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THE FUTURE OF VIDEO

Cass Business School
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IN ASSOCIATION WITH imagen

The Future of Video

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EXECUTIVE SUMMARY

A range of technological innovations (e.g. smart phones and digital cameras), infrastructural advances (e.g. broadband and 3G/4G wireless networks) and platform developments (e.g. YouTube, Facebook, Snapchat, Instagram, Amazon, and Netflix) are collectively transforming the way video is produced, distributed, consumed, archived – and importantly, monetised. Changes have been observed well beyond the mainstream TV and film industries, and these changes are increasingly reflected in the way businesses communicate internally with employees and externally with customers and partners, and the way we communicate with one another both at work and in our daily lives. In September 2015, Facebook CEO and Founder Mark Zuckerberg claimed that he expected our society to enter 'the golden age of video' in the next 5 years[1]. Video has become a cornerstone of Facebook's business strategy.

The implications are profound. The rapid development of video is leading to a fundamental shift not only in business and the economy, but also in our culture and society. Further advances in affordable virtual reality (VR) and augmented reality (AR) may transform the way we interact and share experiences with one another. Internet guru Clay Shirky argued, '[w]hen we change the way we communicate, we change society.' As video transforms the way we communicate, we are less constrained from established rules about communication, relationships, and the way we do business with each other. Organisations need to extend their focus from using video for marketing and staff training to redesigning their operations and business processes, which will help lower costs, foster collaboration, reduce environmental impact and create competitive advantages.

This report focuses on the business use of video, in the context of wider economic, social and cultural changes in the digital age. The emerging opportunities and risks call for a holistic, strategic approach to the management of video in organisations, rather than being left to technologists or to the users on an ad hoc basis. Those who manage the transition effectively will reap the rewards and avoid potential pitfalls; those that do not will risk being left behind.

[1] Four Highlights from Facebook CEO Mark Zuckerberg's Q&A. http://www.forbes.com/sites/kathleenchaykowski/2015/09/15/four-highlights-from-facebook-ceo-mark-zuckerbergs-qa/#15d05b0f207c2513cd08207c

KEY FINDINGS

.01

Video is not simply an important part of the online experience. Increasingly, video is the internet. Within the next few years the overwhelming majority of internet traffic will be video. According to Cisco forecasts, global consumer internet video traffic will make up 80% of all consumer internet traffic by 2019, up from 64% in 2014.

.02

Until recently, video was expensive and required specialised, professional skills to produce and distribute. While high quality professional video remains expensive, the lowering of technological, financial and skill barriers for billions of people has resulted in the explosive growth of video in recent years.

.03

On-demand video via digital networks to multiple screens has been growing rapidly, but the demise of traditional linear programmed TV predicted by numerous commentators has not happened, and it is unlikely to happen anytime soon. Linear TV still makes up 80-90% of all viewings in major markets around the world. The total cost of delivering all video content to users via the on-demand model is still too high and is not yet economically viable.

.04

As video production and distribution become increasingly cheap and easy, the focus for video creators is extending from profit, utility or fame (which will remain important) to new forms of communication and socialising.

.05

Smartphone is the No.1 device to reach the millennials. Marketers are increasingly treating mobile phones not just as a second screen, but a new screen that is as important as the TV. For marketers, TV continues to deliver unparalleled reach, but online video delivers depth and measurable impacts that cannot be matched by traditional TV.

.06

The most anticipated change in the direction of video is likely to come from the mass adoption of virtual reality (VR) and augmented reality (AR). Citi analysts forecast the total market for AR and VR will be around $674 billion by 2025. This may fundamentally transform the way that operations and business processes are designed and managed, and how we interact and share experiences with one another.

7

.07

Video is the most data-intensive and difficult to manage digital asset. As business use of video continues to grow rapidly both for marketing and operations, managing video assets effectively will become a complex task for a growing number of organisations. A well-considered video policy is essential in ensuring video content is stored and preserved for effective use both now and in the future.

.08

The vast majority of websites featuring videos are using third party solutions rather than self-hosting, with YouTube being the most popular for embedded videos, and Vimeo dominating paid third party solutions.

.09

We are entering the age of social video, when we do not merely consume and enjoy the content of video, but also use video as a tool for discussion and as a way to interact with the creators and with each other in communities.

.10

Video can simply be about entertainment or utility, but with the growing social and participative nature of video, it is critical that it also resonates with communities to encourage participation and conversation. When a creator or brand can rally a community around a video, they can amplify the reach and impact of the video significantly.

.11

The rapid development of video is predominantly driven by consumers but supported by businesses. As people increasingly bring their expectations from the consumer market into the workplace, they demand support to make video, view video content and use video communication anywhere, anytime, on any device. This puts new demand on corporate IT infrastructure.

.12

Video is not only widely used in marketing, but also is becoming a key requirement for effective collaboration across cultural and geographical boundaries. The power of video is increasingly recognised by business leaders as an effective means to transform operations and business processes to create competitive advantage, and reduce travel, costs and environmental impacts.

.13

The changing directions of video bring new challenges for businesses. Examples include ensuring appropriate use of video by employees both within and beyond the workplace (including video etiquette); harnessing user-generated content; and managing issues associated with security, privacy, confidentiality and truth; the effective management of legal rights of relevant materials; and satisfying new demand for corporate IT infrastructure to support video effectively. These, and many other challenges, call for the development of holistic video strategies in organisations.

.14

User-generated video was mostly considered a cultural phenomenon. However, the same level of attention has been lacking in developing a systematic understanding of the operational use of video by business, and in particular, video based operations and new business processes in different sectors of the economy.

.15

Organisations should move away from the ad hoc use and management of video and develop comprehensive video strategies in order to benefit from the new opportunities and avoid potential risks. Organisations need to recognise how people produce and use video, what they use video for, who these users are, how they communicate, what they are likely to do next, and importantly, how products, services and brands can be integrated into video, video communication and video-based communities effectively.

INTRODUCTION

This report discusses how businesses use video now and in the future, examines factors which facilitate and hinder such use, and explores the opportunities and challenges involved. The obvious places to start when looking at the business use of video are in marketing and staff training, but increasingly, a growing range of operational uses of video have been developed across different sectors and business functions. For example, video conferencing is popular for reducing cost and time spent convening and travelling to meetings. Video is increasingly used to support the selection and recruitment of new staff. In many organisations, video is an integral part of security and surveillance. Most of all, video is increasingly deployed to underpin and redesign operations and business processes in different industries.

The increasing use of video in business – and in our daily lives beyond work – also brings new challenges and requirements. How should an organisation produce and distribute videos to maximise impact? How are these videos stored and how do organisations protect their videos from being modified and used inappropriately? How are privacy and intellectual property rights managed systematically? How should an organisation renew its corporate IT infrastructure to manage security risks and support the use of video both internally and externally? These and many other issues need to be carefully thought through and effectively addressed, not only by the IT and marketing departments, but also by business leaders in the C-Suite.

The transformation of video is both extensive and radical. Significant changes have been observed in the way that video is produced, distributed, consumed and archived. The key characteristics of video, and where, how, when, by whom and for what purpose that video is used are also changing. In the next few years, the development of immersive videos using virtual reality (VR) and augmented reality (AR), combined with ubiquitous connectivity, interactivity and personalisation, may fundamentally transform the way operations and business processes are designed and managed, and how we interact and share experiences with one another in the office, on the road or at home.

Such developments will undoubtedly create new opportunities and challenges for businesses. Organisations large and small need to move away from the ad hoc use and management of video, and develop comprehensive video strategies in order to benefit from new opportunities and avoid potential pitfalls. The pace of change is accelerating, and there will be clear winners and losers.

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THE DIGITAL TRANSFORMATION OF VIDEO

A range of technological innovations, combined with rapid developments of new platforms, products and services, are disrupting the digital media landscape. Significant changes have been observed in the way video is produced, distributed, consumed and archived. These changes have a profound impact on the way we record, share, communicate and make sense of the world around us.

Today, video is not simply an important part of the online experience. Increasingly, video is the internet. Within the next few years the overwhelming majority of internet traffic will be video. According to Cisco[2], globally, consumer internet video traffic will make up 80% of all consumer internet traffic by 2019, up from 64% in 2014. This percentage does not include videos exchanged through peer-to-peer (P2P) file sharing. The sum of all forms of video [including TV, video on demand (VoD), Internet, and P2P] will be 80-90% of global consumer traffic, which means that every second, nearly one million minutes of video content will be shared across the network by 2019.

GLOBAL CONSUMER INTERNET VIDEO TRAFFIC WILL MAKE UP

90%

OF ALL CONSUMER INTERNET TRAFFIC

1m

MINUTES OF VIDEO CONTENT WILL BE SHARED EVERY SECOND ACROSS THE NETWORK BY 2019.

A particularly significant trend is the explosive growth of social video – a trend that is projected to accelerate further in the next few years. Video viewing on Facebook grew very rapidly from 4 billion views per day in April 2015 to 8 billion per day in November 2015, the equivalent of over 500 million daily users.[3] On Snapchat, video viewing exceeded 6 billion per day by November 2015, tripling the daily viewing figure recorded in May 2015.[4] YouTube has over one billion users, which is about one third of the global internet population; and each day, people watch hundreds of millions of hours of video, making it the second most popular search engine in its own right, surpassed only by its big brother Google. More importantly, the emergence of new ways of creating and consuming video, whether YouTube's 360 Player or the forthcoming release of virtual reality kit Oculus Rift by Facebook in early 2016, will promise a world of video that is more immersive and engaging, opening up new possibilities for business applications aimed at delivering unique user experiences.

As online video quickly becomes a key means for people to satisfy their information, entertainment and social needs in the digital age, businesses that fail to develop a coherent video strategy and incorporate video in their marketing and operations will do so at their own peril. The digital transformation of video production, distribution, consumption and archiving is enabling the effective exploitation of video on multiple devices and via different channels (particularly mobile), which may mark the beginning of the long awaited arrival of 'social business', where video-dominated social media will fundamentally transform workplace communication across business functions, organisational boundaries, geographies and cultures.

[2] Cisco Visual Networking Index: Forecast and Methodology. http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf
[3] Facebook Hits 8B Video Views Per Day, Wants To Be Best Site to Watch and Share Video. http://www.reelseo.com/facebook-8-billion-video-views/#ixzz3xtwNaNQw
[4] Snapchat Reaches 6 Billion Daily Videos Views, Tripling From 2 Billion In May. http://techcrunch.com/2015/11/09/snapchat-reaches-6-billion-daily-videos-views-tripling-from-2-billion-in-may/

12

PRODUCTION

The digital transformation of video production is facilitated by a series of incremental technological and business innovations, which are collectively leading to radical changes. While high quality professional video production remains expensive and time consuming, the lowering of technological, financial and skill barriers for video production to virtually nothing for billions of people has resulted in the explosive growth of video production in recent years. These are often in new formats (e.g. very short video clips or 24/7 continuous live streaming) and in new areas (e.g. showing someone playing a video game) that are distinct from traditional professional video production.

In particular, the mass adoption of smartphones with built in cameras, as well as other affordable digital cameras and video capturing devices, has significantly reduced the cost of video production. Rapid developments in animation and software (including automation software) for video editing, rendering and storyboarding have

served to eliminate the technological and skill barriers for video production. The growing range of free or affordable multimedia authoring tools for special effects, editing and visual content creation accessible online mean that anyone interested in producing video can do so with ease, in ways that were previously

The mass adoption of smartphones with built in cameras, as well as other affordable digital cameras and video capturing devices, has significantly reduced the cost of video production.

the preserve of highly skilled professionals with expensive equipment and ample resources.

Until recently, video was expensive and required specialised, professional skills to produce. Video production was, understandably, dominated by skilled professionals with expensive equipment. The focus of video production was on profitable, important or high-stake areas, primarily activities that were considered 'worthwhile', such as TV programmes, movies and instructional videos. When digital cameras became much cheaper and more widely available to the public, the technological, financial and skill barriers for video production became virtually non-existent, so people began to produce videos in large quantities that would previously be considered wasteful, meaningless or even silly, often in new areas, new domains and in new formats. The 'democratisation' of video production – as it has often been described – enabled a series of profound changes, from mass public witnessing to hyper personalisation, and from live streaming to automatic video capture and editing (these will be discussed later). These new phenomena are supported by real-time and archived, interactive, non-linear, multi-narrative videos that are distributed to special interest groups or the public instantly. For example, a private conversation or a live event taking place anytime anywhere in the world can be easily, and secretly, captured by multiple cameras and live-streamed online, instantly viewed by millions of people, and permanently archived on the internet for future viewing and analysis. The consequences – and implications – are very profound.

Such developments are leading to the transformation of a growing range of industries, such as the huge impact of amateur video and citizen journalism on professional TV news reporting and on emergency and disaster relief interventions. Video is also facilitating the development of new business processes across different industries. For example, the insurance industry increasingly uses video evidence from dashboard cams by drivers, helmet cams by cyclists, CCTV footage from public and private sources, and digital cameras used by their own field staff to handle claims after accidents. In the music industry, pop star Justin Bieber was only discovered after posting homemade videos on YouTube from the age of 12. He amassed millions of online followers before the release of his highly successful first album on 17th November 2009. Historical video archives can be remixed with new materials to create new video products. In the 2015 Christmas Special on BBC, singer Michael Buble seamlessly re-mixed his own version of *White Christmas* with footage of the legendary Bing Crosby as if they were singing a duet together on live TV. The possibilities are truly endless.

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DISTRIBUTION

The transformation of video distribution is equally significant. We have witnessed rapid growth of on-demand video via digital networks to multiple screens (TVs as well as tablets and mobile phones), although the predicted demise of traditional linear programmed TV is likely to take a long time to materialise. The transformation of video distribution is facilitated by three developments: the near ubiquitous broadband and 3G/4G mobile networks, the mass ownership of smartphones and tablets as well as personal computers, and the rapid growth of platform firms (from YouTube and Facebook, Netflix and Amazon, to Snapchat, Instagram, Vine, Meerkat, Twitch and Periscope, to name a few). These developments have largely eliminated the technological, financial and skill barriers for the distribution of video: anyone with a digital camera can easily share the videos they produce with family, friends and the general public using multiple viewing devices.

However, to understand the future of video distribution, it is necessary to examine the video distribution value chain and the business models of the key players involved.

Understanding who will manage the video collections, how consumers will view and reuse video, and what competing technologies will survive in the future is critical. Today, video distribution is paid for by operators, broadcasters or platform firms that produce or aggregate content. Revenues for these players are generated either directly from consumers or indirectly through advertising.

Videos are primarily distributed through two different models: the linear, broadcast model, where the content is distributed centrally from the broadcaster to multiple viewers at a scheduled time (e.g. BBC or CNN); or the non-linear, unicast model, which includes both time-shifted viewing (e.g. BBC iPlayer or timeshift DVR), and on-demand viewing (e.g. Netflix or YouTube), where each viewer makes a unique request for the video to be delivered individually. Despite all the hype, the creation of non-linear, multi-device services has not yet had a fundamental impact on typical viewing habits – linear TV still makes up the vast proportion of viewing even in the major developed markets such as the USA and the UK. Defensive measures taken by incumbents also served to slow down the

transition. For example, cable operators in the USA and Germany increasingly bundle TV with broadband and phone services (triple play or quadruple play). However, the rapid growth of non-linear, unicast video distribution is facilitating the emergence of new business models that underpin video distribution.

Today, total demand for unicast delivery could account for up to 50% of current viewing, but current supply could only cost-effectively provide 15-20% of total viewing.

Although non-linear viewing is rising rapidly, linear TV still makes up 80-90% of all viewing in the major markets around the world. According to IHS Technology Principal Analyst Ed Border, it is simply not possible within the medium-term timeframe for unicast, point-to-point delivery to match total consumer demand for video.[5] The total cost of delivering all content uniquely to users would be *'orders of magnitude above the current cost of all video distribution'*, and the additional revenues from multiscreen simply cannot cover it. In other words, scaling unicast to meet total video demand is not yet economically viable, and it will take at least 20-25 years even in developed markets.

Today, total demand for unicast delivery could account for up to 50% of current viewing, but current supply could only cost-effectively provide 15-20% of total viewing.

Nevertheless, in the mainstream TV and film industries, we have witnessed rapid growth of Netflix and Amazon Prime, as people start to shift their viewing from cable, satellite and terrestrial TV to internet video on multiple devices. The growth of YouTube and other user-generated video platforms are fuelled almost entirely by on-demand viewing. For advertisers, the broad reach of traditional TV remains unchallenged, but internet video enables unprecedented targeting and personalisation with accurate measurement. Organisations increasingly combine different channels to maximise impact both in terms of reach and targeting in their advertising campaigns.

Although traditional TV and films are also increasingly distributed to multiple devices via different channels, the explosive growth of video content in recent years is predominantly led by amateurs, often in mundane areas, such as live-streaming of someone playing video games on Twitch, explaining how to bake a cake on YouTube, or sharing moments or events captured on video with friends and family on Facebook, Twitter, Snapchat or Instagram. As video production and distribution become increasingly cheap and easy, the focus for video creators is also extending from profit, utility or fame (which will remain important) to new forms of communication and socialising. While a small minority of people can attract large followers and become online celebrities with fame and profit that would resemble those in traditional TV and films, the majority of people are only sharing videos with a very small number of people for social and entertainment purposes. However, as a new form of communication, the rapid development of video is facilitating the emergence of new cultures that will have profound implications for businesses and consumers.

[5] The future of video distribution. https://www.ihs.com/Info/0215/the-future-of-video-distribution.html

CONSUMPTION

Alongside the technological push, the digital transformation of video production and distribution is also fuelled by the rapidly growing video consumption by the public on multiple devices/screens via different channels. The volume of video consumption has been growing at unprecedented speed. In addition to traditional TVs and desktop computers, the proliferation of smartphones and tablet computers has freed people from the confinement of their homes and offices. People are increasingly able to consume videos anywhere anytime, even using multiple screens concurrently. For example, when watching TV in the living room, people increasingly also use their smartphones and tablet/laptop computers at the same time to find relevant information or communicate with other people via messaging and social networking platforms. A growing proportion

of people use digital channels (e.g. via BBC iPlayer) or other time-shifting equipment and services (e.g. home or Cloud based DVR) to watch traditional programmes on TV when it suits them. Although the consumption of traditional programmed linear TV will not be replaced by non-linear, on demand TV anytime soon, the growth of subscription-based services (such as HBO, Netflix and Amazon Prime) has been significant.

The increasing consumption of video on YouTube and various social networking platforms (e.g. Facebook, Twitter and Instagram) demonstrated that online video has become a favourite way for people - particularly of the younger generation - to learn, connect and be entertained.

The most exciting growth of video consumption is in the area of user-generated content. The increasing consumption of video on YouTube and various social networking platforms (e.g. Facebook, Twitter and Instagram) demonstrates that online video has become a favourite way for people - particularly of the younger generation - to learn, connect and be entertained.

Different from linear, programmed TV, more and more people turn to online video for entertainment and information in moments that matter to them. As different communities emerge around video, the nature of video consumption is becoming increasingly social and participatory, in groups and communities of different sizes built around video sharing and communication.

As video becomes more interactive, consumption is also becoming increasingly personalised, enabling a range of new commercial opportunities to be exploited. For example, popular performances at the Royal Albert Hall in London are live-streamed to cinemas around the UK. Today, more and more events and performances are live-streamed to viewers via the internet, which can be viewed on multiple devices. Increasingly, the viewer can choose from different camera angles or switch between multiple cameras in live events and concerts. Some firms are leveraging crowd-sourced videos of events and offering ways to bring them together in an edited version. For example, videos taken at live events (such as a concert) by mobile phones can be combined to create unique personalised experiences for viewers. Recently, YouTube released a new tool for creating interactive, multi-angle videos, which allows a user to upload multiple camera angles for a video along with the audio track. YouTube will then automatically combine the camera feeds together so that viewers can switch between the different cameras while watching.

For advertisers, TV continues to deliver unparalleled reach even though it is difficult to measure impact accurately, but online video delivers depth and measurable impacts that cannot be matched by traditional TV. This calls for a holistic strategy to align advertising budgets for TV and digital video on the Internet and on mobile devices. Today, advertising agencies around the world emphasise the importance of coordinated, multi-platform, multi-channel campaigns, as these are increasingly demanded by clients.

ARCHIVING AND COLLECTION MANAGEMENT

Video is the most data-intensive and difficult to manage digital asset. As business use of video continues to grow rapidly both for marketing and operations, managing video assets effectively will become a complex task for a growing number of organisations. This includes storage, indexing, creation of metadata for search, editing and reuse, all of which put significant pressure on the corporate IT infrastructure. Fortunately, a growing range of software and third party services are available to suit the needs and circumstances of the organisation.

In many organisations, video assets are simply stored and catalogued as part of the digital asset management system supported by their corporate IT infrastructure. However, as the volume and variety of video assets grow, general purpose digital asset management systems can be overwhelmed due to limited capacity and processing power, and inadequate functionality for handling video specific features. For organisations specialising in digital media production (such as films, TV and digital games), specialist software is often needed to manage video production workflow, and ensure files that are frequently revised are catalogued, indexed and stored for efficient search and retrieval. In most organisations, however, the need is to archive video files securely for long-term preservation, to enable efficient search and easy access, and to support interactive functionality such as tagging, messaging and the ability to share content through third party channels.

Depending on the needs of the organisation (particularly to support scalability and flexibility), storage can be managed through a combination of local drives and the Cloud. For many organisations, a well-considered storage policy is essential to ensure video content is available now and in the future. In addition to saving multiple copies of video files in multiple storage devices, the use of offsite storage on the Cloud offers additional backup in case of drive failure or disaster (e.g. a fire or flood).

The vast majority of websites featuring videos are using third party solutions rather than self-hosting (79% according to Crayton State of Video Report 2015[6]), with YouTube being

the most popular for embedded videos, and Vimeo dominating paid third party solutions. Using YouTube may be an inexpensive option for video storage and a central access hub. It also offers free text searching. However, for business purposes YouTube is not a safe place for video assets. It is not suitable for commercially sensitive files, or videos aimed for internal use in the organisation. In addition, YouTube will not store high resolution original files. When a video is uploaded onto YouTube, it creates a low resolution proxy and discards the original file, which may affect future reuse of the videos.

79%

OF WEBSITES ARE USING THIRD PARTY SOLUTIONS RATHER THAN SELF-HOSTING

YOUTUBE
THE MOST POPULAR FOR EMBEDDED VIDEOS

VIMEO
THE MOST POPULAR PAID THIRD PARTY SOLUTIONS.

Implication.

The implications of the digital transformation of video production, distribution, consumption and archiving go well beyond the emergence of new commercial opportunities and challenges for platform firms or advertisers. In our increasingly networked world, technological advances in camera technology and accessibility, development of new infrastructure and platforms for distribution and editing, and the creation of new communities around video, are collectively transforming the way we experience products, services, arts and culture. The lowering of technological, financial and skill barriers are empowering billions of people around the world to become video makers, consumers, critics and re-mixers.

The digital transformation of video is contributing to the emergence of new cultures and new conventions developed around global, regional and local conversations supported by video communications. In particular, ubiquitous and accessible video capture, distribution and consumption technologies are empowering people to participate in these global conversations. By changing the way we communicate, video is changing the way we relate to and do business with each other. More fundamentally, it is contributing to a power shift: it is no longer the producers and senders who are in charge. We are all becoming video makers, producers, consumers, critics and re-mixers of the world around us. We can determine which network to join, who we communicate with, and what to receive and share. Today, broadband and mobile networks have become increasingly ubiquitous. With further advances in camera technology and network accessibility, new developments in platforms for distribution and editing, new communities built around video will emerge, which will bring new ways for us to experience the world through video. The development of VR and AR may further transform the way we interact and share experiences with one another. Video is making our society more connected than ever before, with profound social, political and economic implications for all.

[6] https://www.crayon.co/success/state-of-video-report/

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THE CHANGING DIRECTIONS OF VIDEO

THE FULL REVOLUTIONARY POTENTIAL OF VIDEO HAS BEEN SLOW TO MATERIALISE, BUT THE PACE OF CHANGE IS ACCELERATING.

The digital transformation of video is changing our assumptions about the nature of video, how it is made, what it is for, where it is shown and how it is used. These changes are reflected in a series of emerging trends that will collectively reshape our economy and culture. Today, video production is increasingly democratised and decentralised. Video distribution is changing, albeit slowly, from the linear multicast model to a combination of different models, including the rapidly growing on-demand unicast model via multiple channels. Video consumption is becoming ubiquitous, mobile, social and collaborative. Video collections are increasingly indexed, searchable and interactive, hosted on the Cloud and accessible via the internet. The boundaries are blurring between producers and viewers, and between professionals and amateurs. The full revolutionary potential of video has been slow to materialise, but the pace of change is accelerating. For over half a century, commentators and scholars have been predicting the future of video and its profound social and cultural impact, but only some of them have fully materialised even though they are all technologically possible.

To understand the opportunities and challenges from these and many other emerging changes in video, organisations need to recognise how people produce and use video, what they use video for, who these users are, how they communicate, what they will do next, and importantly, how products, services and brands can be effectively integrated into video, video communication and video-based communities. Business leaders increasingly need to incorporate video communication as an essential part of their media skill; and review their assumptions about the nature of video, how it is made, where it is shown and how and where it can be used productively and effectively.

NON-LINEAR AND ON-DEMAND, BUT LINEAR BROADCAST WILL CONTINUE TO DOMINATE FOR DECADES

Much of the excitement around video is linked to the meteoric rise of YouTube through user generated content, and more recently, the growing competition from a plethora of social networking platform firms that are refocusing their strategies on video. The rapid growth of Netflix, Amazon Prime and other on-demand services and various time-shifted applications (such as BBC iPlayer or DVR time-shifted viewing) have further fuelled the speculation about the demise of the linear, programmed TV. Consumer expectations continue to grow rapidly, including higher resolutions, in-home storage, multiple devices and anywhere anytime viewing, which will facilitate the continued rise of non-linear, on-demand consumption of video.

Despite all the excitement around on-demand video, however, it is linear programmed TV that is still dominating all major developed markets (including the USA and the UK), making up

80-90% of all viewing. This pattern is unlikely to change fundamentally in the foreseeable future, simply because the economics underpinning video distribution could not support such a shift yet. The total cost of delivering all video consumptions through the unicast, on-demand model is prohibitively expensive in comparison to the current cost of all video distribution. Any additional revenues that can be generated from multiscreen, on-demand viewing simply cannot cover it. According to IHS Technology Principal Analyst Ed Border, the dominance of the traditional multi-cast model of linear TV could continue for at least another 20-25 years.[7]

The number of connected devices is projected to grow from 4.5 billion in 2015 to 9.6 billion globally by 2018.

Although the creation of non-linear, multi-device, on-demand services has not led to the demise of linear TV, it is having a significant impact on how video is created, distributed, consumed, archived, and monetised. In particular, by supporting the emergence of new business models underpinning video distribution, on-demand video opens up new opportunities for personalised marketing and e-commerce. As the number of connected devices is projected to grow from 4.5 billion in 2015 to 9.6 billion globally by 2018[8] - with mobile phones and tablets making up the bulk of new devices- non-linear, on-demand, unicast distribution of video is projected to continue to rise rapidly, creating significant new business opportunities for different stakeholders.

Alongside professional content based on pay-per-view or advertising, the most significant growth in on-demand, unicast viewing is in short, free, amateur videos, which do not function as an evening's entertainment like cinema or TV, but often as a momentary diversion in the context of another activity. Such short videos are also a main source of knowledge and information for a growing number of viewers, and YouTube has already become the second most popular search engine behind Google, making it one of the most important knowledge reference platforms in the world.

In addition to economic constraints on video distribution, another important factor limiting the transition is that on-demand services (such as Netflix or BBC iPlayer) are great for delivering popular shows that the audiences know they want to watch, but they struggle to replicate the spontaneity of programmed or live TV, which are curated and arranged by highly trained experts. Although on-demand, personalised viewing will continue to rise, people often cannot be bothered to curate their own content. This is particularly the case for non-millennials, because programmed TV is an integral part of their lifestyles and daily routines. Old habits die hard, and this will serve to slow down the transition from linear programmed TV to on-demand video consumption in the short to medium terms.

[7] The future of video distribution. https://www.ihs.com/Info/0215/the-future-of-video-distribution.html
[8] Cisco Visual Networking Index: Forecast and Methodology, 2014-2019. http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf

SOCIAL AND PARTICIPATIVE: 'WHEN MEDIA CHANGE, HUMAN RELATIONSHIPS CHANGE'

The lowering of financial, technical and skill barriers for video production, distribution and consumption means that billions of people around the world today have the ability and means to make a video anywhere anytime, upload it online for the world to see, or live-stream it to their friends, family and the public, through social networking and other video platform sites. In our hyper-connected society, video's inherent shareability makes it a key means to satisfy people's needs for information and entertainment.

Much of the user created videos, particularly those shared on social networking sites, are primarily share-worthy, news-worthy contents that are fun, interesting or useful. It has been suggested that the majority of user created videos are about social belonging, identity, participation in community, pleasure and having fun together. The mass participation in video production, distribution and consumption releases enormous creativity which fuels continued social participation. Although other forms of media (such as text, sound or image) are not going away, video has become a more important medium for communication.

As anthropologist Michael Wesch put it, '*When media change, human relationships change*'. Video is facilitating profound changes in social interaction and mass participation in our increasingly networked society.

Today, we are entering the age of social video, when we do not only consume and enjoy the content of video, but also use video as a tool for discussion and a way to interact with the creators of videos and with each other. The right balance between content

In our hyper-connected society, video's inherent shareability makes it a key means to satisfy people's needs for information and entertainment.

and community is essential for success, because great video content helps attract and sustain an engaged community, which in turn encourages the creation of more great content and facilitates its distribution both within and beyond the community.

One example of building a successful community around video is GoPro, the maker of one of the most versatile cameras in the world. Using the best videos created with GoPro equipment on its distribution channels, the company has inspired a legion of passionate fans to film and tag their greatest moments, and share these videos with others. This helps create brand awareness and strengthen the identity of GoPro as a great maker of cameras. Some of these videos have gone viral, generating millions of viewings around the world.

One lesson from the example is that video can be just about entertainment, but with the growing social and participative nature of video, it is critical that it also contains an element of conversation and participation in communities. When a creator or brand can rally a community around a video, they can amplify the reach of the video far more than the video could have done on its own. This is particularly the case in experience goods and services (e.g. iconic sport cars or video games) when communities of passionate fans can share experiences and participate in conversations through videos. However, harnessing the creative energy of loyal fans requires resources, commitment and reward from the firm to ensure the conversations are aligned with the brand.

MOBILE AND UBIQUITOUS

The central theme of the Internet Society Global Internet Report 2015[9] was about the mobile internet, which highlighted the huge benefit for users from the combination of smart devices and full mobility. According to Cisco forecasts, mobile data traffic will increase tenfold between 2014 and 2019, which is three times faster than fixed IP traffic.[10] Globally, the number of smartphones alone has exceeded two billion, not counting other digital cameras. With billions of mobile devices with video capture, uploading/streaming and viewing capabilities in the hands of ordinary people, video production, distribution and consumption have become increasingly mobile and ubiquitous. Anything which happens anywhere anytime can be captured and shared globally and instantly though mobile uploading or live streaming. The consumption of video, particularly short clips via social networks, has also been unshackled from the confinement of TV and desktop computers in the living room or office, to mobile devices that are linked to 3G/4G data networks and public wifi.

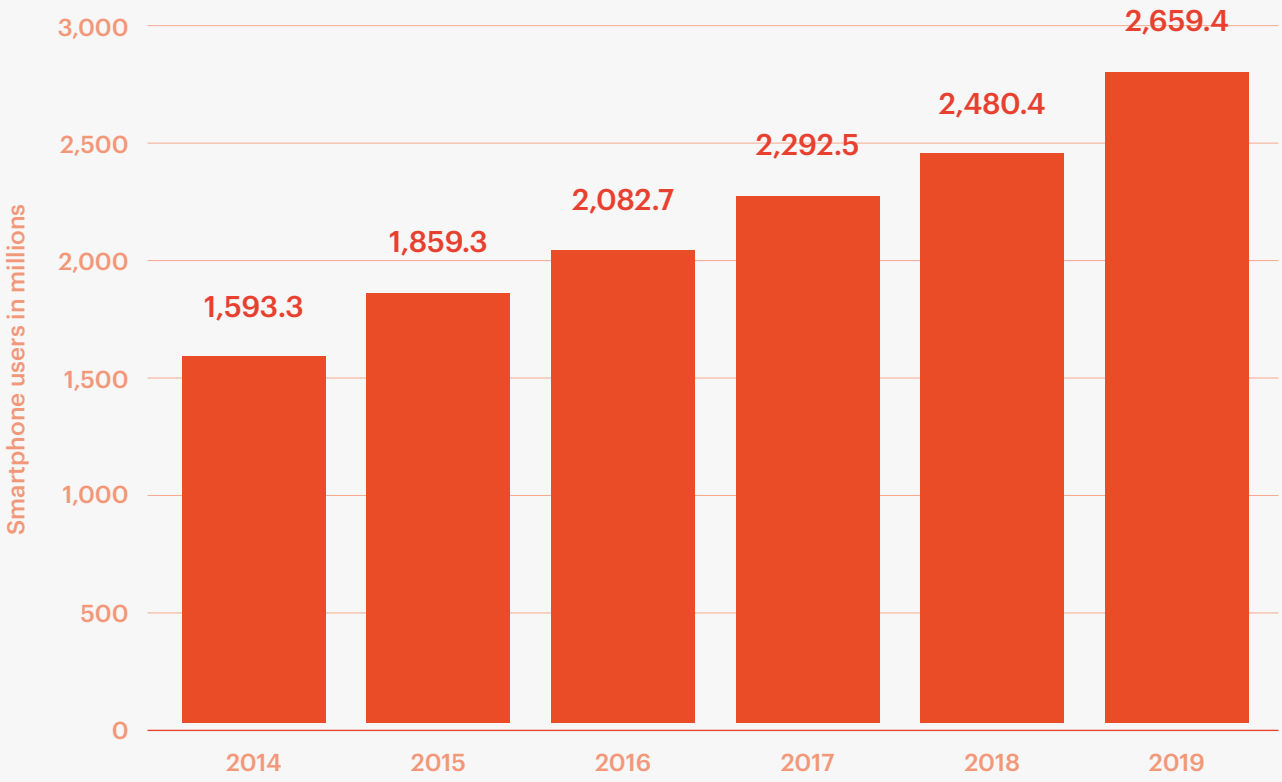
This trend is projected to continue by nearly all commentators. In fact, the increasing use of open-source software, interoperable platforms and non-proprietary tools will allow content to flow freely across devices and channels, making video production and consumption truly ubiquitous in the near future.

Today, everyone is a video producer and consumer, and the boundary between them is increasingly blurred. To be successful, organisations must understand how people use video, what they use it for and how their products and services can be integrated into

such conversations and engagements. As video production and consumption become increasingly mobile and ubiquitous, the video strategy in organisations needs to ensure that mobile related issues are fully accommodated and adequately addressed.

It should also be noted that the smartphone is the No.1 device to reach the millennials. A survey by Google and Ipsos in 2014 found that in a typical day, 98% of 18-34 year olds reported using their smartphones to watch video.[11] Importantly, watching video on a mobile phone was the sole activity for 53% of them, compared to only 28% when watching TV as their sole activity. Marketers are increasingly treating mobile phones not just as a second screen, but a new screen that is as important as the TV.

Number of smartphone users* worldwide from 2014 to 2019
(in millions)



Source: http://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide

[9] http://www.internetsociety.org/globalinternetreport/assets/download/IS_web.pdf
[10] Cisco Visual Networking Index: Forecast and Methodology, 2014-2019. http://www.cisco.com/c/en/us/solutions/collateral/service-provider/ip-ngn-ip-next-generation-network/white_paper_c11-481360.pdf
[11] How Mobile Video Can Drive the Future of Brand Marketing. https://www.thinkwithgoogle.com/articles/youtube-insights-stats-data-trends-vol6.html

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INTERACTIVE AND PERSONALISED, BUT SLOW PROGRESS

The blurring boundaries between video producers and consumers, and between professionals and amateurs, combined with the ubiquity of digital cameras, networks, and video editing, uploading and streaming software and services, are creating opportunities to turn video into interactive and personalised experiences, although progress has been much slower than expected.

For over 10 years, new start-ups have developed and launched services that promised to allow producers to make their content interactive by enabling their viewers to click on objects in the video to connect to related articles, videos and real-time data. They can also include questions to collect audience feedback. In fact, technologically, it is relatively easy to recognise a specific object in a video, tag it and track it through the video regardless where it appears. As a recognised object, the technology can then make it clickable like a link in a webpage, allowing the users to learn more about it or even make a purchase through e-Commerce. However, despite being technologically feasible, such a scenario has so far failed to materialise. Today, much of the consumption of online video is very similar to watching TV via the internet. Even live streaming is rather limited compared with the consumption of recorded videos.

In professional TV, there have been many experiments to explore multi-narrative, non-linear storytelling, where audience voting or interaction determines what happens next. This is mainly happening in reality TV through audience voting (such as which celebrity stays and which one leaves the show), but multi-narrative dramas are still very rare,

and the demand for such programmes is uncertain. Some new business start-ups are experimenting with the idea of collecting and archiving the main film/TV programme with additional video and other footage related to the making of the programme to allow viewers to interact with the digital archives, based on personal interest and interaction. Others are creating platforms to allow the audience to choose their own camera angle when watching a live or recorded concert. Some organisations are trying to combine the best elements of schedules, streaming and social media in one platform but with limited commercial success. The *Wall Street Journal* started creating interactive videos using Touchcast in 2015 to enable viewers to control the story, by allowing them access to detailed information about the stories that interest them directly from the news bulletin.[12] It is still too early to tell whether demand for such services will grow rapidly.

The Wall Street Journal started creating interactive videos using Touchcast in 2015 to enable viewers to control the story.

Despite the availability of relevant technologies to make videos more interactive, the personalised interactive experience in which viewers can engage with objects in the video by clicking on them has not happened at any measurable scale. Instead, the focus of recent discussions on the future of video revolve around generating revenues from advertising or charging viewers for content. Venting his frustration, Jason Thibeault argued that *'[w]e have turned online video into the new television business and pushed aside the vision for interactive experiences in favour of figuring out how to replicate the same revenue that we generate from the television business today.'*[13]

Nevertheless, online video can evolve constantly through extensive live streaming, frequently edited iterations and mass mash-ups. The rapid development in collaborative editing, live commentary and video archive libraries will make videos more interactive, enabling the creation of a unique and personalised experience for each viewing. One particularly significant development is the launch by YouTube of a multi-angle feature in February 2015, named *Choose Your View*, which allows video creators to upload videos from different camera angles from the same performance, and letting viewers choose their view and how they want to experience the video during a live or recorded performance. It will be interesting to see whether and how this feature will take off in the near future. If successful, interactive video will give more control to the audience and enable people to enjoy a more personalised viewing experience. More importantly, interactive video can help break down the boundaries between video and the rest of the internet, creating seamless integration between them.

This could change the way we experience video, from the linear and static, to something more responsive, malleable, interactive and personalised. It will create a range of new business opportunities to develop new technologies and services to support interactive and personalised consumption of video.

[12] http://www.wsj.com/video/what-you-missed-gop-gets-less-old-less-white/EEB9E565-0F83-4DCF-95FB-C53DB205E3D8.html
[13] http://www.streamingmedia.com/Articles/Editorial/Featured-Articles/What-Happened-to-the-Future-of-Interactive-Immersive-Video-105216.aspx

IMMERSIVE AND VIRTUAL

The most anticipated – and potentially radical and even revolutionary – change in the direction of video is likely to come from the mass adoption of virtual reality (VR) and augmented reality (AR) in the next few years. This could potentially dwarf all the other changes we discussed. However, there have been numerous unsuccessful attempts over the past 30 years at mass-market VR; and very recently the much hyped Google Glass (an AR gadget) failed commercially even with the backing of the mighty Google. There is no guarantee that VR and AR will be successfully adopted by the mass public in the near future.

There are some major differences between VR and AR. Virtual reality (VR) replaces the real world with a computer simulated one, and the user is completely immersed within the computer generated virtual environment.

In contrast, augmented reality (AR) overlays 3D graphics onto our view of the real world, thereby enhancing one's perception of the real world. Elements in the real world are augmented by computer generated objects in the forms of screens, menus and other information. Both AR and VR have the potential to transform gaming, entertainment, communication, healthcare and industry, and indeed the way we interact and share experiences with each other.

These VR devices are expected to introduce a new medium to integrate with popular social media platforms, video channels, and direct messaging. If successful, the implications could be very profound.

Several VR devices have been released, and more are set to be released very soon. Samsung's Gear VR headset is already available for retail at $99/£80. Google is trying to get VR into the hands of as many people as it can, with the $20 Google Cardboard VR headset. HTC is planning to launch HTC Vive soon. Facebook invested $2billion to acquire the VR company, Oculus Rift, and its much hyped VR headset is due for release in early 2016 (with the developer's version already available at $350). This is dubbed by Mark Zuckerberg as '*the next major computing and communication platform that will come after mobile*'.[14] These VR devices are expected to introduce a new medium to integrate with popular social media platforms, video channels, and direct messaging. If successful, the implications could be very profound.

In AR, there are several companies developing new products, such as Microsoft's HoloLens; but a new startup, Magic Leap, managed to secure a $540million investment involving Google and Qualcomm, and it released a video on YouTube in 2015 to demonstrate the enormous potential of its AR technology to incorporate objects and the real world environment, and the exciting new experiences it creates for the users.[15]

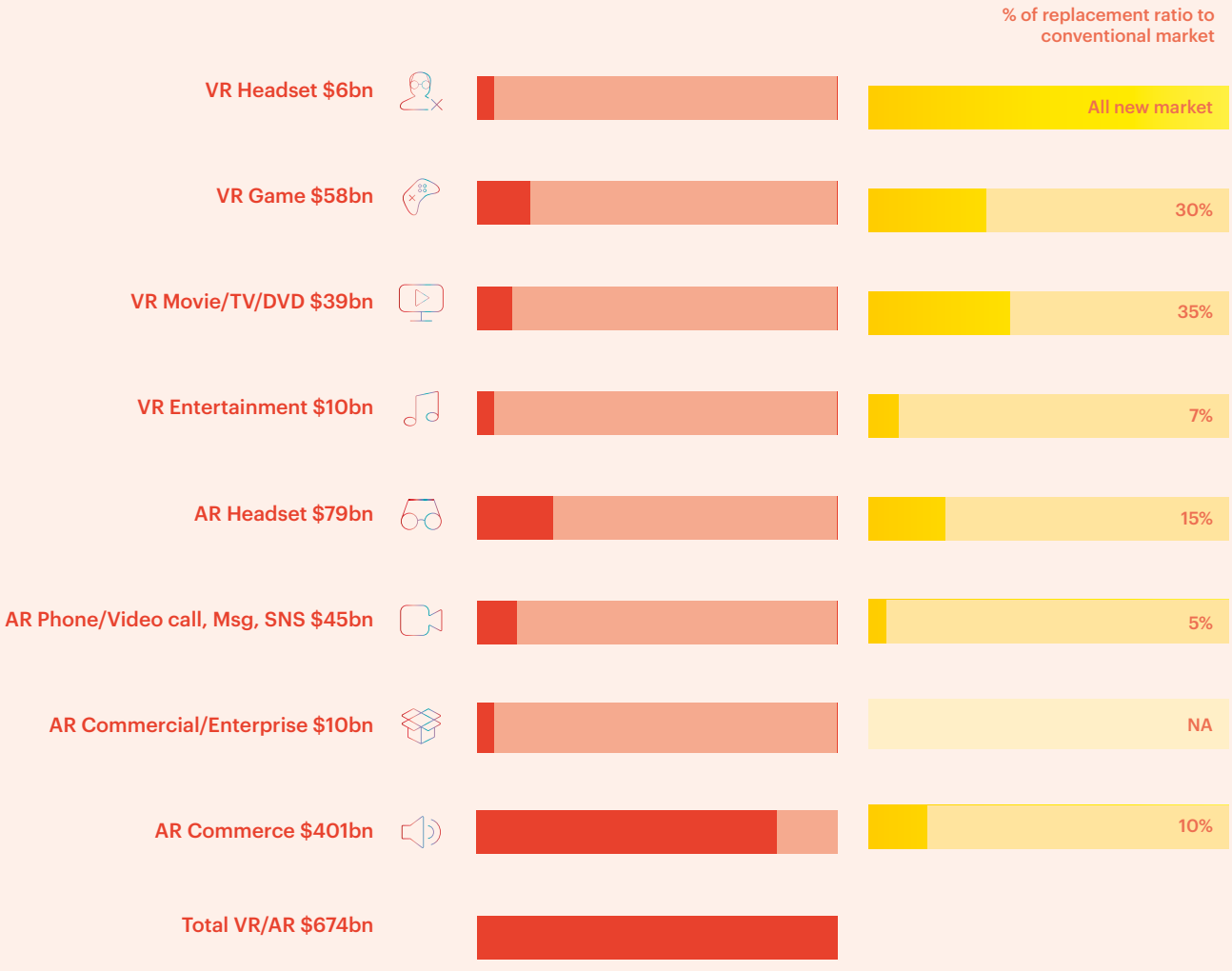
Like Google Glass, it is still possible that VR and AR will not be taken up by the general public in the near future, but a growing number of firms and investors are betting billions of dollars on their success. Citi analysts forecast the total market for AR and VR will be around $674 billion by 2025, including $400 billion for AR commerce, $125 billion for the AR headset hardware and associated phone and video services; and $113 billion for VR products and services. Many commentators believe that 2016 is the year when AR and VR will begin to take off. However, due to the lack of content and applications, it may take a few more years before VR and AR actually become widely adopted, not only in games and entertainment, but also in healthcare, education, and public services, and in many other applications such as meetings via virtual presence in different business and social contexts.

With retail products such as Samsung's Gear VR headset and Google's Cardboard VR, anyone with a smartphone can already enjoy a 360 degree private virtual experience. With a range of new VR and AR products aimed

[14] http://www.technologyreview.com/news/525881/what-zuckerberg-sees-in-oculus-rift/
[15] https://www.youtube.com/watch?v=kw0-JRa9n94

at the retail market to be launched soon, video is on the verge of being transformed by VR and AR to create genuinely immersive, virtual or augmented experiences. Video VR, immersive video and VR film could become as big as cinema and television, with significant implications for entertainment, education, industry and commerce. Real world applications that stand to benefit from the use of these devices range from gaming and communication, to architecture and medicine. Although VR and AR have not hit the mainstream market yet, an exponential growth is highly likely judging by the huge bets placed by some of the biggest and most powerful technology companies in the world. When that happens, AR and VR will transform not only video, but also a wide range of industries.

Forecast of AR and VR Market by 2025



Source: Citi Research

SUMMARY

This section discussed some significant changes in the direction of video. Today, video is increasingly non-linear and is consumed on demand. Production and consumption are increasingly mobile and ubiquitous. Video is increasingly interactive and its consumption is personalised. If AR and VR take off in the next couple of years, video will become increasingly immersive and virtual, and physical objects and environments will increasingly become digitally augmented.

These changes are enabled due to significant progression and take up of smart phones, mobile and broadband networks, and the services by a growing range of platform firms, including YouTube, social networking platforms from Facebook, Instagram, Snapchat and Twitter; and streaming applications such as Periscope, Meekat and Twitch. The use of Skype, Wechat, Facetime, and Google Hangout are making video conferencing widely available.

Numerous business opportunities are being created by such developments (which will be discussed in the next section), and the social and cultural changes are profound. Above all, with billions of video capturing devices linked to mobile and broadband networks, we are recording and archiving history by capturing events around us on video, and sharing it with anyone who is interested. In doing so we are creating a massive record of human existence in motion picture and sound, at a scale and a level of detail that were unimaginable in human history. The mass adoption of AR and VR may lead to a fundamental transformation of not only video, but also a wide range of industries from education to healthcare, and from financial services to engineering.

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BUSINESS USE OF VIDEO

From Marketing to Video Based Operations and New Business Processes

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Much of the discussion about the future of video is around issues such as the rapid growth of YouTube and how a range of social networking and other video platforms (from Facebook, Instagram and Snapchat, to Periscope, Twitch and Meerkat) are competing to develop new strategies to grow and monetise user-generated, and increasingly, professional and commercial, content. These developments are creating new opportunities for users and are leading to profound cultural changes in society. Other discussions are concerned with the rapid growth of Netflix, Amazon as well as various time-shifted services (e.g. BBC iPlayer and home or Cloud based DVRs), and how such on-demand, unicast models of video distribution and consumption might eventually challenge the dominance of the linear, programmed, broadcast model. Discussions about business use of video are primarily focused on marketing – how businesses can build on such developments to market their products and services and build their brands by targeting their customers and measuring the effectiveness accurately. In contrast, the use of video in operations and business processes across different sectors and domains has largely been ignored.

The rapid development of video is driven primarily by consumers, but this could not have happened without the support of businesses. Video applications in the consumer market have been widely adopted, driven by ease of use and low cost (often 'free' to the consumers), but supported by some of the largest and most advanced companies in the world. In contrast, video systems in many workplaces are primarily used informally and on an ad hoc basis. They are often difficult to use, with limited ability to integrate with other systems. Many of us have experienced difficulties with corporate video conferencing when the meeting was just about to start.

Nevertheless, video users increasingly bring their expectations from the consumer market into the workplace, and demand support to make video, view video content and use video communication anywhere, anytime, on any device. Today, video is not only widely used in marketing, but is also gradually becoming a key requirement for effective collaboration across cultural and geographical boundaries. The power of video is increasingly recognised by business leaders to bridge distances and cultures, transform business processes to create competitive advantage, and reduce travel, costs and environmental impacts.

MARKETING AND ADVERTISING

A simple search on Google on the future of video will return numerous returns on various emerging trends in video marketing. Many business reports have also been published on video based marketing, together with various 'how to' guides from marketing and media experts.[16] In addition to speculation on how different new technologies and services, such as VR, AR, YouTube 360 degree services and so on, might affect the future of video marketing, a significant number of commentators, often backed by survey results, are predicting that over half of advertisers will increasingly shift their advertising budget from traditional TV to digital videos. In particular, the growing importance of mobile video advertising is consistently emphasised by almost all commentators.

The global sales of smartphones exceeded that of desktop computers for the first time in the history of computing in 2011, which marked the beginning of a new era of computing on mobile devices. The ecosystem around mobile – apps, platforms, networks

– has developed rapidly since, and the popularity and appeal of mobile devices for marketers are projected to increase further in the next few years. In particular, advertisers, agencies and media platforms are building on new insights, emerging in behavioural big data from mobile video consumption, to ensure their advertising campaigns are designed for maximum measurable impact. Cross-platform campaigns that offer the reach of TV, and the engagement and targeting of digital video, are increasingly launched with engagements and impacts carefully measured.

2016 is also seen by many as the year that digital video will broaden well beyond YouTube. Advertisers, audiences and creators will have many new options to create and consume content.

2016 is also seen by many as the year that digital video will broaden well beyond YouTube. Advertisers, audiences and creators will have many new options to create and consume content, because every major social network platform is prioritising video as a central part of its strategy. These mobile centric platforms are increasingly becoming key components of video marketing strategies. They will all become more data-driven, with everything measured and analysed. This view is clearly reflected in the interviews conducted with a number of businesses and video experts for this report.

New challenges are also highlighted, including the rapid growth in the use of ad blockers by consumers, both on desktop and on mobile devices, to prevent the downloading and playing of video advertisements. Other challenges include the historical difficulties in creating engaging content, and measuring ROI and effectiveness of campaigns. Since producing and distributing professional quality videos is – and will remain – expensive and time consuming, businesses need to allocate adequate budget, or move budget from other areas, to support digital video advertising campaigns.

My interview with a major multinational Fast Moving Consumer Goods (FMCG) corporation indicated that it has been increasing its digital video marketing budget year on year. Despite stories of successful free viral marketing on YouTube, this firm found that most of effective digital video marketing campaigns are paid ads. The quality of the video is particularly important in protecting the brand, which needs to be carefully coordinated with the brand messages in other forms of advertisements.

All video ads from the firm are professionally produced, often by re-using footage from TV ads, and they are getting more expensive each year. Although viral marketing through user-generated content is still possible, it is mostly happening in the so-called experience products and services (such as games or sports cars). Managing and harnessing user-generated content, and building and maintaining relations with enthusiastic fans, is a challenging, time-consuming and potentially expensive business for the brand involved. Some examples have been discussed in other parts of this report.

[16] E.g. http://www.thebcma.info/white-paper-the-future-of-digital-video-content/; https://tubularlabs.com/thought-leadership/ogilvy-report/

VIDEO-BASED OPERATIONS AND NEW BUSINESS PROCESSES

Although video based operations and new business processes have not been talked about with the same level of enthusiasm and excitement as video marketing, a growing range of operational uses of video have been developed across different industries.[17] Some of them are routine, standalone or *ad hoc* uses, but increasingly video based new business processes have been developed. Even some *ad hoc* uses of video (such as video conferencing) have become an essential form of communication for many knowledge workers in different industries.

Many factors are driving the increasing use of video in business. Today, video communication is essential for the increasingly global workforce and the need for real-time collaboration. This has also been aided by growing environmental awareness and the need for reducing travel and energy use. The widespread use of social networks outside work by employees is affecting their expectations in the workplace, and the workplace itself is 'extended' by mobile phones and wireless networks to the home, airports, hotels and other places. People increasingly expect ubiquitous access to video conferencing, with the ability to view executive communications and collaborate with co-workers regardless of their location. On the supply side, the technological, financial and skill barriers have largely been eliminated, and organisations are able to support video and video communications that historically required dedicated facilities and transmission networks on a single corporate network.

Video is increasingly used in businesses for internal communications. In a global conglomerate I interviewed for this study, video is increasingly used for internal communications and staff development. When a new recruit joins the firm, a postcard would be sent to them, with a link to a personalised welcome video message from the head of the operating company. Short videos are professionally produced to share

best practices developed in one operating company with other companies within the group throughout the world. Currently the group company is developing a series of online videos professionally for leadership development, aimed at senior directors in operating companies around the world. Despite the lowering of technological, financial and skill barriers, producing high quality video is expensive, requiring the service of professional firms. All videos in the company are currently produced and edited professionally, and distributed through the group's corporate network. The use of amateurs for video production and distribution is avoided deliberately.

> Today, video communication is essential for the increasingly global workforce and the need for real-time collaboration.

The group also uses Google Hangout to organise themed virtual meetings, which enables senior management in different operating companies to communicate and share experiences with each other. One advantage of such a meeting is that everything, including videos, can be recorded and archived for future reference, and for those who could not join such meetings to catch up on the discussions. The data gathered can also be analysed to inform future meetings. For example, they found that short, themed meetings are more effective than longer meetings without specific themes. The availability of group senior leaders can also help encourage participation from the operating companies. Video conferencing is also widely used, with dedicated facilities in the main office for internal meetings, and Skype and other free services. My interview with the company was conducted using Skype even though we are both based in central London – the flexibility enabled by Skype allowed us to arrange a meeting and conduct the interview quickly and conveniently.

Video is also increasingly incorporated into operations and business processes across different industries. The most prevalent use is perhaps video conferencing, using either free (e.g. Skype, Facetime, Google Hangout) or dedicated, company specified facilities. Many such uses are *ad hoc* in nature, but applications such as Skype are extensively and regularly used by many projects and teams, particularly those with members from different locations. A growing number of organisations have implemented policies on using video conferencing. For example, one firm I interviewed for this study did not allow the use of Skype by employees in the office, but other firms were rather more relaxed about it.

The operational use of video is becoming increasingly common across different sectors. In the public sector, for example, CCTV footage, vehicle mounted cameras and body cameras are extensively used by the police for security, crime prevention and traffic management. In many organisations, video is an integral part of security and surveillance. For many urban authorities, the development of smart city initiatives has prompted significant growth in the use of video across different areas and functions. In healthcare, video links are used by some physicians in multiple locations in the USA to access

[17] http://www.cisco.com/web/offers/lp/forbes-insight-video/offer2123.html
[18] http://www.cisco.com/c/dam/en/us/solutions/collateral/business-video/business-video/busVideo_Long.pdf

interpreters' services remotely on demand.[18] In education, video has been used for online learning, and more recently, for student selection. For example, the course team for the MSc Marketing Programme at Cass Business School in London interview all shortlisted candidates by Skype before the final offer is made. As the number of applications increased significantly, however, they required all shortlisted applicants to record and upload a short video answering a series of questions, which members of the course team can view when selecting students. The use of Skype for the recruitment of new staff has also become very common, particularly when involving international candidates.

In the insurance industry, video is used to assess damages and record evidence by field staff when dealing with claims. Video footage from dash cams by motorists and helmet cams by cyclists is also increasingly used as evidence. In some service industries, for example, service and repair of home appliances, field engineers (e.g. a gas engineer repairing a boiler) increasingly use mobile video to communicate with more experienced colleagues to obtain help when they encounter problems. In financial services and retail, expert-on-demand services are increasingly made available, where customers can access experts through video links. Some investment banks use 'tele-presence' video conferencing facilities to convene meetings between collaborating business partners using life-sized screens. In engineering and consultancy, video conferencing and other video based collaboration tools are increasingly used to bring experts together across the globe, and to engage with clients.

Video is commonly adopted in different business functions today, from R&D, production to supply chain management. In many organisations, video is used for recruiting new staff. Prospective candidates often need to meet multiple people over several rounds, and many such meetings are now carried out by video conference.

Some investment banks use 'tele-presence' video conferencing facilities to convene meetings between collaborating business partners using life-sized screens.

SUMMARY

Today, video is used increasingly to support communication and collaboration across all industries and all sizes of business. It is an excellent medium to demonstrate a new product or service, explain how to do something, communicate corporate visions and strategies, update on progress, showcase expertise, and capture testimonials from customers, clients and employees. More importantly, video's ability to bring people 'face-to-face' together instantly at critical moments improves collaboration and problem solving, increases productivity and accelerates innovation. Video encourages new ways of working that connect virtual teams in complex, fluid and rapidly changing environments. In the near future, we expect to see more video based operations and new business processes in a growing range of business functions and across different sectors.

CHALLENGES

The changing direction of video also brings a series of new challenges for businesses. Examples include appropriate use of video by employees both within and outside the workplace and video etiquette; managing and harnessing user-generated content; issues around privacy, confidentiality and truth; the effective management of legal rights of relevant materials; and the new demand on corporate IT infrastructure that can effectively support video. These and many other challenges call for the development of holistic video strategies in organisations.

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MANAGING APPROPRIATE USE AND VIDEO ETIQUETTE

Today, most organisations have adopted policies on appropriate (and unacceptable) use of email and the internet to minimise the potential risks of misuse. Although video is becoming an increasingly popular and powerful communication medium, similar policies for video use at work are still relatively rare, and the focus is often on what is not allowed in some organisations (e.g. Skype is not allowed in some organisations due to security concerns).

Today, video represents both an exciting opportunity for businesses to engage directly with customers, and a significant challenge to control and manage within and beyond the workplace. With so many recording devices in the hands of almost everyone, a comprehensive video policy is becoming increasingly necessary in order to protect an organisation's reputation and brand.

Today, video is widely used as part of our jobs. In addition to video conferencing and video-based training, social networking has increasingly penetrated the workplace either as part of our work or as a purely social activity of the employees. The latter is often

Today, video represents both an exciting opportunity for businesses to engage directly with customers, and a significant challenge to control and manage within and beyond the workplace.

for light-hearted purposes (such as recording events and embarrassing moments), but these can have unintended consequences for the organisation involved. In fact, inappropriate video postings by employees even when outside the workplace can significantly tarnish the reputation and brand of an organisation. How to manage and control the appropriate use of video in the age of ubiquitous smartphones and wireless networks has become a serious challenge for a growing range of organisations.

Educating staff on what is – and is not – acceptable needs to be taken seriously. Inappropriate use not only carries the risk of reputational damage for the organisation, but also in some cases, regulatory and compliance risks. In addition to obvious issues such as security and protecting and managing proprietary materials, an organisation's video policy should include videos taken in the workplace that are not directly related to work (e.g. filming a colleague in the office and sharing it on Facebook), and even some videos outside the workplace (e.g. misdemeanours or inappropriate comments on contemporary or sensitive issues), which can cause potential reputational and other damages simply by association with the organisation. Video is a double-edged sword: despite the huge potential benefits that can be derived from video, it can also inadvertently or deliberately cause irreparable damage to an organisation. Such risks need to be carefully managed.

[16] E.g. http://www.thebcma.info/white-paper-the-future-of-digital-video-content/; https://tubularlabs.com/thought-leadership/ogilvy-report/

PUBLIC WITNESSING: THE EVOLVING NOTION OF PRIVACY AND TRUTH

With billions of video recording devices in the form of mobile phones, digital cameras, CCTV and sometimes invisible spy cameras, and with videos capable of being uploaded or streamed live online for anyone anywhere in the world to see, a new phenomenon has emerged, which is often described as public witnessing or mass witnessing. This can challenge our social expectations and behaviours, and indeed, even our notions of privacy, confidentiality and truth have taken on new meaning. In particular, the ubiquity of video recording and distribution both in public and private spaces signals a fundamental shift in our expectations of privacy, confidentiality and free expression. It is now possible that everything happening anywhere can be recorded and instantly distributed for the rest of the world to see. For business leaders, employees, visitors and guests, customers and business partners, and indeed, for everyone, all actions and interactions are potentially recorded and distributed publicly. The implications are obvious. For businesses, everyone needs to be conscious of their social performance and public behaviour even in private settings. Also referred to as media witnessing or citizen-camera witnessing, we are entering a world of constant and mutual observation. As Kevin Kelly argued: '*What the Internet does is track ... how are we going to live in a world of ubiquitous tracking?*' Our understanding of privacy may need to change.

The notion of truth and reality is also being radically altered by video technology. With the wide proliferation of cameras and ubiquitous mobile networks for streaming and uploading, an event can be captured and shown from multiple angles and perspectives, each telling a different story of the same event; and every event is open to multiple interpretations. Furthermore, since video can be edited and remixed, and the content often evolves through every interaction and iteration, our assumptions of consistency, stability and reliability are also increasingly altered. This requires us to approach any video with more scepticism, as we need to recognise that what we see today may be different from yesterday or tomorrow.

RIGHTS INFRINGEMENT AND DIGITAL RIGHTS MANAGEMENT (DRM)

One of the biggest problems highlighted by a global FMCG company that I interviewed for this report is the growing risk of rights infringement of copyrighted materials in videos, which can only be partially addressed by commonly used DRM platforms and software. Once released, a video lives on the internet forever even after the video file is removed from the original location. Today, video ads are pushed onto multiple platforms, in multiple countries, for the wide range of products from the firm. These videos often involve numerous people (e.g. writers, producers, actors) who own different rights of the music tracks, images, and other materials, often under different terms and over different timespans (from 1-2 years, to 5 years to indefinite). As the number of videos grows rapidly, it is easy to lose track of the different legal rights and those people who own the different rights.
This could inadvertently lead to potentially damaging rights infringements. There are occasions when this company wanted to re-use historical video materials but could not do so because it could not track down the rights' owners. Managing legal rights effectively and systematically has become a significant issue for the firm, which is likely to get worse as the volume of video grows rapidly.

Despite the availability of numerous DRM platforms and software, many of them focus on access control to limit the use of videos and other digital content. At the moment, DRM is widely used by companies concerned with copyright (such as those in the games, TV and films industries) to protect the revenues generated from their work, and prevent the unauthorised distribution of copy-righted materials. Access restrictions can be used to ensure the video is only played back from an authorised account or in specific geographies. However, such systems are rarely used by firms to ensure they are not inadvertently or unknowingly infringing the copyrights owned by others.

Rights infringement is rampant on the internet. Platform firms such as YouTube and Facebook have been making attempts to take down videos copied from elsewhere. YouTube uses Google's *Content-ID* to manage potential infringement of content; and Facebook, after its failed attempt to build its own system, decided to adopt the biggest competitor of *Content ID - Audible Magic* - as its default system for content and copyright filtering. However, there are still questions with regard to the effectiveness of such systems, and the problem is unlikely to be resolved quickly.
According to a report by Ogilvy and Tubular Labs, 725 of the top 1,000 videos on Facebook were 'stolen re-uploads'.[19] This is referred to as 'freebooting', when third parties misuse other people's content without permission. Businesses need to be fully aware of the risks and technical challenges for rights infringement and digital rights management, which should be an integral part of their video strategy.

[19] http://www.slideshare.net/socialogilvy/the-rise-of-multiplatform-video-why-brands-need-a-multiplatform-video-strategy. Cited from https://medium.com/@hankgreen/theft-lies-and-facebook-video-656b0ffed369#.9qqkxejea

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UPGRADING CORPORATE IT INFRASTRUCTURE AND SERVICES

In recent years, many traditional constraints for corporate IT infrastructure have been significantly alleviated by the migration to Cloud services and the increasing adoption of on-demand computing and communication services. IT outsourcing also served to shift many traditional IT problems from the organisation to third-party service providers.

IT leaders and CIOs are under renewed pressure to address emerging issues in data management, security and privacy

However, the rapid growth of video has created new challenges for corporate IT. In particular, as video is increasingly combined with other digital assets to support communication, collaboration, marketing and operations in a growing range of organisations, IT leaders and CIOs are under renewed pressure to address emerging issues in data management, security and privacy, and corporate IT infrastructure upgrades.

As video becomes an integral part of day-to-day communication, and as operational use of video continues to grow rapidly, generic digital asset management systems may become insufficient in coping with growing demand for improved communication, collaboration and transparency. Specialised video asset management systems and external video hosting services are often required. Furthermore, the increasing use of video in business, particularly when using mobile devices, carries significant new security risks, as viruses and malwares for phishing can be more easily embedded in videos than in many other digital files. This concern is clearly reflected in the survey of business use of video by FTI Strategy Consulting & Research. Organisations need to review their IT strategy to ensure video communication is adequately supported, and video assets are effectively managed and preserved for the future.

SURVEY OF BUSINESS USE OF VIDEO IN THE UK

Dan Healy
FTI Strategy Consulting & Research

FOR MANY BUSINESSES, THE BIGGEST FEAR IN USING VIDEO IS RELATED TO SECURITY, WHICH IS FOLLOWED BY MANAGING THE VOLUME AND CONTROLLING ITS USE,

Introduction
Feng Li

Alongside the review on the future of video, a questionnaire survey was designed and conducted by FTI Strategy Consulting & Research in December 2015 on the future business use of video in the UK. The survey received 1,105 completed questionnaires from managers and above in SME and large privately owned or publicly listed companies across the UK. Some of the main findings are reported in this section by Dan Healy from FTI Strategy Consulting & Research.

The survey results identified significant trends and patterns, which are consistent with the main findings of the literature review. In particular, the survey found that Millennials (defined as 18 to 29 year olds) are four times more likely than their older generation Baby Boomers (defined as 50+ year olds) to generate video several times a day for external purposes. It also found that in addition to a 'business reason', monitoring competition and idea generation are the second and third most popular reasons to watch corporate videos. The survey revealed that for many businesses, the biggest fear in using video is related to security, which is followed by managing the volume and controlling its use, particularly with the rapid growth and widespread use of social media. Security breaches can lead to the loss of a customer, as well as regulatory fines and investigative costs. Although businesses are unanimously cognisant of the growing importance of video, the lack of time and budget in many organisations will continue to limit the productive use of video in operations and core business processes. In this section, the main findings from the survey are discussed.

1—The importance of video

The statement 'video content provides a competitive edge over our competition' shows 80% see it as a key area to develop and a near ubiquitous 95% consider 'implementation of technology for communication' is important. Video is considered to be the most cost effective and impactful communication channel for both internal (36%) and external (43%) purposes, significantly higher than all other communication mediums assessed.

Q. How strongly do you agree or disagree with the following statements?
Video content provides a competitive edge over our competitors

26% Strongly agree

54% Slightly agree

16% Slightly disagree

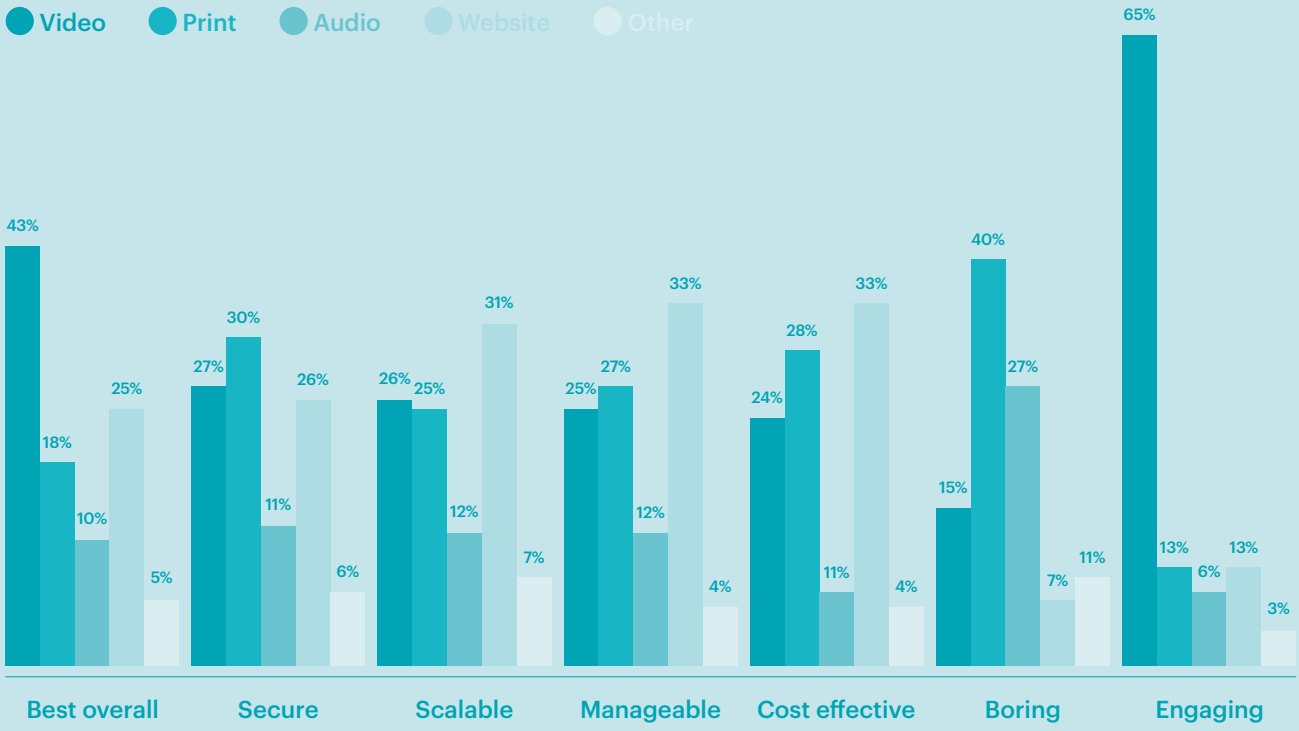
4% Strongly disagree

Base (SME and Large UK Business Managers): n=1,105

2—Power of video

65% of SMEs and large organisations consider video to be the most 'engaging' communication channel, compared to a distant 13% for print; print was also considered the most boring for 40%. Respondents felt that video is particularly adept at making complex messages simpler to understand, entertaining viewers and conveying emotion. Challenges exist with perceptions of it being cost effective, manageable, scalable and secure, however, it is still ranked significantly higher than other channels with 43% of respondents rating it the 'best overall' for communication.

Q. Which of the following attributes would you MOST associate with the following communication channels? (Please select one column response for each row)



Base (SME and Large UK Business Managers): n=1,105

3—Keeping up with competition

Approximately 3 in 10 SMEs and large organisations claim they are better than their competitors when it comes to use of video content both internally and externally, despite 65% using it for internal and 63% for external purposes. This lag is emphasised by 34% of respondents perceiving their business' actual implementation of technology in the workplace as being ahead of competitors; and 33% rating its implementation of technology in communication ahead of that of competitors. The 2:1 split is best portrayed with 69% agreeing that 'our competition use video content better than we do'.

Q. How would you rate your organisation's use of the following compared to competitors? (Please select one column response for each row)

Use of video content externally

27% Better than others

49% The same as others

19% Worse than others

6% Don't know

Use of video content internally

28% Better than others

47% The same as others

19% Worse than others

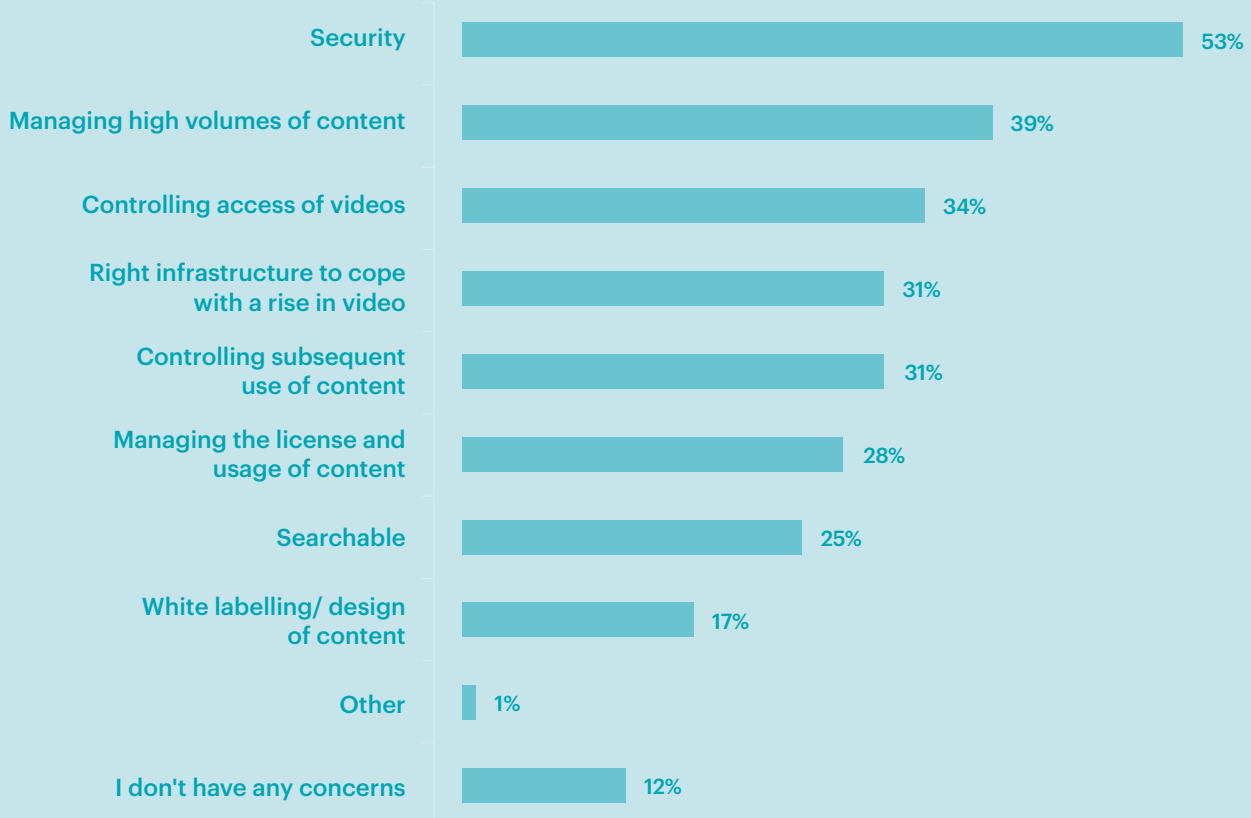
5% Don't know

Base (SME and Large UK Business Managers): n=1,105

4—Security concerns and experience:

The greatest concern about the management of video content is security (53%) followed by 'managing high volumes of content' (39%) and controlling access to videos (34%). The concerns over security are brought to reality with 35% claiming they've either had first-hand experience or are aware of it (particularly so for 39% of SMEs compared to just 30% for large organisations) and a further 10% have heard rumours about it being compromised. Just 38% of SME and large organisations have an effective video management system to store and search video content, while a further 39% consider their present system is ineffective or they at least need to have one.

Q. What are your concerns with regards to the management of video content? (Please select all that apply)

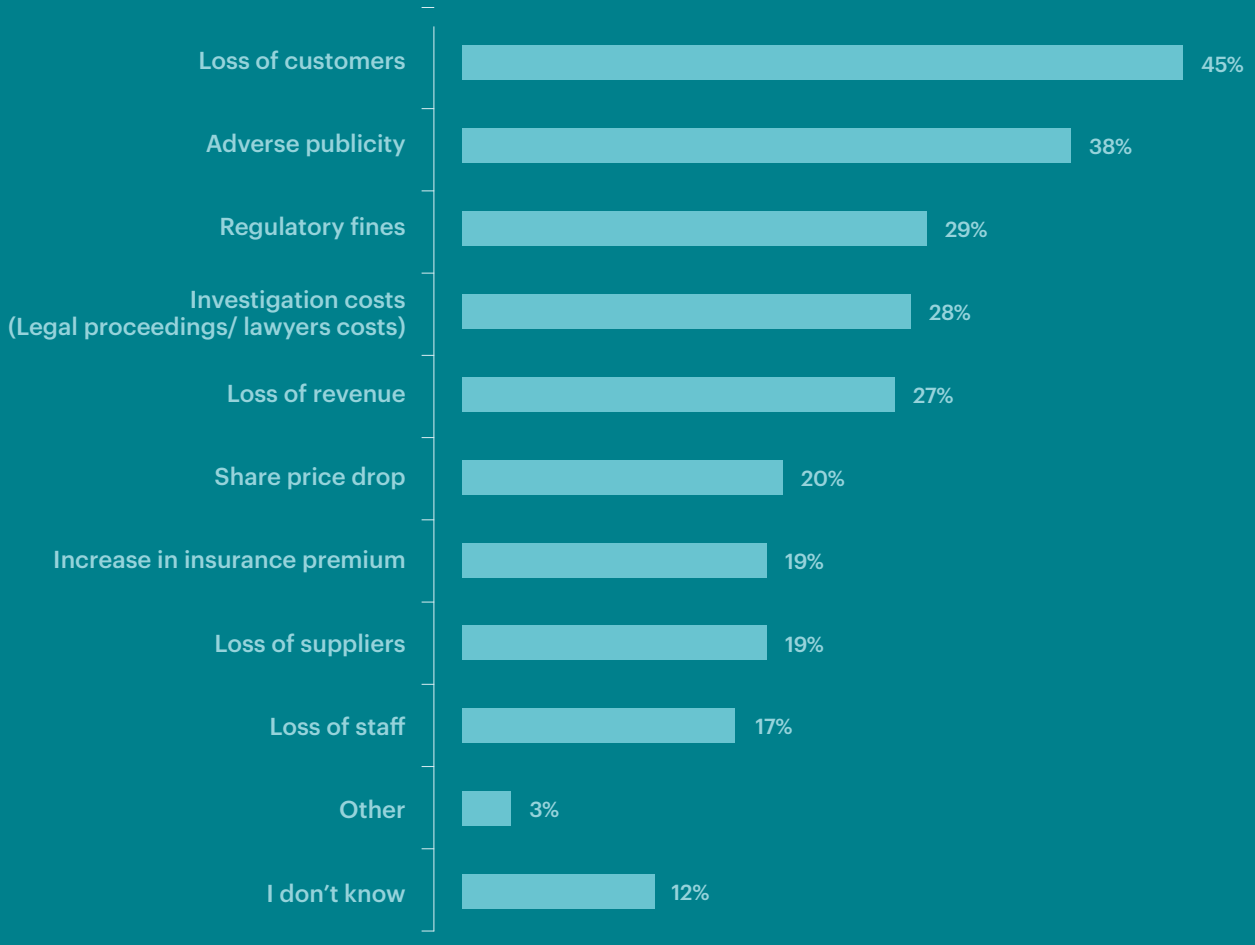


Base (SME and Large UK Business Managers): n=1,105

5—Impact in security breaches

The greatest concern stemming from a possible security breach is 'loss of customers' at 45%. This echoes the reality of those who have had a breach where a third (34%) reported 'loss of customers' (the highest of all the consequences), followed by 30% receiving regulatory fines and 28% incurring investigation costs.

Q. If there was an online security breach, which of the following consequences would your organisation particularly fear? (Please select all that apply)

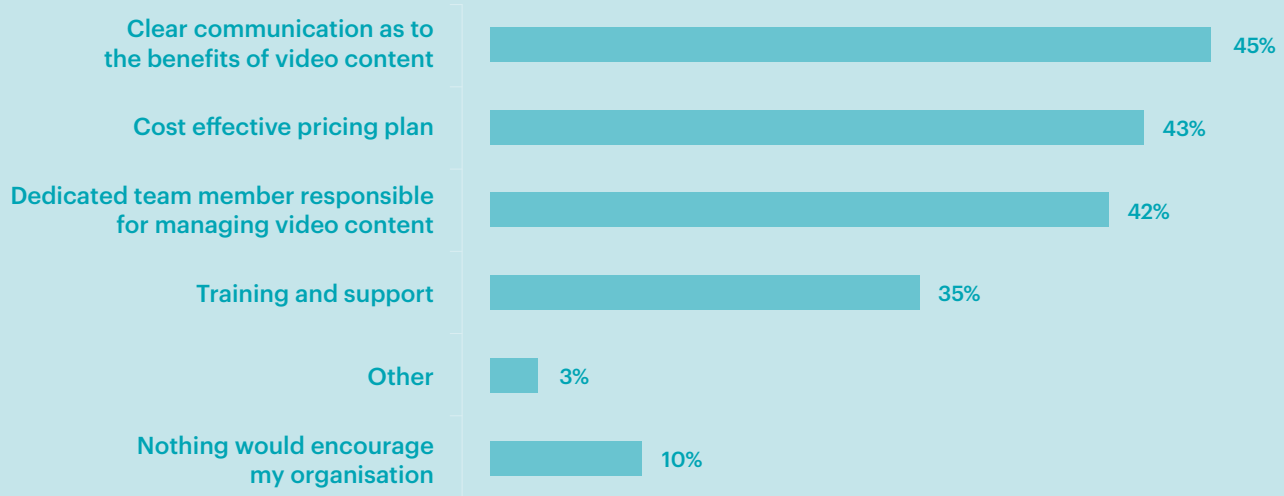


Base (SME and Large UK Business Managers): n=1,105

6—Driving video usage by organisations

Corporates are particularly looking for 'clear communication as to the benefits of video content' to drive usage (45%) and echoing concerns on cost, they desire a 'cost effective pricing plan' (43%). 80% of businesses believe video content provides a competitive edge over competition.

Q. What would encourage your organisation to use video content? (Please select all that apply)

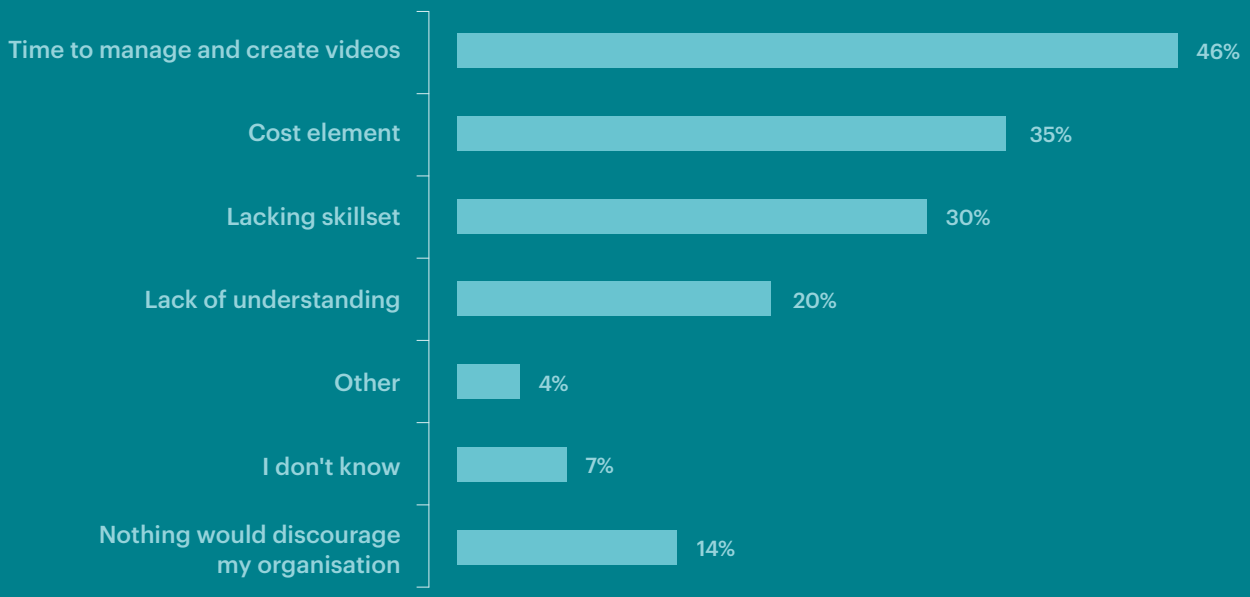


Base (SME and Large UK Business Managers): n=1,105

7—What is holding back video usage

The main hurdle obstructing organisations from using video content is 'time to manage and create videos' for 46% followed by the 'cost element' for 35%.

Q. For which of the following reasons do you feel discourages your organisation using video content? (Please select all that apply)



Base (SME and Large UK Business Managers): n=1,105

8—The future

Approximately 8 in 10 (79%) of UK SMEs and large organisations will invest in video content in the next 12 months. This is 7% higher for those presently using videos, thereby endorsing the beneficial impact it is having. Millennials (defined as 18 to 29 year olds) are four times more likely than their older generation Baby Boomers (defined as 50+ year olds) to generate video several times a day for external purposes.

Q. How strongly do you agree or disagree with the following statements? (Please select one column response for each row) Usage of video content in organisations will grow in the next 12 months

31% Strongly agree

47% Slightly agree

16% Slightly disagree

5% Strongly disagree

Base (SME and Large UK Business Managers): n=1,105

CONCLUSION

This report examined how video has changed, and explored what these changes mean for businesses in the digital economy. Changes have been identified not only in the mainstream film and TV industries, but also, more importantly, across almost all sectors of the economy. The meteoric rise of YouTube through user-generated videos, and more recently, the refocus of almost all major social networking platforms on video-based strategies, are creating new opportunities for advertising and learning, and contributing to the recording, making and remaking of our culture in the digital age.

The way that video is produced, distributed, consumed, archived and monetised has been fundamentally transformed by technological innovations, infrastructural development and the rapid growth of powerful social networking and other platform firms. These developments have collectively reduced the technological, financial and skills barriers for video production, distribution and consumption to virtually nothing. Video is increasingly becoming on demand and non-linear, social and participative, and interactive and personalised. In particular, the widespread adoption of smartphones by billions of people from around the world has made the production, distribution and consumption of video mobile and ubiquitous, leading to the eventual arrival of the democratisation of video that has been predicted for decades. The mass adoption of VR and AR technologies in the next few years will allow the creation and sharing of virtual and immersive experiences through video, with profound implications for a wide range of industries.

Video is increasingly used by businesses across different sectors, not only for marketing and staff development, but also for operations and new business processes designed around video and video communications. The latter may lead to strategic and organisational innovations that would transform the way different industries operate.

As Kevin Kelly argued, every technology creates almost as many problems as it solves, but new technologies bring with them new possibilities that did not exist before. As business use of video continues to grow rapidly, a series of new challenges need to be addressed by business leaders

at both the strategic and operational level. Whilst a growing range of organisations need to develop video strategies to exploit emerging opportunities from video, they also need to develop policies and strategies to ensure appropriate use of video and video etiquette, train and educate managers and staff about the opportunities and risks of public witnessing, implement systems and best practices in managing digital rights and rights infringement in videos, and upgrade their corporate IT infrastructure to meet new demand from the increasing use of video.

Nevertheless, video is becoming more interactive, immersive, ubiquitous, mobile, social and participative, and its consumption increasingly non-linear, on demand and personalised.

The transformation of video will continue with further advances in camera technologies and accessibility, new distribution and editing/rendering platforms, further development in video based communities, and new ways to experience and consume video with new technologies and services. When media change, human relationships change. Most commentators have so far focused on the profound social and cultural shifts in society that are being brought about by video, alongside discussions on how to monetise video and how to market products and services through video. User-generated video was mostly considered a cultural phenomenon, which affects people's values and behaviours. However, the same level of attention has been lacking in developing a systematic understanding of the operational use of video by businesses, and in particular, video based operations and new business processes across different sectors of the economy. New digital strategies with a strong focus on video are required.

Predicting the future of video is a risky business because of the huge number of uncertainties involved. In just over two decades, the internet has delivered a long list of amazing changes that nobody could have predicted, even though we have all accepted and adapted to these changes with ease. In a few years, video may well evolve in ways that we could not even envisage today. Nevertheless, video is becoming more interactive, immersive, ubiquitous, mobile, social and participative, and its consumption increasingly non-linear, on demand and personalised. As Clive Thomson argued: 'The real significance of a new medium isn't in how famous people use it or how businesses use it. It's in the mundane uses. You'd think we'd have learned this lesson by now. When a new form of communication suddenly becomes cheap and easy, people don't merely copy the stuff on TV and in Hollywood. They do new things. Weird things, too. Things which violate previous ideas about aesthetics and utility.'[20] Such changes will bring with them difficult challenges, but also open up new opportunities for businesses to innovate and to transform the way business is conducted, in marketing, in operations and in business processes, and in the way supply chains and business ecosystems are developed, maintained and supported.

[20] http://www.wired.co.uk/magazine/archive/2015/09/ideas-bank/the-future-of-video-clive-thompson

ABOUT THIS RESEARCH

This report is based on a comprehensive review of relevant research and analysis, reports, opinions and commentary, from different sources, supplemented by interviews with a small number of business leaders from different industries and senior academics specialising in digital media research.

–1

The ISI Web of Knowledge to identify suitable academic research published in journals and conferences.

The ISI Web of Knowledge pools together four indices: the Science Citation Index (SCI), the Social Sciences Citation Index (SSCI), the Arts and Humanities Citation Index (A&HCI - since 1970), and the Conference Proceedings Citation Index-Science (CPCI-S - since 1990). The search for this report focused on publications since 2005.

The search identified over 20,000 research papers containing the word video, which was then narrowed down through different search words. Most of the returned papers were, however, not directly relevant to the future of video, with many of them primarily technical papers. Those focusing on the business use of video are predominantly about video marketing and video games. Examples include whether a video apology by the CEO on YouTube is helpful after a major service outage by a company; or how to market particular products and services through video on different social network platforms or YouTube, and how to measure the effectiveness of the campaigns. Few papers focused on how businesses might use video differently in the future.

An added problem with this body of knowledge is that, most academic research (particularly those in top business management journals) represents a 3-5 year time lag (some of them longer) from a real world phenomenon. It usually takes 1-2 years for something significant to emerge and develop, another 1-2 years to gather data, and then a further 1-2 years to turn the research into academic papers for publication through the peer review process. As a result, the value of academic papers for this report was, ironically, much more limited than originally expected.

–2

Google Scholar to identify published academic research.

To ensure the search on ISI Web of Knowledge did not overlook any significant research papers, a search of Google Scholar was also carried out. However, the key word 'video' returned over 4 million results. Some of the returned papers are different from Web of Knowledge, but the issues are similar, and the papers identified from Google Scholar tended to be even more out of date due to the time it usually takes for citations to build up. This body of work is also of limited use to this report.

–3

Reports by research firms and investment banks.

A useful source of data for this report is the research carried out by investment banks and research/business consulting firms. However, the focus of most such reports are usually about the TMT industries, or specific firms from those sectors, particularly their business outlooks in the short to medium terms from the investors' perspectives. Some reports are based on data gathered from surveys and opinions, with analysis and commentary from sector experts. This set of studies provided useful background, industrial trends and new insights in relevant areas and in the digital economy in general.

–4

General Google Search.

A general Google search was also carried out. By using different search words and in different combinations, a wide range of opinion pieces, predictions, analysis and commentary are identified. The quality of the data is very inconsistent, so triangulation from multiple sources is often required; and many of the views expressed are speculations without solid justifications, or are based on anecdotal rather than concrete evidence. The issues highlighted by this body of materials are, however, the most relevant to this report.

–5

Interviews with business leaders and senior academics.

A small number of interviews were carried out for this report with selected business leaders and senior academics with knowledge and experience in video and digital media in general.

First, a major multinational conglomerate was approached, and a Skype interview was conducted with a Senior HR director for the group (rather than the marketing or digital teams in order to obtain a user perspective), which lasted for nearly 2 hours. The group uses video for training and internal communications, as well as for brand building and marketing. A range of issues were discussed, including the quality and cost of video production; the effectiveness and limitations of video based training and leadership programmes; the use of video for brand communication and sharing of best practices both internally between the group head office and the operating companies; and externally with customers and other stakeholders. The experience of the group in using Google Hangout regularly for senior directors of operating companies from around the world is particularly insightful.

Second, an interview was conducted with the marketing director of a major multinational company in fast moving consumer goods (FMCG). The company uses video extensively both in TV advertising and for internet marketing through paid placements on websites and on social networks. Issues highlighted include the cost and quality of video production and distribution; and major challenges such as digital rights management (DRM) and the risk of right infringement when using video for internet marketing. A wide range of other issues were also discussed.

Third, an interview and a number of follow up exchanges were held with a professor of interactive media in a major British University. Our discussions focused on the technology behind interactive, multi-narrative story telling; the transition from traditional linear programmed TV to interactive, non-linear, on-demand video distribution and consumption. We also

explored various experiments in interactive TV programmes both in the UK and continental Europe, for example, through live audience participation and audience voting, and the drivers and barriers for such interactions. Emerging trends, such as personalisation of video consumption through interaction, multi camera viewing, as well as where video is going, were also discussed.

Fourth, an interview was carried out with a leading academic with over three decades of research experience in digital media and the associated social, economic and policy changes. Our discussion focused on the areas where significant changes are taking place in video, the drivers and barriers for such changes, and what may or may not happen going forward. Specific advices were given on how to integrate different sources of data for this report.

In addition, informal discussions were held with members of the media team at Cass Business School on using video to promote academic research and expertise; and with the MSc Marketing course team who use Skype and self-recorded video by candidates for student selection.

Finally, over the course of this research, informal discussions were held with a large number of business consultants and academics specialising in digital media, particularly via activities and events in the £18 million Digital Creative Hub funded by the Research Councils UK (RCUK) and over 80 business partners from different sectors. Their opinions and the examples they cited on innovative use of video across different industries have informed this report.

–6

Survey of business use of video in the UK, by FTI Strategy Consulting & Research.

In parallel to research for this report, a survey was designed and conducted by FTI Strategy Consulting & Research. The research was conducted with n=1,105 managers in SME and large private and publicly listed companies across the UK. The search was run online to allow respondents to participate at a time most convenient to them from 11th to 19th of December 2015. There were a total of 43 questions and the aggregated respondents had the following profile:

74% Privately owned companies
26% Publicly listed companies
55% SMEs
45% Large organisations
28% London based

For more information on the research methodology, please contact: dan.healy@fticonsulting.com

Imagen Ltd provides secure video management solutions for a wide range of corporate & government clients including UK Defence.
Imagen Enterprise Video Platform helps companies to effectively organise their video content and scales to meet the needs of small businesses up to managing archives of national importance.
With twenty years' experience in video management, Imagen enables companies to effectively archive, monetise, manage and search for video content and engage their customers and staff through video more effectively.
www.imagenevp.com

Cass Business School, which is part of City University London, delivers innovative, relevant and forward-looking education, consultancy and research. Cass is located in the heart of one of the world's leading financial centres. It has strong links to both the City of London and its corporate, financial and professional service firms, as well as to the thriving entrepreneurial hub of Tech City – located close to the School.
Cass MBA, specialist Masters and undergraduate degrees have a global reputation for excellence, and the School supports nearly 100 PhD students.
Cass offers one of the widest portfolio of specialist Masters programmes in Europe. It also has the largest faculties of Finance and Actuarial Science and Insurance in the region.
As examples of recent independent rankings of its research, Cass is ranked number 3 in Europe for its finance research, number 2 in Europe and number 11 in the world for banking research, and number 1 in Europe and number 2 in the world for actuarial science research.
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FTI Strategy Consulting & Research practice regularly conducts primary and secondary market research, delivering in-depth market and stakeholder analyses to help clients solve complex business and communication requirements.
Working closely with industry sector experts within FTI Consulting, the team rigorously researches stakeholder perceptions, clients' brands, operations and views from the financial markets. Its international network enables the team to conduct research in all relevant countries, employing its expertise and knowledge of the market research industry and methodologies to deliver optimal levels strategic and indicative insight for clients.
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PROFESSOR **FENG LI**

THE FUTURE OF VIDEO