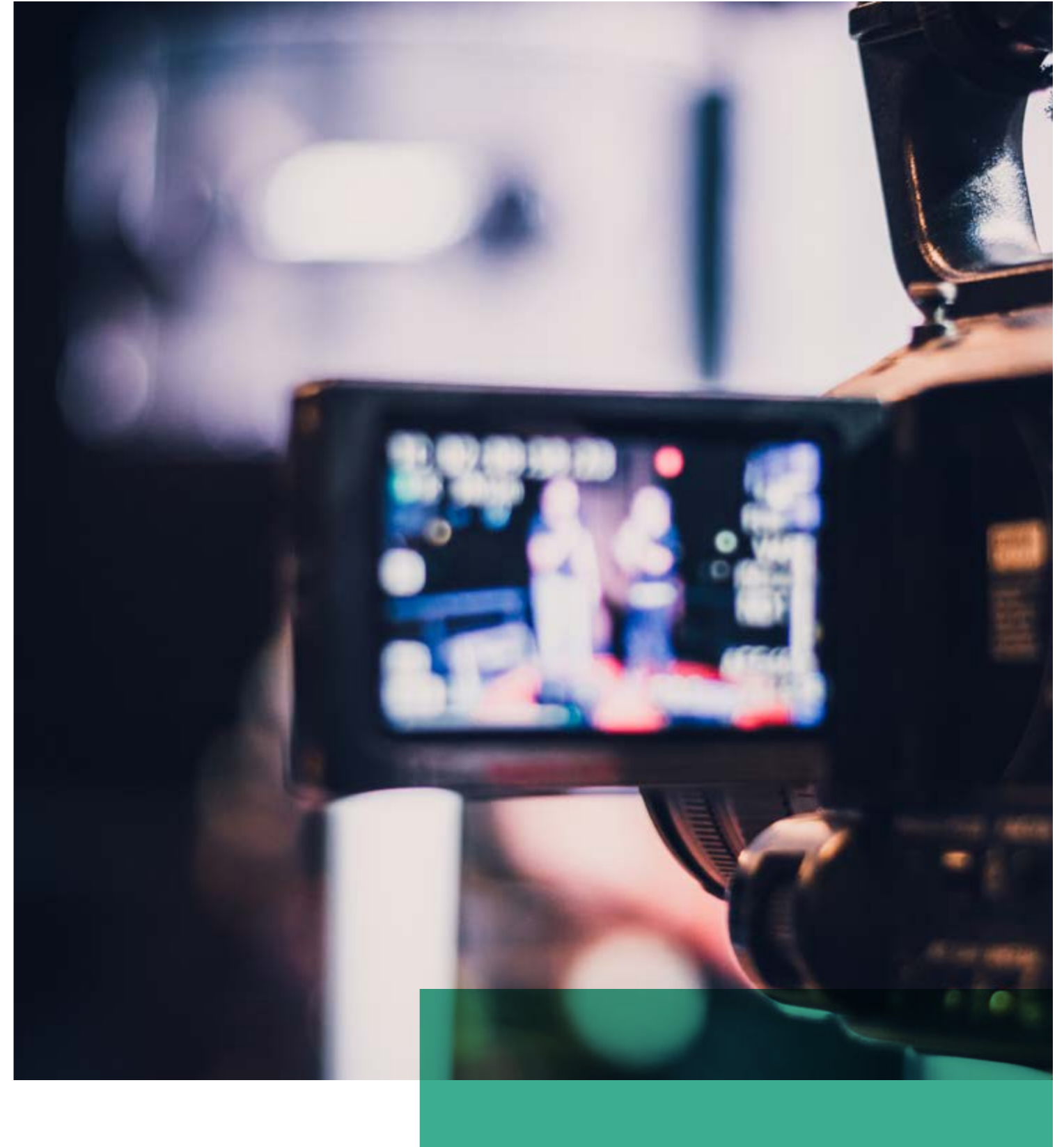
6. Creative India: Pathways for action

For sustained industry growth, the M&E sector needs to urgently fill talent gaps as highlighted above. the Indian M&E industry could look to learn from Indian IT majors, while also inculcating best-practices from the global media industry. Both these industries have benefitted from the interplay of industry-academia partnerships and government and industry associations, leading to a large pool of skilled talent at their disposal.

6.1 Learnings from the Indian IT industry: Becoming a global leader

1.5-2M people are being targeted for re-skilling on these next-gen technologies in India within 4-5 years

IT & ITeS sector is a successful example of how favourable policies and government initiatives can enhance strong structural factors to unlock exponential growth over the long term. The Indian IT industry was at a similar inflection point in India in 1998 and has come a long way since then. From contributing to just 1% of Indian GDP in the 1990s, it has now grown to contributes over 9.3% of Indian GDP and ~3.7 million jobs.

Today, we are experiencing arts and culture through digital-based media, cinemas, televisions, computers and portable devices. Creative industries also increasingly working within global markets, creating content, and production and post-production services. We have the opportunity to further leverage this capability based on India's established reputation for technical and creative skills and efficient delivery.

To become a global digital hub for creative services, the Indian M&E industry can look to learning from Indian IT majors while inculcating best-practices from the global media industry. Both these industries have benefitted from the interplay of industry-academia partnerships and government and industry associations, leading to a large pool of skilled talent at their disposal.

The Indian technology sector has successfully demonstrated that the deepening of functional skills plays a key role in industry growth. In the case of the IT sector, concerted efforts from industry associations such as NASSCOM and the government coupled with continued professional development at individual firms, have been essential in achieving such engagement and resultant skill development.

In 2017, with the major digital disruptions across the industry the industry, association and government have come together to set up a task force for strategizing the way forward for India's future skilling landscape in the industry. Work streams were formed to identify the upcoming technologies and their impact on the Indian IT market including talent and skill requirements. The task force identified the skills of the future, shift in existing service lines as well as the 21st century soft skills required. The key action beyond the identification was to develop a comprehensive enablement program and ecosystem drivers to ensure that the key findings could be translated in to action steps that could be jointly taken forward by the industry, association and government.

On the back of the study, over 1.5-2M people are being targeted for re-skilling on these next-gen technologies in India within 4-5 years.

Initiatives by industry stakeholders to boost IT Talent

NASSCOM →

Industry Bodies
- IT – ITeS skill council to create quality at large scale and enhance employability
- Mentorship and skill dev. program for SMEs by industry bodies
- Industry focused skill development programs designed in liaison with industries by IEEE, NIIT etc.

GOVERNMENT OF INDIA →

Government of India
- Set up government aided specialized institutes for IT education viz. IIIT
- Customized training programs for faculties and students with NASSCOM viz. ICT –spread across 14 states impacting 3 lacs faculties and students
- Specialized programs in liaison with industry viz. proposed summer internship program, programs with Symantec for IT security professionals

INFOSYS WIPRO →

IT firms
- Continued professional development through technical and functional certifications such as PMP® and ITIL
- Investment in captive training centers
  Infosys spends ~INR 2.5 L per new graduate in training costs
  TCS training employees in AI and SMAC technologies

6.2 Global M&E industry best practices

Industry - academia partnerships to build strong pipeline of talent

The global M&E industry has greatly benefitted by closely partnering with academia. Apart from obtaining a large pipeline of talent, it has also ensured that upskilling of existent and potential talent stays relevant to the evolving industry needs.

Academia provides a ready pipeline of quality talent to the media industry.

Universities in the US support the demand for large pool of diverse talent in the market. The USC School of Cinematic Arts, ranked as the #1 film school in the US, alone has a student intake of 6 times higher in comparison to India's leading FTII (Film and Television Institute of India), Pune. Moreover, international film schools lay great emphasis on the gaining of cross-functional skills. The NYU's Tisch School of the Arts, for example, allows students to combine their cinematic studies with business studies at the Stern School of Business.

Additionally, strong ties with industry stalwarts enable students to interact and learn directly from practitioners. These schools also have lots of focus on investing in technology that enable students to gain hands-on experience in latest production techniques such as CGI/VFX/cinematography, thus enabling talent to be highly productive.

For India, it becomes imperative to setup more educational and training institutes in media and entertainment with world-class infrastructure. For this, in addition to government efforts, the Indian M&E industry needs to collaborate with domestic universities. This is to ensure that they not only absorb students graduating in these fields but to also train them to be job ready for the roles they are expected to work in.

Industry associations double up as platforms for discovery of new-talent and for upskilling of existent talent

Globally, initiatives are not limited to generating new talent only. Equal efforts are made in the constant polishing and upgradation of established artists. The Global Media Makers Program, developed as a collaboration between the US State Department and Film Independent, aims to expand the network of visual storytellers in the United States, through mentoring workshops, master classes and special advice on specific projects. Over the years, storytellers have been selected from different countries and have made films that have won accolades at Cannes, Rotterdam, Toronto, Dubai and numerous other international festivals. In another such effort,

New digital platforms for skill development, networking and mentoring to nurture the talent

the Writers' Guild of America conducts the Showrunner Training Program (SRTP), to train senior-level writers-producers and recent creators to become effective showrunners. Instruction from current showrunners and industry professionals has helped produce many successful results. SRTP graduates have gone on to create or co-create 94 series.

A new platform called Hiive (a new professional online network) was created by the British industry to enable users to make informed choices about the skills required to develop their careers in the M&E industry, and to help businesses to grow and remain competitive. It enables the media businesses (including BBC) to find suitable talent while at the same time helping people to take fulltime and part-time courses, accredited by industry.

Recently, Mediacorp (a group of commercial media companies in Singapore, with business interests in television and radio broadcasting, interactive media, and, to a lesser extent, print publishing and filmmaking) launched Bloomr.SG. This initiative was to nurture and empower independent creators

and give them a platform and resources to create content and brand storytelling in innovative formats, build their own communities and sustain their passion for content creation. Creators have access to mentorship and an extensive network, including Mediacorp's original IP and state-of-the-art digital resources. One of its creators, Trevmonki, will be producing social media extensions for Mediacorp Channel 8's year-end blockbuster drama series, My Friends From Afar. VizPro International, Mediacorp's events arm for regional and live entertainment, has also engaged four creators to produce social media content for the upcoming The Addams Family musical, to be staged at MES Theatre in November 2017.

In the wake of disruption in the industry, Indian M&E associations need to play a greater frontline role in upskilling the existing workforce in the industry. In addition to acting as a platform to identify talent in the existing workforce and realize their potential, the M&E associations and industry need to enable them to become more productive in the new environment.

6.3 What can sustain the double-digit growth?

700-800K job opportunities to be created over the next 5 years

Emerging and converging technologies are creating important opportunities for creative industries in the transformation of the wider economy. The Indian media story continues to be very promising. The country's subscription revenues are the lowest in the world. More importantly, from a consumer perspective, media spend is much smaller than other parts of the spend basket. As mentioned earlier in this report, India could potentially see a consumption explosion, by creating choices and reaching out to new consumer segments. Tapping the rural un-connected consumer, capturing a large share of time of the digitally connected consumer and a supply explosion for strategically segmented audiences, are the drivers that will continue to propel the media industry with double-digit growth

in the foreseeable future. To support this growth agenda, the industry will need to develop a strong pipeline of 700-800K jobs in the coming five years, in addition to re-skilling a majority of the current workforce. Bridging the skills gap is a key enabler to driving industry growth and this will be a massive exercise requiring a concerted and coordinated effort from industry, association as well as government.

In the Indian economy, the M&E sector generates nearly 4 million direct and indirect employment opportunities. However, the ever-changing and dynamic nature of the industry, coupled with rapid changes in technology, adoption and growing mediums of distribution, make talent and its availability a serious consideration for the industry.

6.4 Building a strong pipeline of talent

Media and Entertainment industry require over ~700-800k additional employees in the next five years to match their growth ambitions. Although currently in India there is very limited talent pools created or trained for the industry.

Individual sub-sectors face their own challenges. The film and TV sectors face an acute shortage of content-writers. In addition, training and upskilling of production staff continues to be a challenge due to the fragmented and primarily unorganized nature of the workforce in this value chain. The print industry has had to build out expertise in running digital news rooms and syndicate content in forms, such as video, which weren't their preserve in the past. Further, there is an imminent need for professionals trained in analytics to draw consumer insights for new content, engaging consumers and building improved monetization models. In India many sectors like TV do not even have a talent pool to pick from in the education sector,

while creative writing is another area where there is dearth of skilled professionals.

Many initiatives are required to build a strong pipeline of talent for the industry. Government can set up government aided specialized institutes for IT education to train people. Industry bodies along with the corporates can set up training centres and/or vocational training courses with targeted curriculum and certification programs, similar to ICT. In addition, companies need to broaden the talent pools they recruit from and create industry level training bodies for skilling. Individual companies may not have the scale for addressing the gaps – however aggregation at an industry level can create requisite scale. This will be similar to how the ITES industry for e.g. addressed its talent need. This will also spur the creation of smaller vocational training institutes in the country which will receive a grant if recognized by the larger M&E corporates.

6.5 Retraining the current talent pool

Large scale re-skilling of the current workforce is the need of the hour

The many trends effecting the Media industry translates to large sets of the current workforce requiring very different skills than today. Organizations are now have limitless data, employees and machines working side by side, and rapidly evolving employee value propositions.

The industry requires a strong talent-management and training-and-development program, with priorities for how to allocate resources and generate the largest payoff in terms of new skills, capabilities, and certifications. For example – creation of analytics skills in the sector – online trainings, assessments and certification based on an industry standard could create the potential to address many talent gaps. However, the industry will need to identify the creative, technological and analytical skills that are required over the next 5-7 years and build the eco system to support a large scale reskilling exercise.

The right mix of programs will need to reach the masses yet tailored to individual learning requirements. For example, an online platform could serve well for technical trainings on customer insights, data analytics etc. but different coaching may be required to address changing needs in creative writing and content creation. In addition, creative talent will need to be trained on working with deep consumer insight.

As an example, Singapore governments skills platform, allows individuals to drive their own skills agenda by providing courses and skill modules by industry, roles, etc. Needs to be replicated here. Similarly, British Media industry has set up a new platform called Hiive, a professional online network, to enable users to make informed choices about the skills required.

6.6 The talent conundrum: Rethinking HR within the organization

HR functions as the strategic partner, needs to be more agile to tackle the changing talent requirements

HR functions need to help companies meet these challenges as true strategic partners. In the current operating environment, companies must become leaner and more agile, with a greater focus on human capital than on hard assets. The efficient, flexible deployment of HR resources is a central element of a company's ability to compete, invest, and remain viable and successful. HR can be a critical differentiator in helping management teams achieve their objectives, but only if HR departments can change the way they work and adopt a more active role. (See Implementing HR excellence, BCG report, 2015)

Best-in-class HR departments can project forward and assess how the organization's business strategy will translate to specific workforce needs. In India, to match the job creation in the industry, HR practitioners will need to identify new talent pools to recruit and adapt their

recruiting processes as the competition stiffens for limited talent e.g. Creative and content roles. Many new roles discussed in Technology, analytics will see stiff competition across industries, and hence HR functions will have to be quick in redesigning recruiting proposition as well as attractive career path ways. In a time of rising skill requirement but supply constraints, HR teams need to focus on innovative and unconventional recruiting efforts.

Companies like Netflix are fundamentally revamping how HR works. When Netflix shifted from working with DVDs to online streaming, the company needed to recruit experienced employees with a working knowledge of cloud technology. The key tenants of the philosophy were focus on high performance culture, providing freedom and responsibility to its employees and moving away from control to employees understanding the context they are operating in.

7. Concluding remarks

Media industry will need 140-160K trained/employable individuals every year, for the next 5 years

The growth journey of the Indian M&E industry has been strong and expected to continue on an illustrious double-digit growth for the coming 5 years.

However, realizing this growth will need an industry ecosystem that is able to deal with major disruption in their business models. Most media companies are painfully aware of the massive shifts in content creation and consumption in their industry. The Indian M&E industry faces a unique set of challenges in the talent agenda which need to be thought-through carefully and surmounted by industry interventions. However, if done right, the industry could poise itself for a growth trajectory similar to that charted by the Indian IT/ITeS industry in the 90s and 2000s. If the talent gap is not addressed, there could be a risk in achieving the projected growth and economic impact of the sector.

The industry needs to invest in the creation of a skill-development ecosystem that supports the fast evolving need of the sector. Changes to education for the sector,

upgradation of existing skills and collaborative partnerships between industry, government and academia need to be introduced at the earliest. Talent development is the key tenant of growth and expansion of the sector and organisation in the media and entertainment sector needs to assess its HR capabilities going forward.

So how to get started? Collaboration between government, industry bodies and organisations is essential. To that end, a media advisory task force can guide programs and initiatives, ensuring that the 'local voice' is heard in planning and execution. This task force with industry and government representatives can be set up to identify and develop solutions for the key challenges faced by the industry and set itself for growth. The first agenda for the taskforce should be to explore and identify the "Skills of the future". A detailed plan for developing a strong pipeline of talent, upskilling the large exisiting workforce and embediin the soft skills required for the next wave of change are the core to the success of the industry going forward.
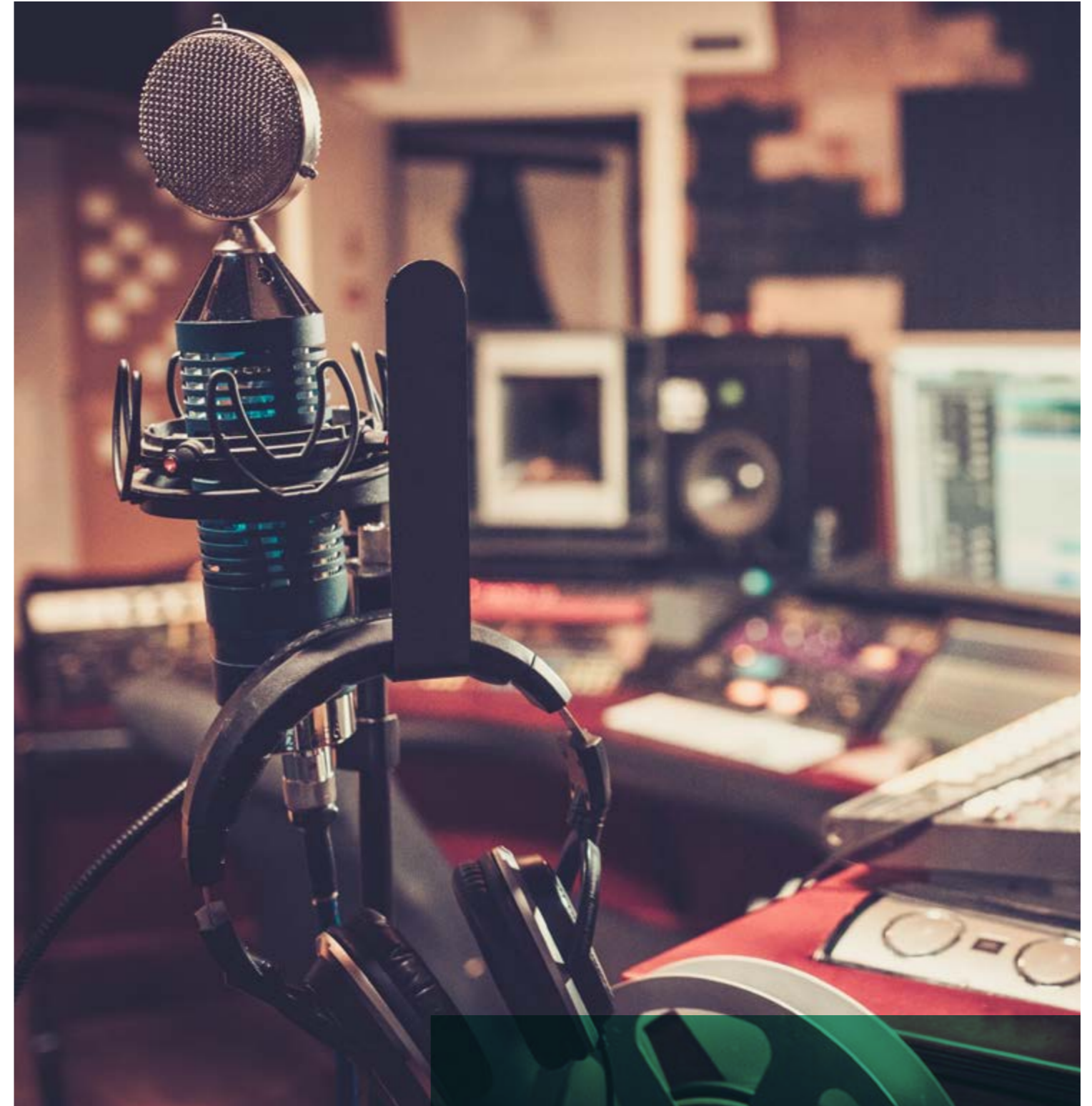
8. Appendix

This section outlines the approach towards estimating the economic impact multipliers. It is divided into 3 subsections:

- Compilation of the national Input-Output matrix
- Calculation of the Leontief matrix
- Estimation of economic impact multipliers

8.1 Compilation of the national Input-Output matrix

The national Input-Output matrix describes the inter-industry trade relationships on which the multiplier effect is based on. .

In a typical input-output matrix, industries are listed along both rows and columns in a table. Those listed across the top represent the consuming sector ('j') and those listed along the rows represent the producing sectors ('i'). In effect, output from the row sector is distributed as an input to all the sectors mentioned in the columns. This makes it a closed model.

Dependency of one sector on every other sector in two roles, as a supplier and as a customer are quantified. All the entries are made in monetary value terms. Additional columns are used to depict net exports, capital formation, private final consumption expenditure, and government final consumption expenditure

Table 1 shows a typical Input-Output matrix. India stopped publishing input-output matrices after 2007-08. Instead, the Ministry of Statistics and Program Implementation (MOSPI) publishes a table called the Supply-Use table.

The supply-use table depicts the flow of production in an economy, showing where goods and services are produced and where they are consumed. The National Council for Applied Economic Research (NCAER) has published the Indian Input-Output tables in a usable form in December 2016.

Our approach towards multiplier calculation is based on this table. The table uses data from the 2013-14 Supply Use table published by MOSPI.

The different industries covered in this table include:

Supply from i^{th} industry	Intermediate uses (Uses in j^{th} industry)			Final uses			Total Output
	Ind-1	Ind-2	Ind-n	PFCE	Other Final Use	Net Final Demand	
Ind-1	F_{11}	F_{12}	F_{1n}	C_1	G_1	Y1	X1
Ind-2	F_{21}	F_{22}	F_{2n}	C_2	G_2	Y2	X2
Ind-n	F_{11}	F_{n2}	F_{nn}	C_n	G_n	Yn	Xn
Value Added	V_1	V2	Vn				
Value of Output	X1	X2	Xn				

S.No	Commodity	S.No	Commodity
1.	Paddy	29.	Crude petroleum
2.	Wheat	30.	Iron ore
3.	Jowar	31.	Manganese ore
4.	Bajra	32.	Bauxite
5.	Maize	33.	Copper ore
6.	Gram	34.	Other metallic minerals
7.	Pulses	35.	Lime stone
8.	Sugarcane	36.	Mica
9.	Groundnut	37.	Other non metallic minerals
10.	Coconut	38.	Sugar
11.	Other oilseeds	39.	Khandsari, boora
12.	Jute	40.	Hydrogenated oil(vanaspati)
13.	Cotton	41.	Edible oils other than vanaspati
14.	Tea	42.	Tea and coffee processing
15.	Coffee	43.	Miscellaneous food products
16.	Rubber	44.	Beverages
17.	Tobacco	45.	Tobacco products
18.	Fruits	46.	Khadi, cotton textiles(handlooms)
19.	Vegetables	47.	Cotton textiles
20.	Other crops	48.	Woolen textiles
21.	Milk and milk products	49.	Silk textiles
22.	Animal services(agricultural)	50.	Art silk, synthetic fiber textiles
23.	Poultry & Eggs	51.	Jute, hemp, mesta textiles
24.	Other livestock production	52.	Carpet weaving
25.	Forestry and logging	53.	Readymade garments
26.	Fishing	54.	Miscellaneous textile products
27.	Coal and lignite	55.	Furniture and fixtures-wooden
28.	Natural gas	56.	Wood and wood products

S.No	Commodity	S.No	Commodity
57.	Paper, paper prods. & newsprint	94.	Electronic equipments(incl.TV)
58.	Printing and publishing	95.	Ships and boats
59.	Leather footwear	96.	Rail equipments
60.	Leather and leather products	97.	Motor vehicles
61.	Rubber products	98.	Motor cycles and scooters
62.	Plastic products	99.	Bicycles, cycle-rickshaw
63.	Petroleum products	100.	Petroleum products
64.	Coal tar products	101.	Other transport equipments
65.	Inorganic heavy chemicals	102.	Watches and clocks
66.	Organic heavy chemicals	103.	Medical, precision & optical instru.s
67.	Fertilizers	104.	Jems & jewelry
68.	Pesticides	105.	Aircraft & spacecraft
69.	Paints, varnishes and lacquers	106.	Miscellaneous manufacturing
70.	Drugs and medicines	107.	Construction
71.	Soaps, cosmetics & glycerin	108.	Electricity
72.	Synthetic fibers, resin	109.	Water supply
73.	Other chemicals	110.	Railway transport services
74.	Structural clay products	111.	Land tpt including via pipeline
75.	Cement	112.	Water transport
76.	Other non-metallic mineral prods.	113.	Supporting and aux. tpt activities
77.	Iron, steel and ferro alloys	114.	Storage and warehousing
78.	Iron and steel casting & forging	115.	Hotels and restaurants
79.	Iron and steel foundries	116.	Banking
80.	Non-ferrous basic metals	117.	Insurance
81.	Hand tools, hardware	118.	Ownership of dwellings
82.	Miscellaneous metal products	119.	Education and research
83.	Tractors and agri. implements	120.	Medical and health
84.	Industrial machinery(F & T)	121.	Business services
85.	Industrial machinery(others)	122.	Computer & related activities
86.	Machine tools.	123.	Legal services
87.	Other non-electrical machinery	124.	Real estate activities
88.	Electrical industrial Machinery	125.	Renting of machinery & equipment
89.	Electrical wires & cables	126.	O.com, social&personal services
90.	Batteries	127.	Other services
91.	Electrical appliances	128.	Communication
92.	Communication equipments	129.	Trade
93.	Other electrical Machinery		

8.2 Calculation of the Leontief matrix

The input-output table derived in the earlier section is then processed using the following steps to derive the Leontief matrix. The Leontief approach converts the matrix from absolute monetary terms to relative output units. This allows us to isolate the relative impact created by increasing the output of any industry.

Step 1:
Creation of 'A' matrix

The 'A' matrix is obtained by dividing each element in the 130x130 commodity matrix by the total output of each industry (Aij/Anj, where n is the row containing the total industry output).

Step 2:
Obtain (I-A)matrix

The normalized 'A' matrix is then subtracted from a 130x130 identity matrix, I (A_{ij}=1, if i=j).

Step 3:
Calculate the Leontief matrix

The Leontief matrix is defined as the inverse of the (I-A) matrix and is given by the following formula:

$$L = (I-A)^{-1}$$

The Leontief matrix can be of two types:
- Type I Leontief matrix, where the A matrix is the regular 130 x 130 normalized matrix
- Type II Leontief matrix, where the A matrix is the regular 130 x 130 normalized matrix, with an additional row and column. This makes it a 131 x 131 matrix. The additional row shows the normalized spend on wages by each industry. The additional column is the personal household consumption in each industry normalized by the net disposable household income.

These matrices help us estimate the corresponding Type I or Type II multipliers.

8.3 Estimation of economic impact multipliers

The estimation of type I and type II multipliers are similar in approach. The only difference, is the type of Leontief matrix used.

- Economic output multiplier
The economic output multiplier for each industry is estimated by summing the column corresponding to the industry. This shows the total transactions created by increasing one unit of output of the industry. This can be mathematically represented by ($\sum A_{ij}$ along constant j, where j corresponds to the industry)

- Employment multiplier
The employment multiplier is estimated using the following formula, where 'wi' represents the average number of FTEs required to increase output by 1 unit in revenue.

8.4 Approach towards work-force estimation

Strong revenue growth between 2017 and 2022 in the media and entertainment industry fast translates into job creation. Most of the new jobs are likely to be created in TV and Radio, driven primarily by growth in content creation and operations. While the productivity of an average employee increases partially due to automation and partially due to economies of scale, there is still scope for a variety of newer job roles to come into play. Case in point – data scientists, digital content creators and VR/AR developers.

Direct and indirect employment impact are estimated at a sub-sectoral level – film, TV, radio, music, animation and VFX, OOH and digital. Different jobs across these were grouped together based on the nature of work – content creation, distribution, ad sales, marketing, analytics and big data and technology. Work drivers for each sub sector was established through detailed interviews with various industry experts and primary research. For example, Film employment driven by production and exhibition staff; TV main drivers include content creation, broadcasting, distribution; Radio driven by channel employees etc.

For Further Reading

The Boston Consulting Group published other reports and articles on related topics that may be of interest to senior executives. Recent examples include:

As Media Companies Go Digital, Who's in Charge?
A report by The Boston Consulting Group, OCTOBER 10, 2017

Media Companies Must Re-imagine Their Data for a Digital World
A report by The Boston Consulting Group, SEPTEMBER 7, 2017

Transforming Media Core Technology to Meet Digital Demands
A report by The Boston Consulting Group, SEPTEMBER 6, 2016

The Future of Television: Where the US Industry Is Heading
A report by The Boston Consulting Group, JUNE 9, 2016

The New News on Print Media Transformation
An article by The Boston Consulting Group, June 2016

How Telcos Can Become Video's Next Big Star
A report by The Boston Consulting Group, JUNE 3, 2016

The Future of Television: The Impact of OTT on Video Production Around the World
A report by The Boston Consulting Group, SEPTEMBER 20, 2016

The Digital Revolution Is Disrupting the TV Industry
A report by The Boston Consulting Group, MARCH 21, 2016

The Talent Revolution in Digital Marketing
A focus by The Boston Consulting Group, September 2015

Digital India - Insights for Marketers and Media Companies
A report by The Boston Consulting Group, April 2015

Note to the Reader

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