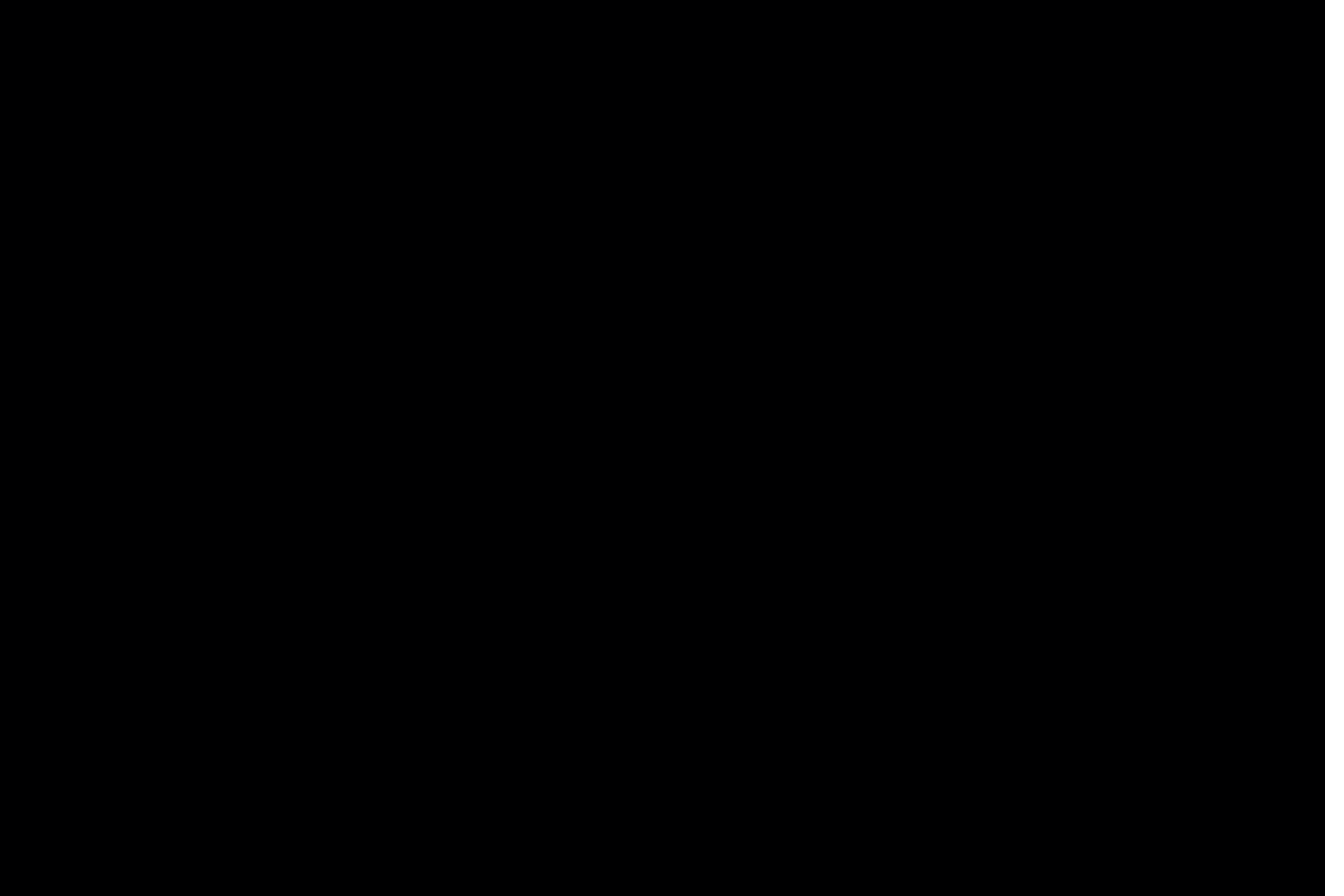2019

GLOBAL COMMUNICATIONS REPORT

PR:TECH

THE FUTURE OF TECHNOLOGY IN COMMUNICATION

USC ANNENBERG CENTER FOR
PUBLIC RELATIONS

2019 GLOBAL COMMUNICATIONS REPORT

Every year, the USC Annenberg School for Communication and Journalism takes a fresh look at the topics and trends shaping the future of the Public Relations industry. Each time we survey professionals working in the field and students planning to, we discover new insights into what makes PR one of the most dynamic professions in the universe. This year was no exception as we examined the impact of communication technology – what it means for the industry, academia and society.

THE FUTURE

FRED COOK
Director, USC Center for Public Relations

My boss and mentor for 30 years, Al Golin, loved telling colorful stories about how he started out in Public Relations. He would remind us of the days when he would bang out a press release on his Remington typewriter, walk across Michigan Avenue and hand deliver it to a friendly reporter in the newsroom of the *Chicago Tribune*. If the story ran, Al's secretary would clip it out of the newspaper and send it to the client with a handwritten note saying how great it was.

Sixty years later, his stories seem quaint. Typewriters are antiques. Press releases are endangered. Reporters are robots. And the Tribune Tower has been converted into condos.

Technology has dramatically transformed the communication profession. In the beginning, the pace of change was gradual. Every few years, a new technology would replace the older version, sometimes result-

ing in greater efficiency and speed. If you knew how to type an email on a Blackberry, you could manage it on an iPhone, with a little help from spellcheck.

Today, technology changes so rapidly that it's hard to keep up. Every day, a new app, device or platform is piled onto the growing tech stack available to media, marketers and communicators. Like it or not, our future success relies upon our ability to utilize these new tools for analyzing complex data, engaging diverse audiences and measuring the impact of our campaigns at every step of the customer journey.

But there are many questions. Which tools should we invest in? Who is responsible for choosing them? Should we build them or buy them? How will they improve our work? Will they really grow our business? How will we teach people to use them? And ultimately, how will they impact society?

Our mission at the USC Center for Public Relations is to shape the future of the PR industry and those who will lead it. Understanding the latest tools of our trade is an important part of that future. To answer some of those questions, we heard from 210 CEOs, 1,583 Public Relations professionals and 378 students in the U.S. and around the world. We hope this report shines a little light on where we're headed.

GOALS

Typically, we survey PR professionals and PR students for our annual *Global Communications Report*. This year we added another very important audience—CEOs—to determine where they think their company's communication efforts should be focused. Working with *Chief Executive* magazine, we questioned more than 200 business leaders who run small, mid-size and large organizations across the U.S. We compared their answers with those of PR professionals to identify alignments and gaps.

First, we asked them about their most important communication goals. Forty-four percent of CEO respondents state their most important communication goal for 2019 is to sell their products and services, while 39% say their primary goal is to differentiate their company's brand from the competition. In contrast, virtually no one stated their most important communication goal was shaping their company's position on social issues.
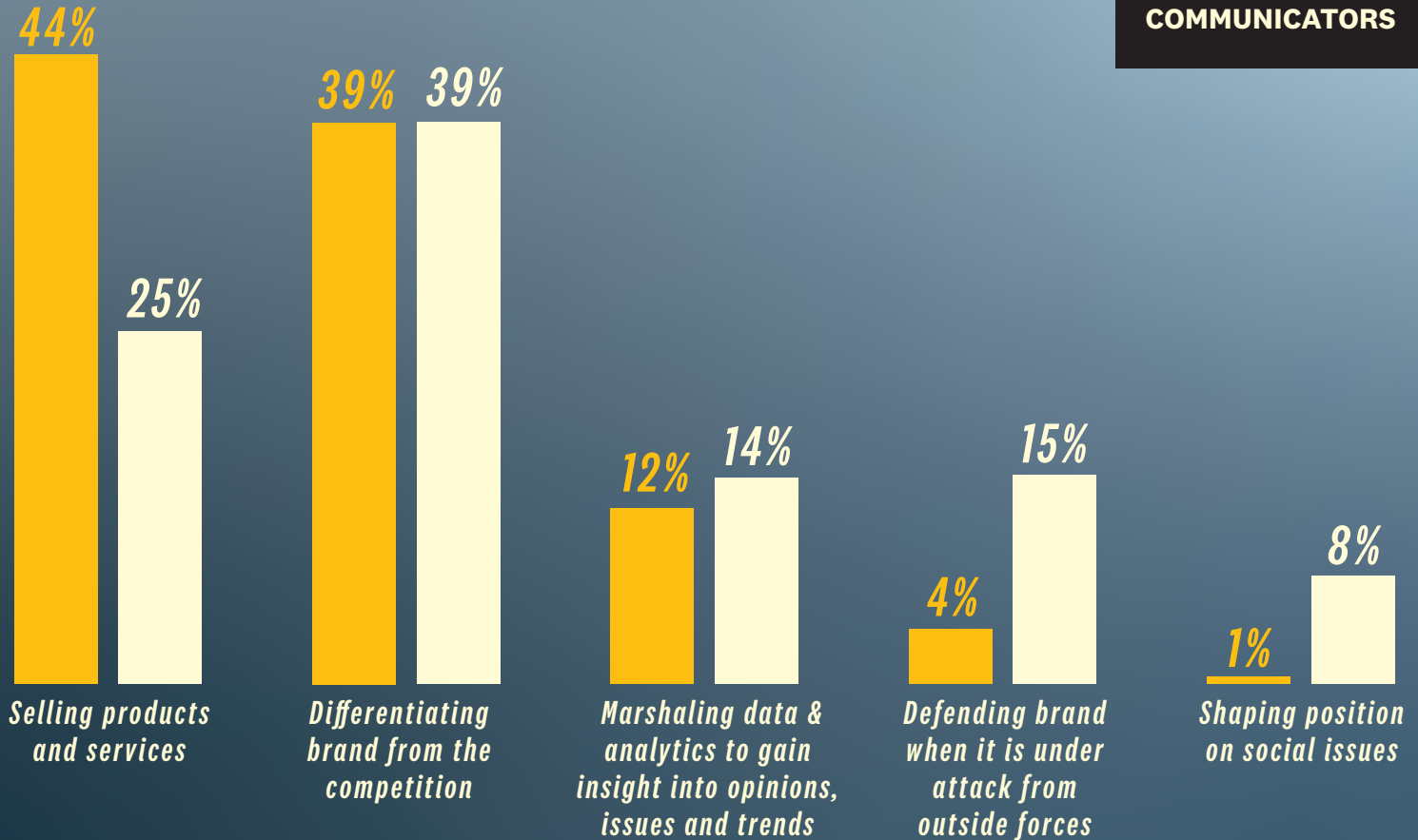
When we ask corporate communications professionals, who often report to the CEO, 39% agree that differentiating the brand is important, just the same as CEOs. But only 25% report that sales is their highest priority. Not surprisingly, communicators are more focused on defending reputation and shaping opinion because that is often their responsibility.

Interestingly, neither group places a huge priority on marshaling data and analytics, which is at the heart of what technology does. Data and analytics are a means for building both brand and sales, and new technology needs support from the top if it's going to be effective.

Of the following communications goals, which is the most important for your organization in the year ahead?

CEOs

IN-HOUSE COMMUNICATORS

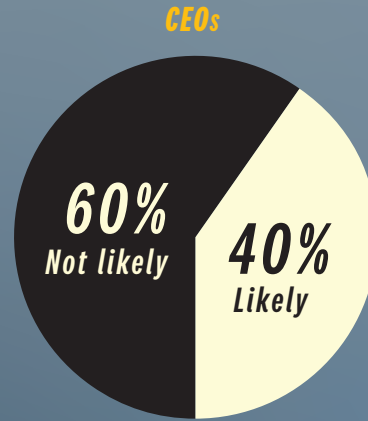|	CEOs	In-House Communicators
Selling products and services	44%	25%
Differentiating brand from the competition	39%	39%
Marshaling data & analytics to gain insight into opinions, issues and trends	12%	14%
Defending brand when it is under attack from outside forces	4%	15%
Shaping position on social issues	1%	8%

At a time when high-profile corporations like Nike and Levi Strauss are speaking out about societal issues, it's fascinating to discover that the majority of U.S. CEOs have little interest in being part of that conversation. When asked which societal issue they planned on speaking publicly about, 60% of the CEOs surveyed said they were unlikely to communicate about any social issue in 2019.

The percentages are reversed for in-house communicators, which means they are either out of sync with their bosses, or they realize their employees and customers are demanding to know where their companies and brands stand on the issues they're passionate about.

For CEOs who do plan to speak out, the most pressing topics are data

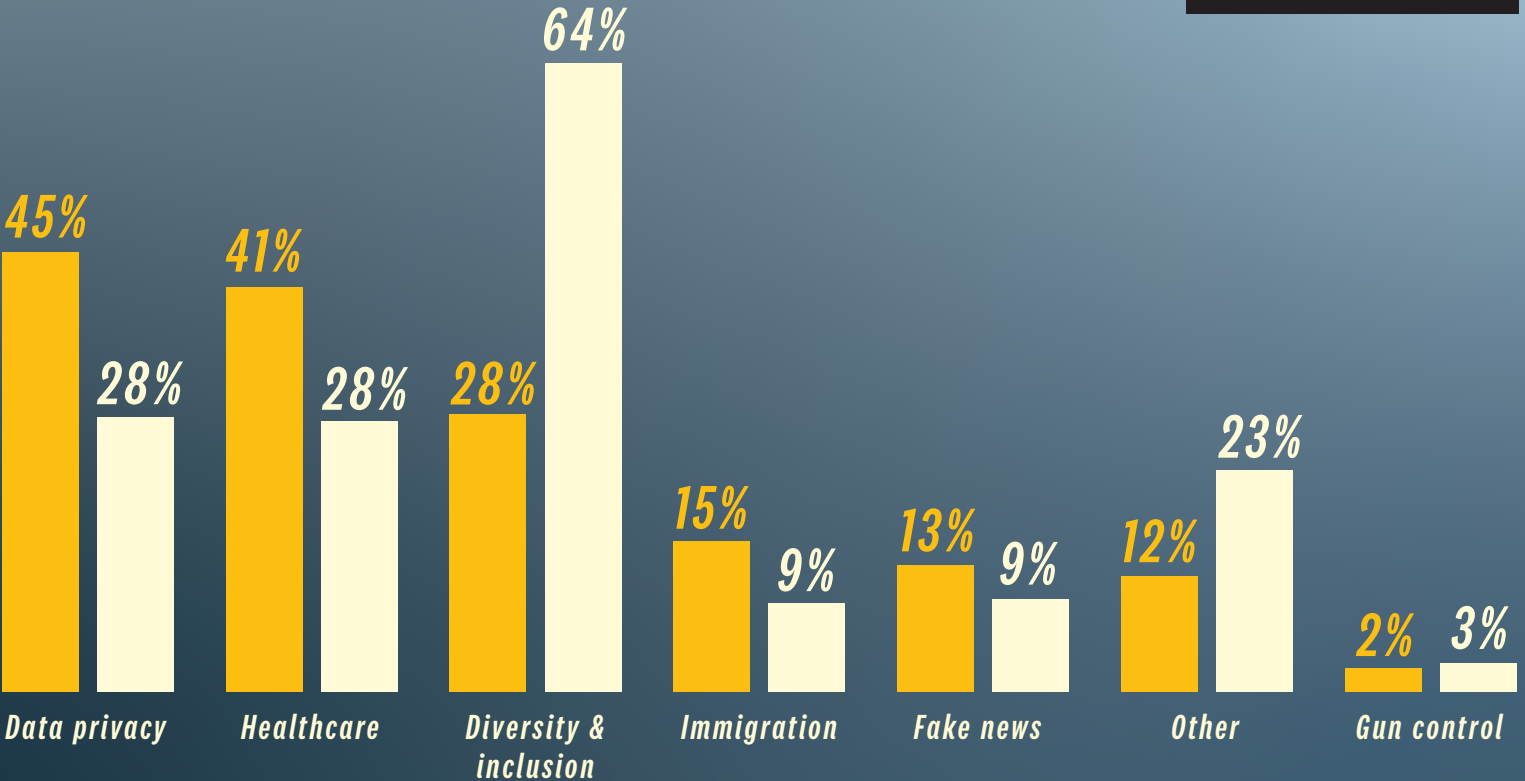## Are you likely to communicate about societal issues?

CEOs

60% Not likely

40% Likely

IN-HOUSE COMMUNICATORS

31% Not likely

69% Likely
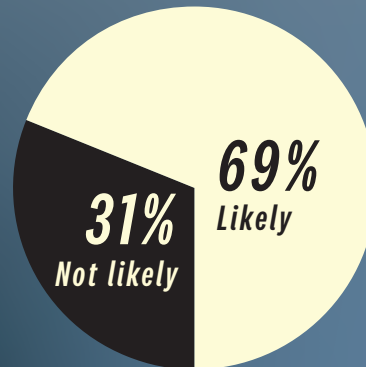
privacy (45%), healthcare (41%) and diversity and inclusion (28%). More controversial issues like immigration (15%) fake news (13%) and gun control (2%) ranked much lower.

Communicators pick the same topics but place a much higher priority on diversity and inclusion (64%), which remains an important focus of the overall PR industry. In the "other" category, many mentioned education as an issue they will address. Overall, it is fair to say that today's senior executives are more focused on issues that directly affect their business than those that impact society. CCOs understand that mandate but take a broader view of their responsibilities.

Of those likely to communicate about societal issues, these are the most relevant topics

CEOs

IN-HOUSE COMMUNICATORS

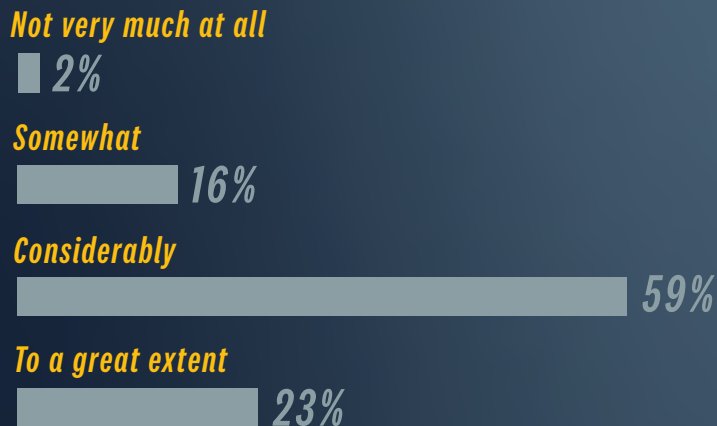| Topic	CEOs	In-house communicators
Data privacy	45%	28%
Healthcare	41%	28%
Diversity & inclusion	28%	64%
Immigration	15%	9%
Fake news	13%	9%
Other	12%	23%
Gun control	2%	3%

CHANGE

Change remains the only constant in the PR profession. Again this year, the vast majority of global PR professionals (66%) predict the coming years will bring considerable or drastic change. Agency executives (72%) are more likely to expect substantial change than their internal counterparts (60%). Students are somewhere in between (66%). PR professionals agree that many factors will disrupt how we communicate, but one dominates – Technology. A whopping 83% of global communicators believe technological innovations will be a significant driver of change in the industry, which is the reason we conducted this study.

Expected change in the PR industry over the next five years

AGENCY **IN-HOUSE**

- Some: 6% / 8%
- Moderate: 22% / 32%
- Considerable: 61% / 53%
- Drastic: 11% / 7%
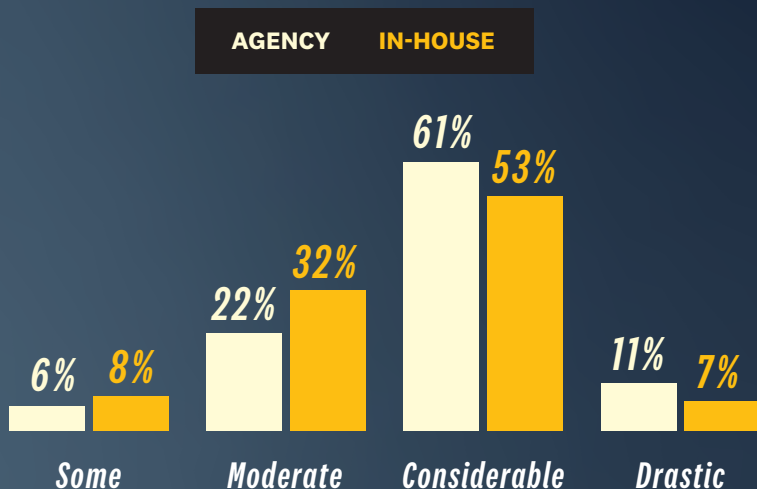
To what extent will technological innovations drive this change?

- Not very much at all: 2%
- Somewhat: 16%
- Considerably: 59%
- To a great extent: 23%

As we have seen in the past two years, the integration between PR and marketing is another important trend, according to almost 90% of survey respondents. That integration is pushing PR to adopt new technology already being used in the advertising world. Competition always spurs innovation, and right now PR is playing a little catch-up. The merger of marketing and PR is also causing structural changes inside organizations, agencies and holding companies, some of whom believe integration is more important than independence. Another result of this integration: PR agencies are hiring more creatives and planners from advertising agencies.

Over the next five years, how will PR's relationships with marketing change?

1%
WILL BECOME A LOT
LESS INTEGRATED
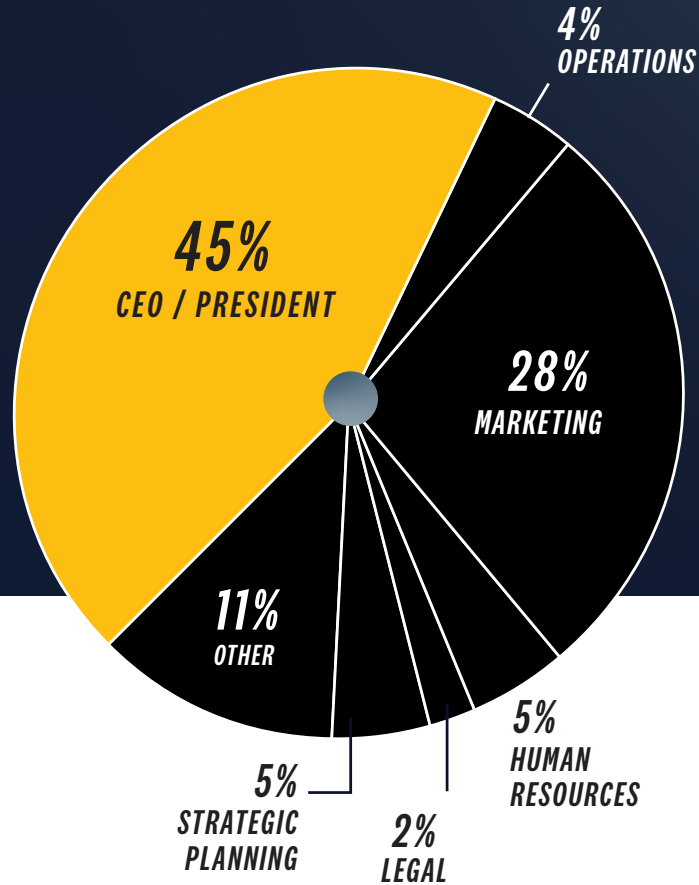
2%
WILL BECOME SOMEWHAT
LESS INTEGRATED

8%
STAY THE SAME

39%
WILL BECOME SOMEWHAT
MORE INTEGRATED

**51%**
WILL BECOME A LOT
MORE INTEGRATED

Which of the following terms best describes the reporting line of your Communications department?

- 45% CEO / PRESIDENT
- 4% OPERATIONS
- 28% MARKETING
- 11% OTHER
- 5% STRATEGIC PLANNING
- 2% LEGAL
- 5% HUMAN RESOURCES

What person or division does your agency normally report to inside of your clients' organizations?

- 37% CORPORATE COMMUNICATIONS
- 9% BRAND MGMT
- 19% MARKETING
- 27% CEO
- 5% OTHER
- 1% LEGAL
- 2% HUMAN RESOURCES
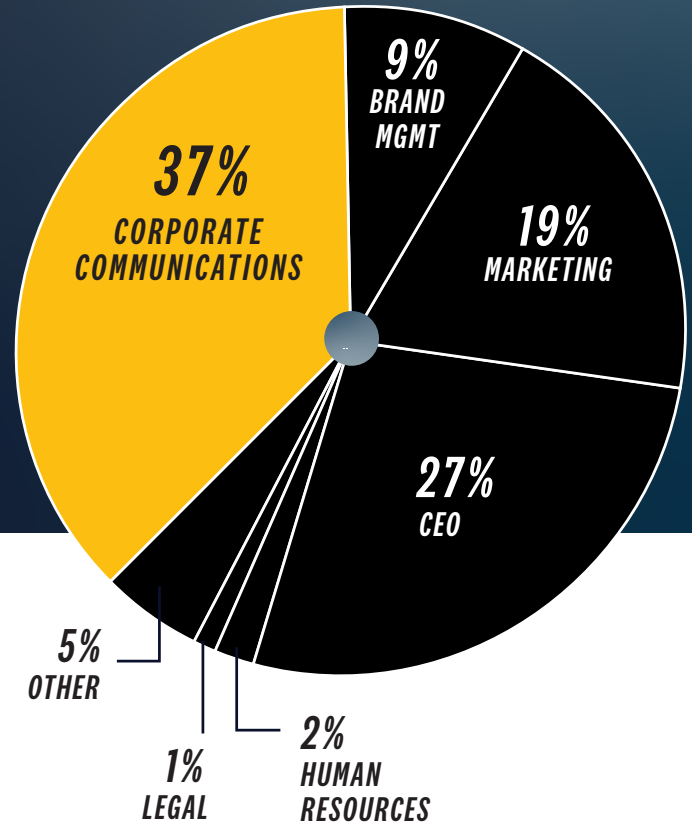
Despite all this change, many PR professionals surveyed believe their revenue and their budgets will grow over the next 12 months, which will benefit everyone. Agency executives (69%) are less optimistic than they were last year at this time, when 86% predicted growth. But they're more optimistic than their corporate counterparts. Only 32% of in-house communicators project their communications budget will grow in 2019, compared to 50% last year. Agencies will need to make up the difference with marketing dollars.

In the coming year, do you predict the net revenue for your company will decrease, stay the same or increase?

AGENCY

	DECREASE	STAY THE SAME	INCREASE
'18	5%	9%	86%
'19	5%	26%	69%

In the coming year, do you predict the budget for your department will decrease, stay the same or increase?

IN-HOUSE

	DECREASE	STAY THE SAME	INCREASE
'18	26%	24%	50%
'19	15%	53%	32%
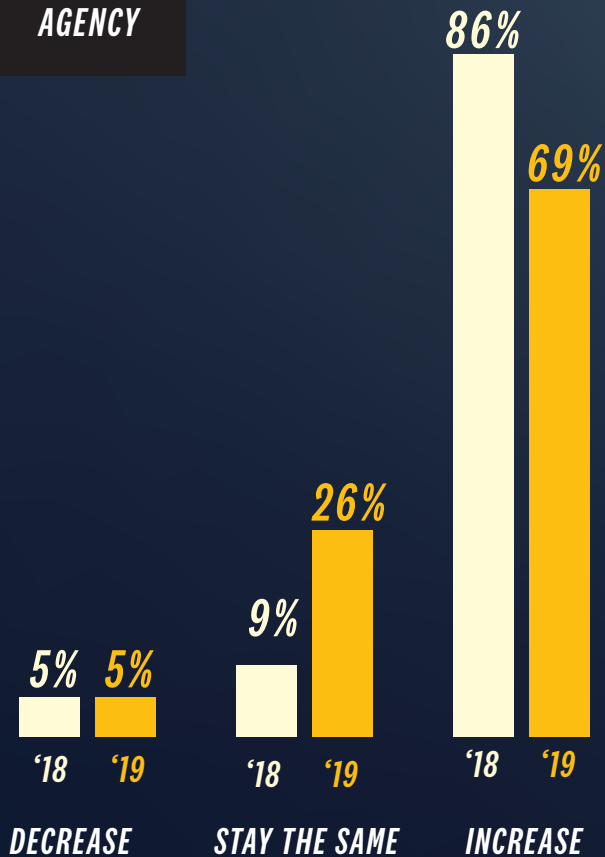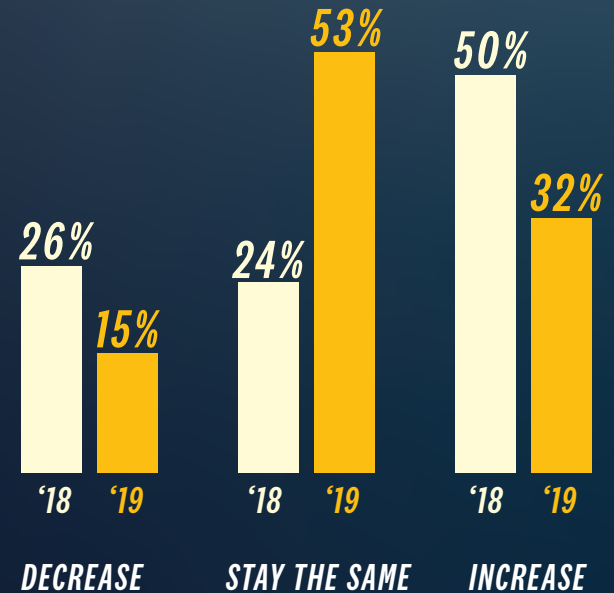
MEDIA

The channels for delivering information are also changing. Asked what communications strategies would be most valuable to their companies in the future, 38% of the U.S. CEOs surveyed chose social media and online influencers (**shared media**), slightly ahead of original content distributed through their company's channels (**owned media**) at 36%.

Traditional media coverage (**earned media**) ranked third at 14%, while a mere 12% say advertising (**paid media**) is their most valuable means of communication.

Although in-house communicators agree that owned media will be an important communications channel in the future, they place a higher premium on earned than the CEOs. The biggest gap between in-house pros and CEOs is the importance of social media.
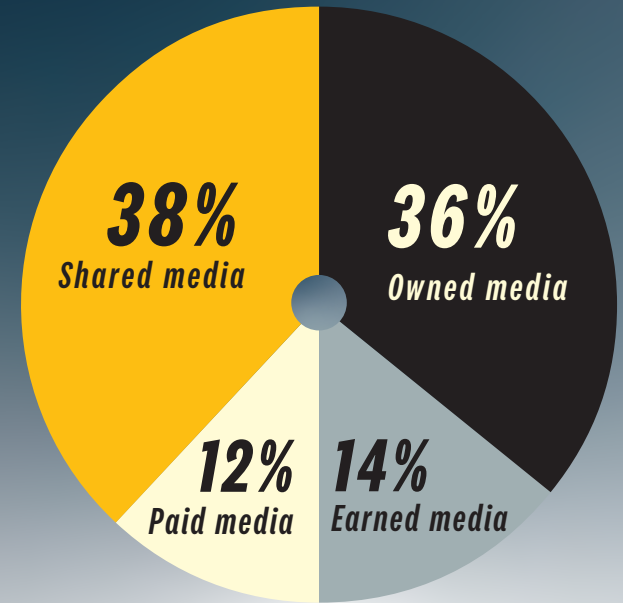
Agency budgets are even more reliant on earned than the in-house communicators, which may often be the reason agencies are hired. While their revenue from

this expertise will decline, media relations is predicted to remain agencies' dominant revenue generator for the foreseeable future.
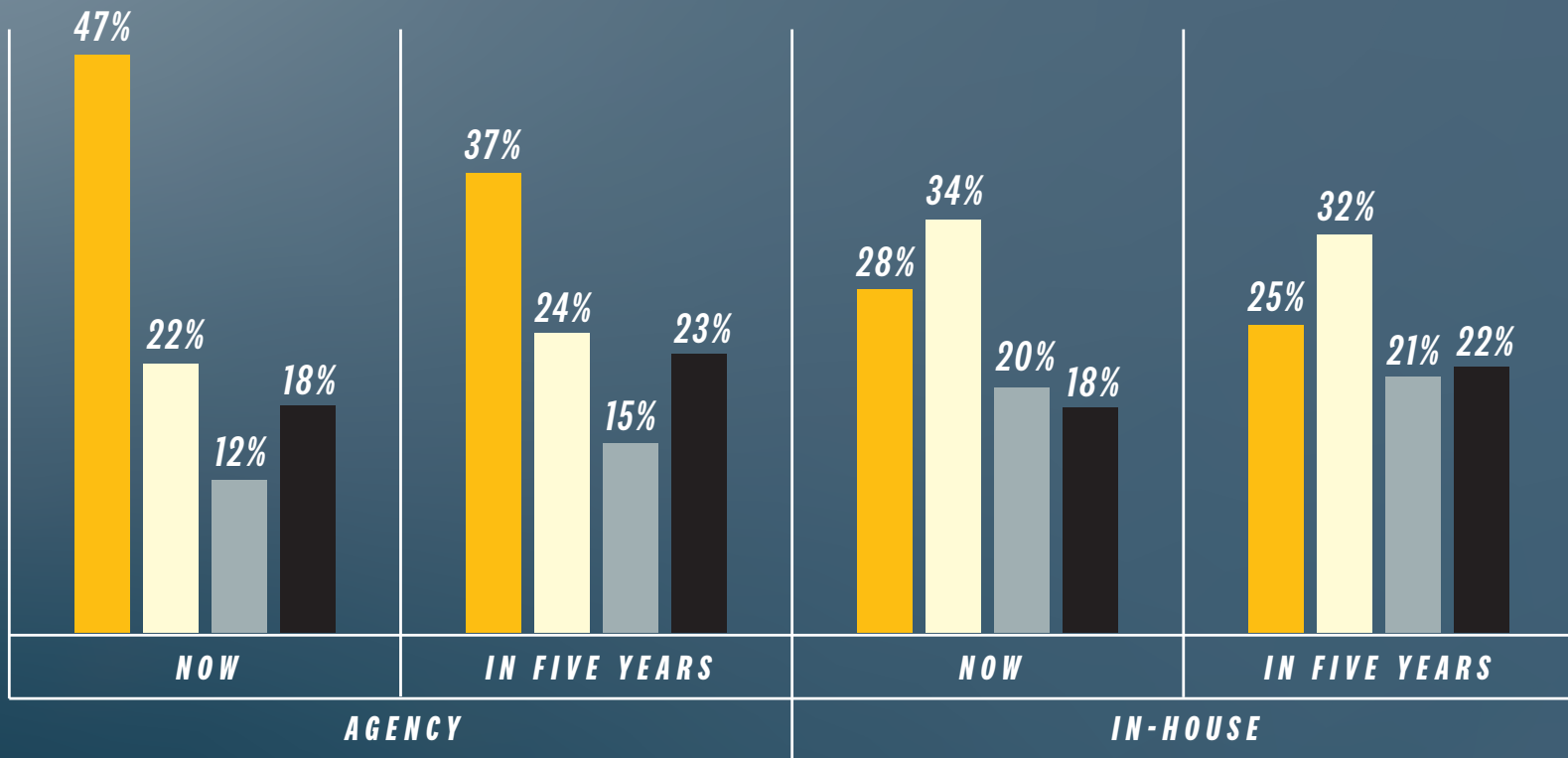
On the surface, the paid piece seems contradictory – becoming less important for CEOs, while more important for communicators. The discrepancy is based on what exactly is being paid for. When CEOs hear paid, they think advertising, while PR people think social, where earned is bolstered through paid support.

Shared media: social media and online influencers
Owned media: original content distributed through company channels
Paid media: advertising and branded content
Earned media: traditional media coverage

We asked CEOs, which one of the following communication strategies do you feel will be the most valuable to your company in the future?

38%
Shared media

36%
Owned media

12%
Paid media

14%
Earned media

EARNED **OWNED** **PAID** **SHARED**

AGENCY

NOW
- 47% EARNED
- 22% OWNED
- 12% PAID
- 18% SHARED

IN FIVE YEARS
- 37% EARNED
- 24% OWNED
- 15% PAID
- 23% SHARED

IN-HOUSE

NOW
- 28% EARNED
- 34% OWNED
- 20% PAID
- 18% SHARED

IN FIVE YEARS
- 25% EARNED
- 32% OWNED
- 21% PAID
- 22% SHARED

What percentage of your media revenue is generated from work in these channels?

What percentage of your media budget is devoted to work in these channels?

Students are in tune with CEOs. They're much more prepared to deal with social media than the alternatives. That's where they live, that's what they learn, and that's where they'll work. They need to pay more attention to paid. Owned also needs emphasis. And as a profession, we must prevent media relations from becoming a lost art. In every channel, earned-first will always be the most effective way to tell a story.

How prepared do students feel to work within these media channels?

70%
SHARED

56%
EARNED

53%
PAID

50%
OWNED

62% AGREE
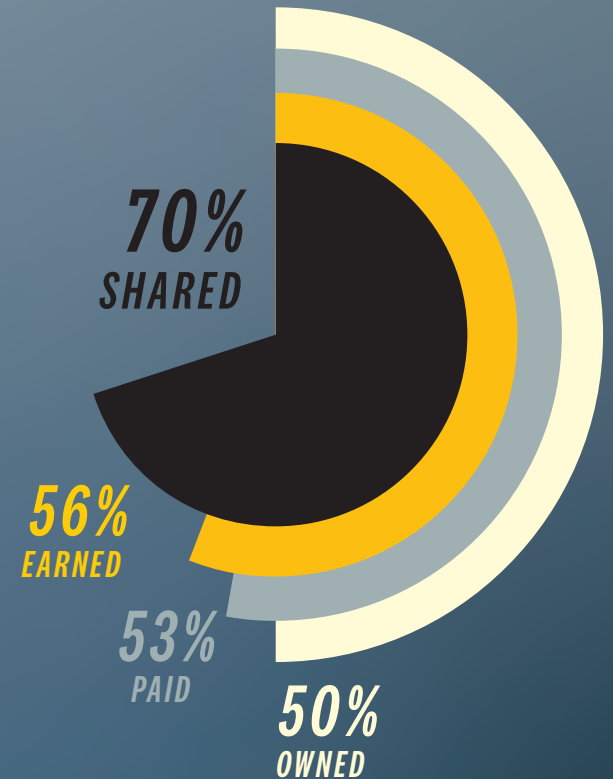
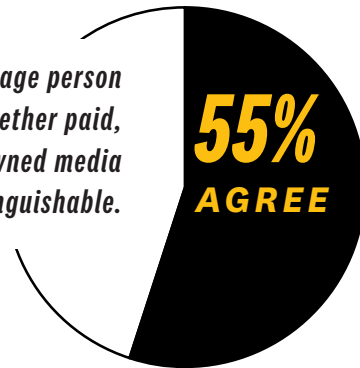*In five years, the average person will **not be able** to make a distinction between paid, earned, shared and owned media when they are consuming information.*

As all these channels collide, the *PESO* distinction is becoming irrelevant to consumers. As we have seen in previous years, 62% of communications experts predict future consumers won't be able to distinguish between a piece of information written by a reporter, paid for by a brand, or shared by an influencer. Another 55% believe they won't even care where this information is coming from. If this is true, it's unlikely they will detect a piece manufactured by a machine.

55% AGREE

*In five years, the average person will **not care** whether paid, earned, shared and owned media are clearly distinguishable.*

PR professionals recognize that artificial intelligence is altering the media landscape, but they don't realize how quickly it's happening. They predict about 35% of financial reporting will be written by robots in five years, but Bloomberg reports that 30% of their financial stories are already developed by AI. Students predict a greater percentage of robot journalism in the future, but even they may be surprised by the pace of change.

Bloomberg uses a system called Cyborg, which according to *The New York Times* is able to assist reporters in churning out thousands of articles on companies' earnings each quarter. The program can dissect a financial report the moment it appears and spit out an immediate news story. In addition to covering earnings for Bloomberg, robots report on minor league baseball for The Associated Press, high school football for *The Washington Post* and earthquakes for the *Los Angeles Times*. These machines aren't yet replacing reporters, but they are helping them modernize the more mundane aspects of their jobs.

As AI technology spreads, the PR industry will learn how to write press releases that optimize algorithms to ensure the most accurate, positive outcome possible (by the way, fancy diagrams don't compute). In a few years, PR robots may pitch media robots, but will they meet for lunch?

In five years, what percentage of news content do you predict will be written by Artificial Intelligence?

PR PROFESSIONALS   **STUDENTS**

Financial reporting
35%
42%

Sports coverage
30%
35%

Business coverage
26%
37%

Political coverage
21%
30%

General interest coverage
28%
35%

TECH

Tech is also important at the top of the organization. Asked what aspects of their communications they would like to advance though future technology, the vast majority of CEOs stuck with tangible business goals. One-third chose customer experience optimization as a primary objective, which opens a whole new area of opportunity for PR professionals – CXPR, where discrete communication is built into each interaction a customer has with a brand.

Customer experience was followed by audience targeting (22%) and measurement of results (22%), which are the beginning and end of that journey. Less clear-cut activities like reputation tracking, trend prediction and crisis management were chosen by fewer than 5% of the CEO respondents.

In-house communicators are also planning to marshal technology around the customer. Measuring results is their main objective for new technology, which may finally quantify the real impact of storytelling.

In the coming year, which of the following areas of communications would you most like to advance through the use of new technology?

CEOs

IN-HOUSE COMMUNICATORS

Area	CEOs	In-House Communicators
Crisis management	1%	3%
Content creation	12%	18%
Audience targeting	22%	20%
Customer experience optimization	33%	18%
Measurement of results	22%	21%
Reputation tracking	5%	14%
Trend prediction	4%	6%
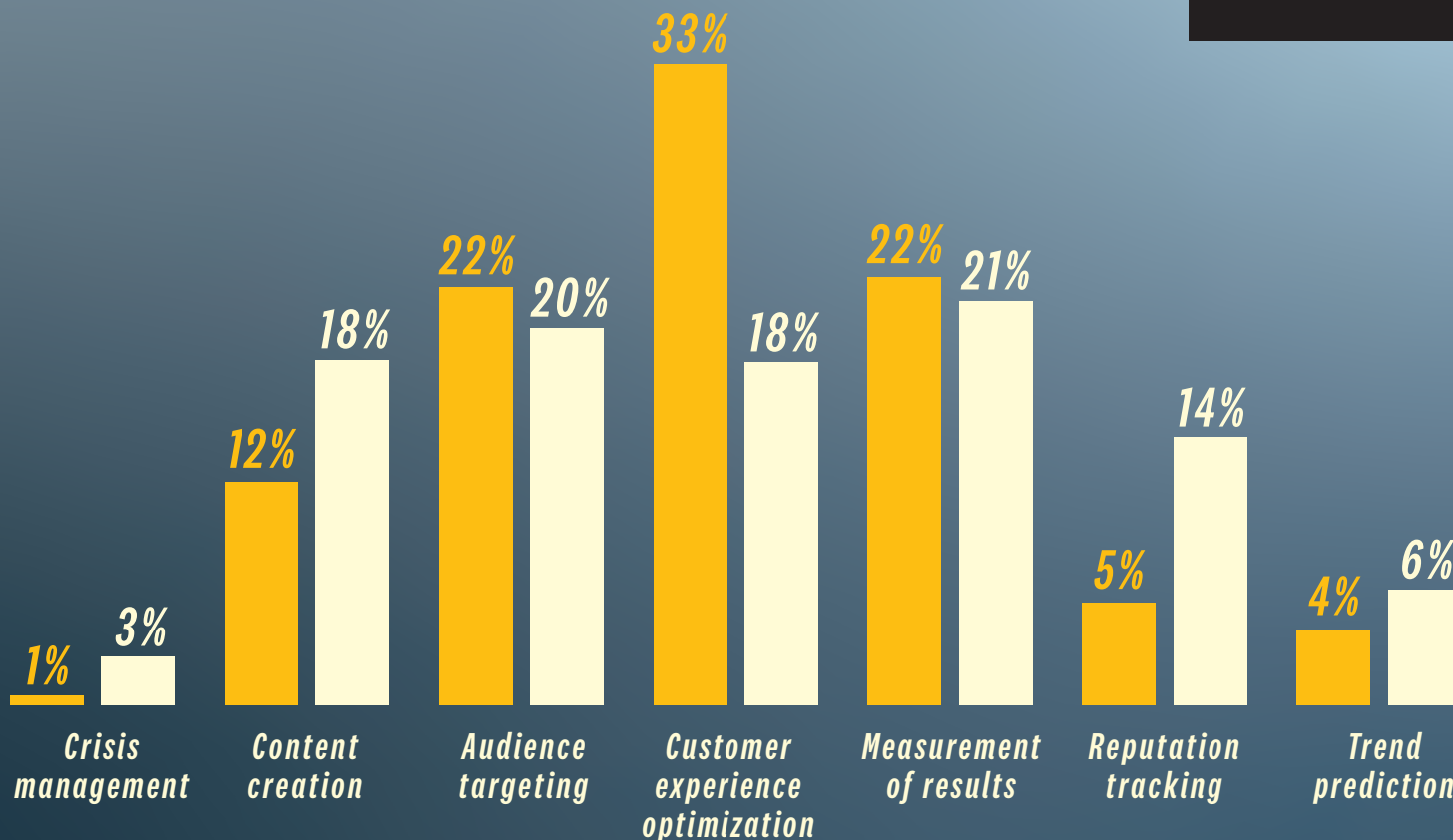
What is the primary driver for technology use within your agency / department?

PR PROFESSIONALS

Pressure to deliver measurable ROI

28%

Integration of communications and marketing

25%

Expansion of the number of media channels

19%

Increasingly complex competitive environment

18%

Expansion of the amount of consumer data

7%

Other

4%

Marketing and measurement continue to surface as the key factors in driving the adoption of new technology. The competitive environment is also a big factor for PR agencies who now regularly compete with ad agencies, digital firms and management consultants, all with deep roots in tech.

How do technologies get introduced to your agency / department?

IT staff
15%
28%

Digital practice / department
35%
34%

Outside vendors or consultants
35%
49%

Senior management
48%
26%

Junior team members
21%
26%

Other
9%
12%

Where does new technology come from? It appears that the main source for corporate communicators is outside vendors, which are multiplying like megabits. Senior management plays an important decision-making role, especially on the agency side (48%). The IT department seems to be more about maintaining than introducing tech, while digital experts and junior staff are the ones who really know what's hot and what's not. In the "other" category, agency executives mentioned that their clients also introduced technology to their firms.

How would you rate your company's current ability to use the latest technology to enhance the effectiveness of its communications?

AGENCY

IN-HOUSE COMMUNICATORS

CEOs

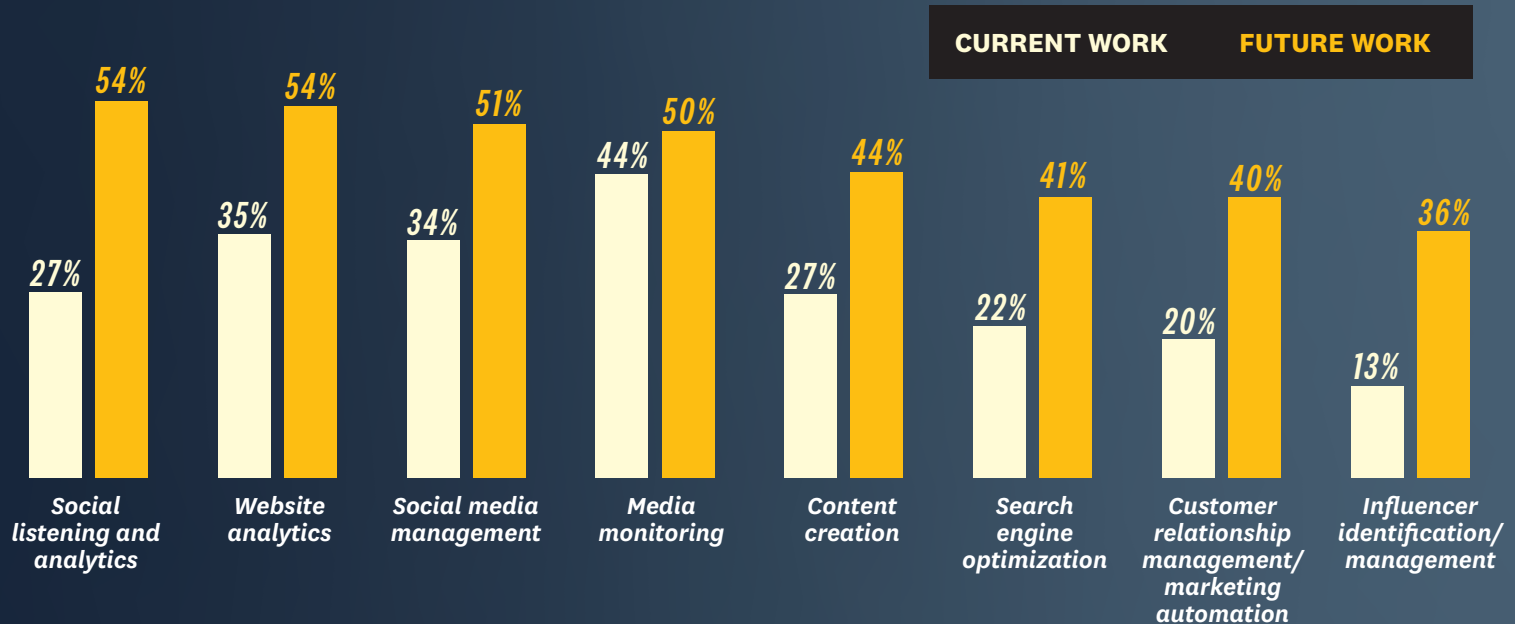|	Excellent	Good	Average	Below Average
Agency	13%	48%	29%	9%
In-House Communicators	6%	35%	42%	16%
CEOs	10%	44%	39%	7%
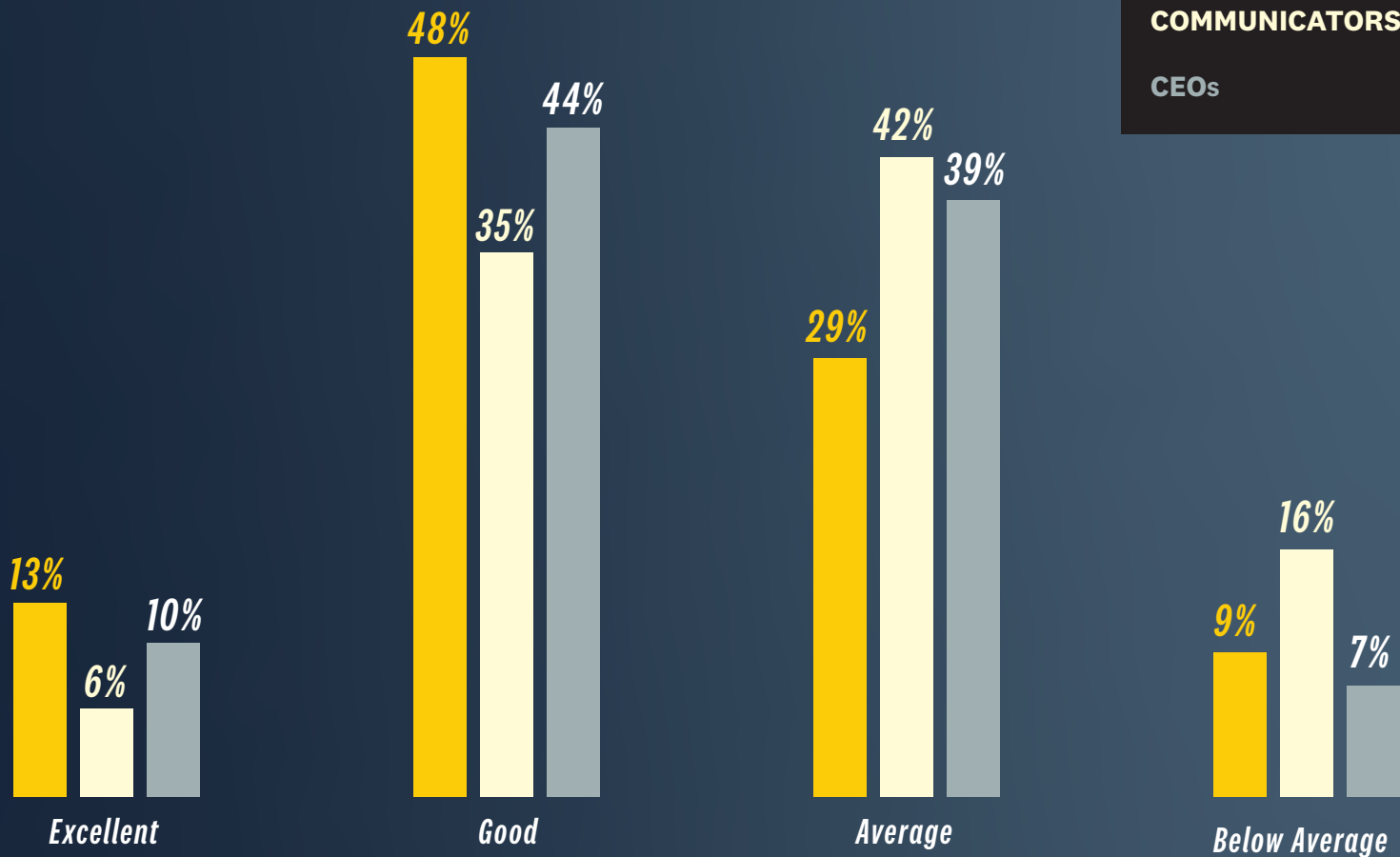
It's clear that technology has become a critical component of corporate communications for today's CEOs, and many are relatively pleased with the results. Fifty-four percent of CEOs surveyed rate their company's use of the latest communication technology as excellent or good, with 46% admitting to average or below. In-house communicators give themselves significantly lower scores, while agencies think they are more advanced.

All three groups view new technology as a valuable investment in achieving their future business goals, but experience says we have a long way to go.
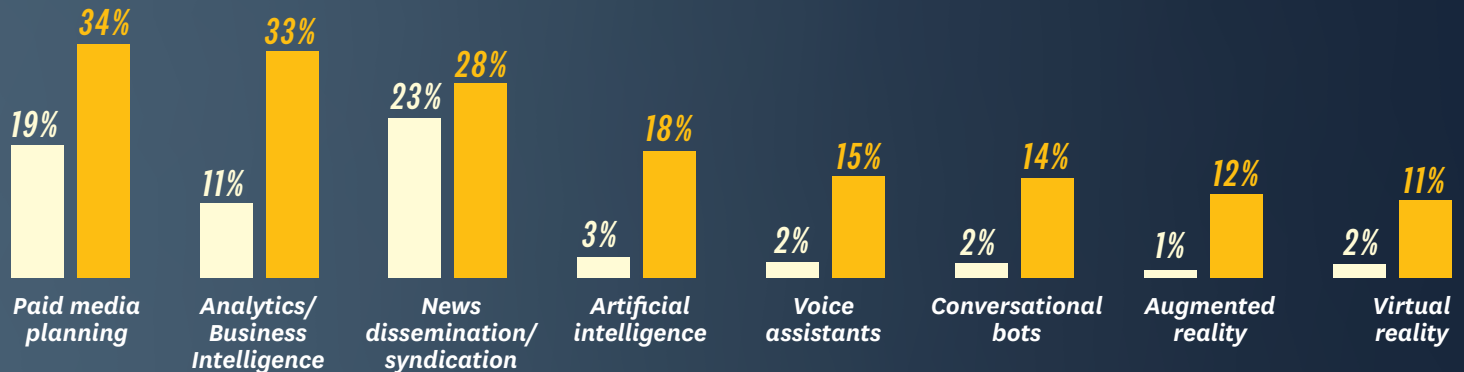
The number of tools available to the PR professional is growing exponentially. But few are viewed as very important to the communications work currently being done. In fact, media monitoring services like Cision and Zignal Labs, which have been around for years, are ranked as important tools being used today and tomorrow. By contrast, newer technologies – like

Virtual Reality, Augmented Reality and Voice Assistants – are not considered important to current work by roughly two-thirds of PR executives. Customer Relationship Management, Search Engine Optimization and Web Analytics fall somewhere in between, and the importance of those tools is expected to increase dramatically in the coming years.

	CURRENT WORK	FUTURE WORK

Tool	Current Work	Future Work
Social listening and analytics	27%	54%
Website analytics	35%	54%
Social media management	34%	51%
Media monitoring	44%	50%
Content creation	27%	44%
Search engine optimization	22%	41%
Customer relationship management/ marketing automation	20%	40%
Influencer identification/ management	13%	36%

Social media tools show the biggest jump in importance from the present to the future, which tracks with the growing importance of that media channel. Over half of the respondents expect social listening and influencer identification platforms will be very important tools for PR professionals in the future.

Interestingly and perhaps alarmingly, only 18% of all PR executives believe artificial intelligence, which is being heralded as the next big thing, will be a very important technology for them in the future. But that may be because only 3% claim to be very knowledgeable about potential AI applications.

Category	Present	Future
Paid media planning	19%	34%
Analytics/Business Intelligence	11%	33%
News dissemination/syndication	23%	28%
Artificial intelligence	3%	18%
Voice assistants	2%	15%
Conversational bots	2%	14%
Augmented reality	1%	12%
Virtual reality	2%	11%

Most PR people are confused by the concept of **artificial intelligence**. Futuristic visions of "Terminator," "Blade Runner" and "Ready Player One" can be scary, but that world is a long way off. Today, without even realizing it, we're using AI every day for many mundane activities: asking Siri about the weather, receiving a recommendation from Amazon or requesting an Uber X. These tasks are made possible by machine learning. For the communications profession, AI is mainly an analytics tool that allows us to do quantitative analysis of massive amounts of data – with the hope of making our strategies smarter, our results better and our jobs easier. Most of the tools listed in the glossary of this report are built on some form of artificial intelligence, and they will profoundly change the way we think and work.

The PR industry will benefit from artificial intelligence, but we must also be aware of its drawbacks. Open AI, a non-profit research organization founded by Elon Musk and Sam Altman, recently developed a transformer-based language model called GPT-2, which is trained to predict the next word based on all the previous words

in a text. Given a simple prompt, the model is capable of generating a page or two of human-quality text. Despite the technology's potential business applications, Open AI has declined to release the latest version to the public, citing a concern that it might be used to *"develop deceptive, biased or abusive language at scale."* Meanwhile, Gltr, an MIT-IBM Watson Lab/ Harvard NLP joint project, analyzes texts and predicts whether it was written by a machine.
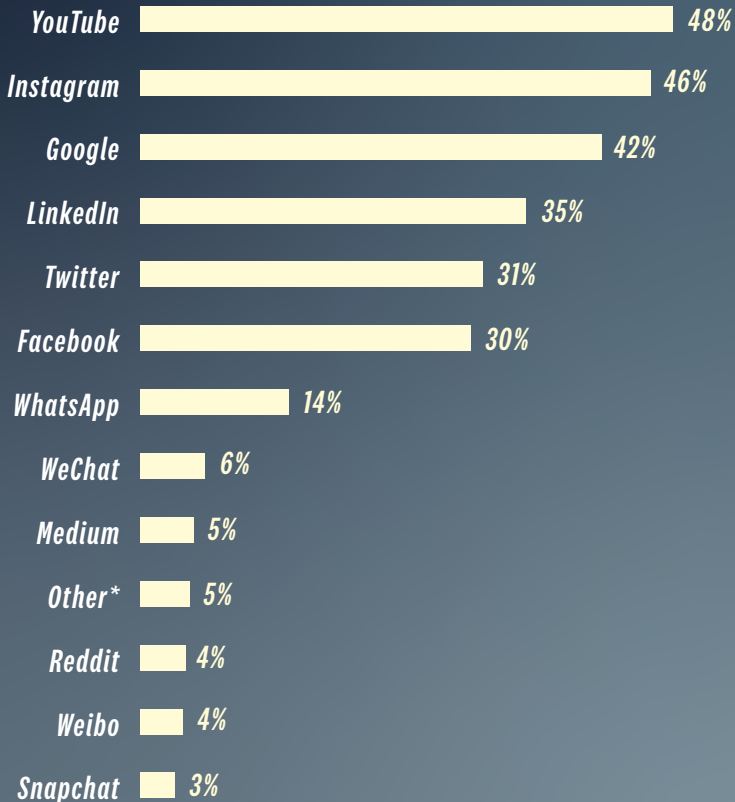
Artificial Intelligence will be very important in future PR work...

■ *Agree*

18%

53%

PR PROFESSIONALS

STUDENTS
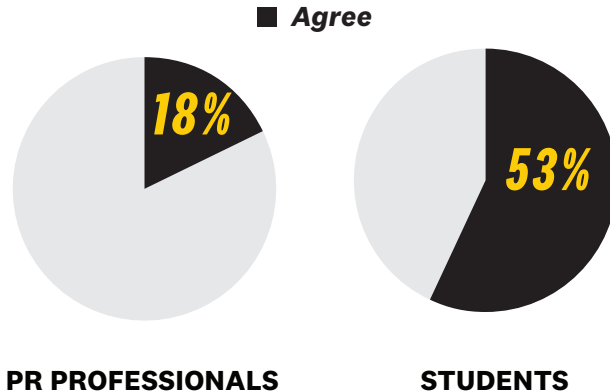
How knowledgeable are you about future applications of Artificial Intelligence in communication?

40%
Not at all

46%
Somewhat
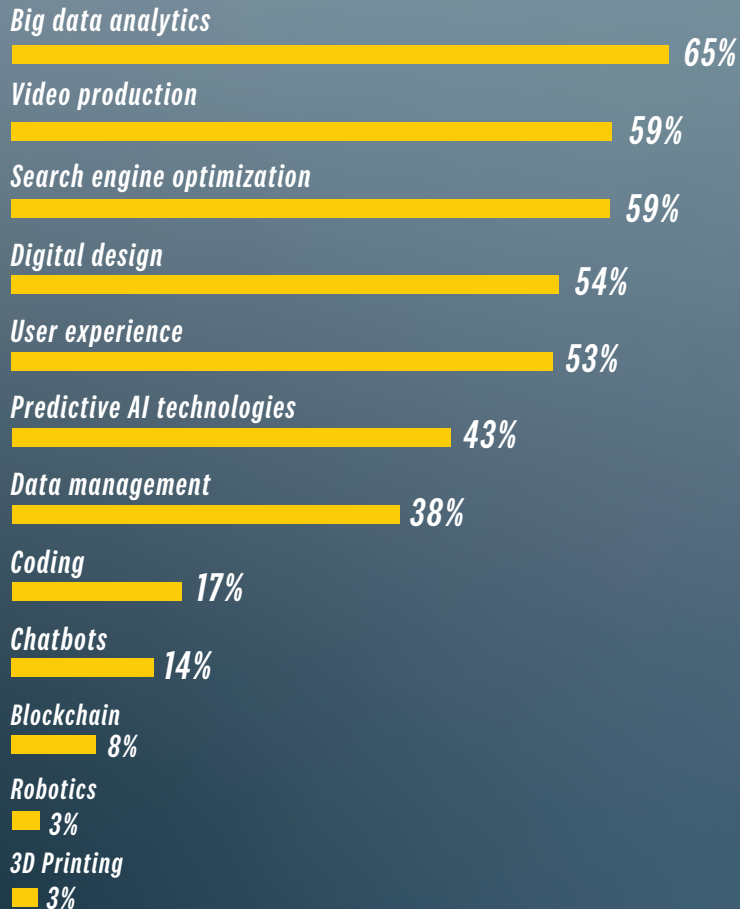
3%
Very

11%
Moderately
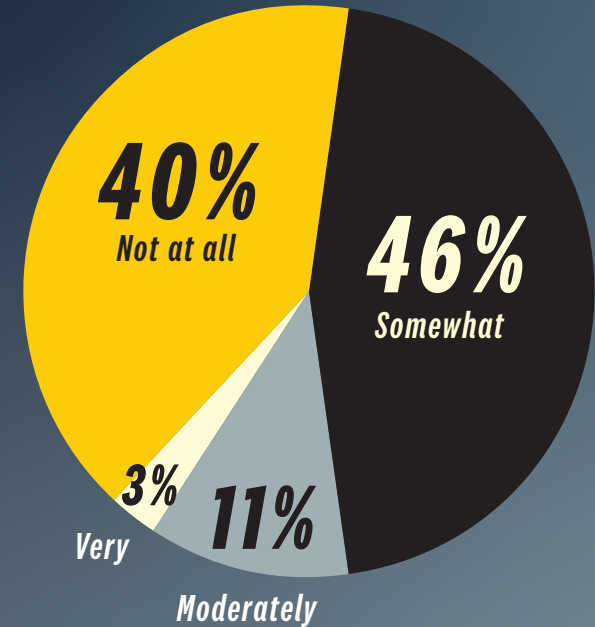
In the next five years, which of the following communication platforms will be the most important to enhancing the effectiveness of communication strategies?

Platform	Percentage
YouTube	48%
Instagram	46%
Google	42%
LinkedIn	35%
Twitter	31%
Facebook	30%
WhatsApp	14%
WeChat	6%
Medium	5%
Other*	5%
Reddit	4%
Weibo	4%
Snapchat	3%

When it comes to communications platforms that will be most important in the future, pictures tell the story. YouTube and Instagram, whose popularity are based on photographs and videos, are projected to be the big winners in an era of decreasing attention span. Google, an AI leader offering a portfolio of technology tools, is not far behind. While visual experiences will rule, text-based platforms may not: A mere 5% feel Medium will be an important communications platform in five years. Due to the greater number of responses from North America and Europe addresses, it's certain that WeChat and Weibo are under-indexed in these totals.

Those who chose "other" predict the dominant platform of the future has yet to be invented!

What technology skills will future PR/communications professionals need to be successful?

Big data analytics
65%

Video production
59%

Search engine optimization
59%

Digital design
54%

User experience
53%

Predictive AI technologies
43%

Data management
38%

Coding
17%

Chatbots
14%

Blockchain
8%

Robotics
3%

3D Printing
3%

As the PR profession adopts new technology, PR professionals will need to adopt new skills. Machines may do the analysis, but intelligent humans will be required to translate data into actionable insights. Those insights will be expressed visually, which increases the need for production and design capabilities.

Contemporary undergraduate PR programs teach coding, analytics and video production, which means a stream of tech-savvy recruits are coming to the rescue. But the technology transformation must be initiated by corporate and agency leaders, who have the authority and the resources to make it a reality.
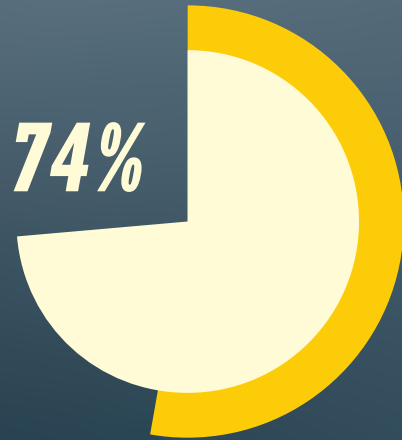
What impact will technological changes in media have on average citizens over the next five years?
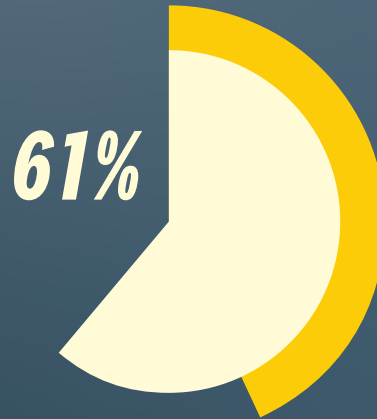
Technological changes in media will make average citizens...
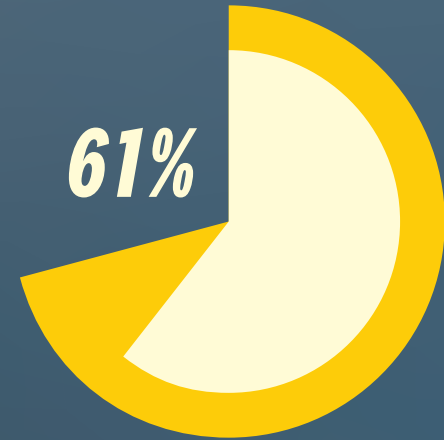
MORE POLARIZED

74%

53%

MORE MISINFORMED

61%

43%

MORE ENGAGED

61%

72%

PR professionals have a mixed view on the long-term impact communication technology will have on those who are on the receiving end of it. Sixty-one percent agree that the average consumer of information will become more engaged, which is a good thing. But the same percentage (61%) believe that their engagement will be based on misinformation, which is not a good thing. As a result, almost three-quarters (74%) see society becoming more polarized in the future, which seems impossible based on the divisiveness we are already experiencing today. Students are more optimistic: Only 43% predict the average citizen will be more misinformed and 53% say they will be more polarized.

These statistics highlight the power of communication technology, especially when employed to promote a controversial point of view or disseminate misleading information. Communications professionals have a profound obligation to use these new tools responsibly and to denounce those who do not.

Al Golin wasn't a fan of social media. He preferred high-touch to high-tech. He believed in building relationships face-to-face, rather than on Facebook. But there is no turning back. Technology is our future and tomorrow's leaders will embrace it. For a long time, we've championed the art of Public Relations. To remain relevant to our companies and our clients, we must combine that art with science.

At the same time, we need to remember that our job is to build relationships. Relationships between companies, brands and people. PR professionals have unparalleled insight, not shared by any other discipline, into the elements of human connection. We know how to listen and we know how to tell stories. Technology will enhance these skills, but it will never replace them.

In the next five years, how would you compare the importance of technology vs. human capital in the communication industry?

46%

23%

30%

24%

47%

31%

TECHNOLOGY WILL BE
MORE IMPORTANT

EQUAL IMPORTANCE

HUMAN CAPITAL WILL BE
MORE IMPORTANT
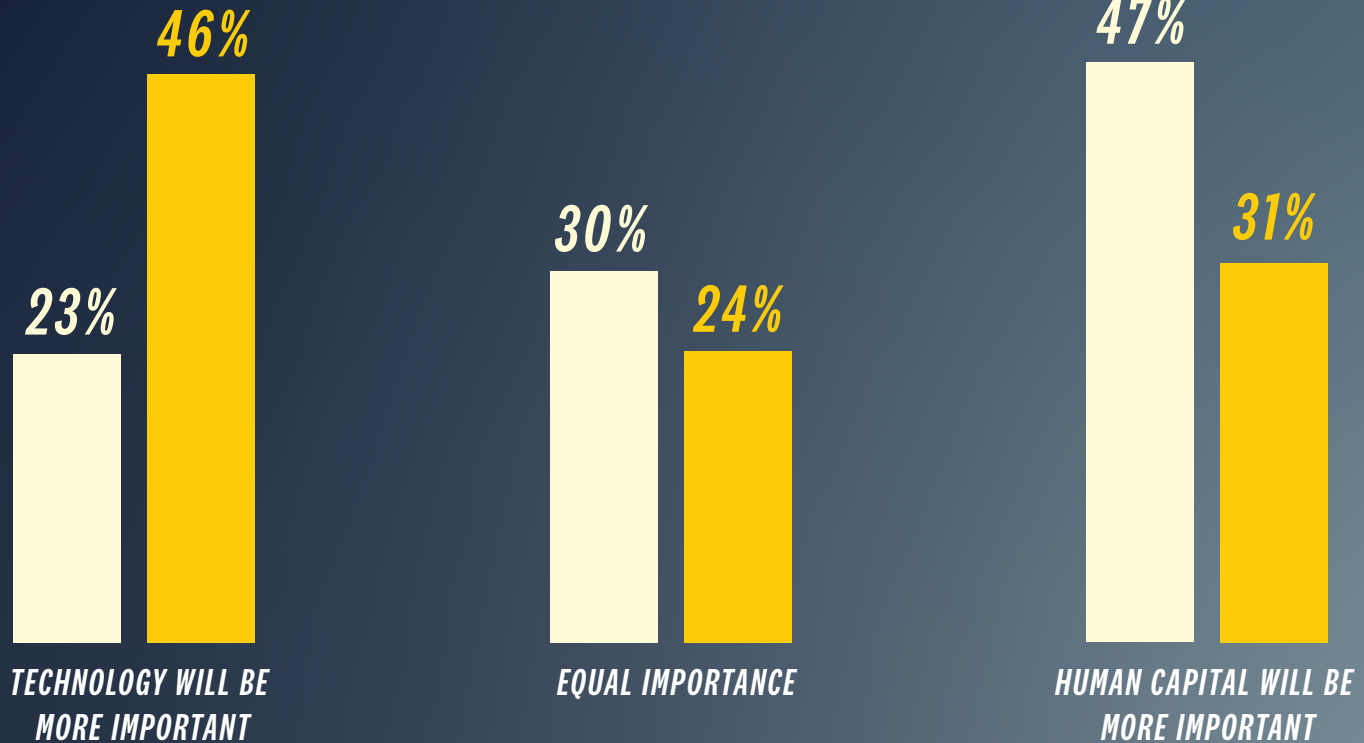
GLOSSARY

Glossary of companies cited in this year's Global Communications Survey. Definitions curated from online sources by Manuelita Maldonado (MSPR candidate); edited by Nirit Weiss-Blatt, Ph.D.

SOCIAL LISTENING AND AUDIENCE INTELLIGENCE

Brandwatch: AI-powered social media monitoring tool that offers business insights based on online conversations, and optimizes targeted influencer, content and paid social media campaigns. In October 2018, Brandwatch announced a merger with Crimson-Hexagon (below).

Crimson-Hexagon: AI-powered consumer insights company that analyzes audiences, tracks brand perception and detects market trends. This multilingual platform covers social networks, blogs, forums, news and public data sources.

Talkwalker: Social listening and analytics company that uses AI-powered technology to monitor online conversations and images across social networks, news websites, and blogs and forums. Its tool provides brand monitoring, competitive analysis, business intelligence, media response analysis, and early warning systems.

TrendKite: Digital PR platform that uses AI technology to deliver audience insights, provide data-driven reports, conduct market research, and find media contacts to extend a message across paid, owned and shared channels. TrendKite was acquired by Cision in 2019.

Zignal Labs: Media analytics software that uses big data, machine learning and digital media monitoring to measure the impact of earned media projects, identify reputational risks (e.g., bot attacks), and offer a comprehensive competitive analysis for strategic decision-making.

WEBSITE ANALYTICS

Google Analytics: Web analytics service inside the Google Marketing Platform brand that tracks and reports website traffic.

SimilarWeb: Online market intelligence platform that tracks apps and website traffic statistics and analytics. It offers customer insights and provides information about a brand's competitors.

SOCIAL MEDIA MANAGEMENT

Hootsuite: Social media management platform that monitors, measures campaign results, and supports content curation and team management.

HubSpot: Inbound marketing and sales platform that provides tools for social media marketing, content management, customer service, web analytics and search engine optimization.

Spredfast: Social media management software that provides monitoring tools, marketing and customer care solutions, competitor analysis, and content curation.

Sprinklr: Social media management software that monitors social media channels for advocacy marketing, influencer marketing, social advertising and customer care through social listening.

MEDIA MONITORING

Cision: Earned media management software for public relations and marketing professionals. It provides online, broadcast, social and print monitoring tools to help businesses measure and analyze the impact of their coverage.

Critical Mention: Media monitoring and reporting platform that delivers real-time broadcast, online and social media content to customers in business, government and non-profit sectors.

Meltwater: AI-driven intelligence platform that provides media and social media monitoring tools. It analyzes billions of online conversations to extract relevant insights, connect with influencers, measure campaign performance, and identify competitors and market trends.

Newswhip: Content discovery and analytics database that tracks and predicts how people engage with stories and trending topics on social media.

CONTENT CREATION

Audacity: Free, cross-platform software that allows users to record, edit and combine audio files.

Canva: Graphic design tool that uses a user-friendly drag-and-drop format to design, share and print content. It provides access to a wide array of photographs, graphics and fonts.

SEARCH ENGINE OPTIMIZATION

SEMrush: Online visibility management and content platform that allows brands to build, manage and measure campaigns across all marketing channels. It offers various tools for search, content, social media and video advertising research.

Siteimprove: Software company that offers cloud-based tools to automate the process of identifying errors on websites. It also offers a collection of integrated tools to create high-quality content, drive better traffic to websites, measure digital performance, and work toward regulatory compliance.

SpyFu: Online marketing platform that uses SEO tools and reporting software to analyze competitors, identify top performance metrics, and determine areas for improvement.

CUSTOMER RELATIONSHIP MANAGEMENT AND MARKETING AUTOMATION

Eloqua: Cloud-based software platform for marketing automation that aims to help marketers and organizations manage their campaigns and drive revenue more efficiently. Eloqua is a subsidiary of Oracle Corporation.

Marketo: Marketing automation software that allows businesses to create, automate, manage and track campaigns across web and social media channels. Marketo is an Adobe company.

Salesforce: Customer relationship management platform whose cloud-based applications help businesses track customer information, manage customer support, create personalized marketing campaigns, connect with partners and employees, and access AI-augmented analytics.

SugarCRM: Customer relationship management system that collects critical information across sales, service and marketing to build better business relationships with customers.

Zoho: Web-based software company that offers a suite of business, collaboration, online productivity and SaaS (Software as a Service) applications in order to aid a company's sales, marketing, finance, support and recruitment needs.

INFLUENCER IDENTIFICATION AND MANAGEMENT

BuzzSumo: Online tool that offers social media reports and competitor analysis, and identifies influencer shares, topics and domains. BuzzSumo was acquired by Brandwatch in 2017.

Creator IQ: Influencer marketing software platform that uses machine learning to identify, measure and validate relevant creators/influencers for social media campaigns.

IzeaX: Platform that connects marketers with influential creators to help automate influencer marketing, analyze campaign performance, and customize content development.

Traackr: Influencer relationship management platform that enables brands to manage, validate, measure and scale influencer marketing programs built on relationships.

PAID MEDIA PLANNING

Ads Manager for Facebook and Instagram: An online ad management platform developed by Facebook that allows brands to create ads, manage when and where they will run, and track campaign performance.

Google Ads: An online advertising solution that businesses use to promote products and services on Google Search, YouTube and other sites. Companies can customize their campaigns by setting specific marketing goals, budgets, time frames, audiences and geographic areas.

Twitter Ads: An online marketing platform developed by Twitter where brands can build tailored campaigns to promote products, increase website traffic, and attract new account followers.

ANALYTICS & BUSINESS INTELLIGENCE

Qlik Technologies: End-to-end data management and analytics platform that brings together an organization's data from all sources to provide insights on customer behavior, business processes, revenue streams, and risks and rewards.

Sisense: Business intelligence software that allows users to manage, visualize and analyze complex data from multiple sources in a short amount of time.

Tableau: Business intelligence platform that offers an interactive visual analysis of data in a short amount of time.

NEWS DISSEMINATION & SYNDICATION

Business Wire: Company that disseminates press releases from thousands of companies around the world to news media, financial markets, investors, databases, social networks and other audiences. It is a subsidiary of Berkshire Hathaway.

Outbrain: Performance-driven discovery and native advertising platform that distributes digital content on publisher sites. It uses behavioral targeting to recommend online content to individual readers.

Taboola: Online advertising platform for content recommendation, audience acquisition and native advertising. It uses machine-learning algorithms to capture what kind of content is most likely to engage with each individual.

ARTIFICIAL INTELLIGENCE (TOOLS FOR DEVELOPERS)

ONNX.AI (Open Neural Network Exchange): Open ecosystem that allows AI models to be exchanged between different cloud service providers, allowing AI developers to use their models in new places. This project is a collaboration between Microsoft and Facebook, and is available on GitHub.

PyTorch: Open-source deep learning platform for Python, based on Torch, often used for natural language processing (NLP). The platform provides a path from research prototyping to production deployment. It is primarily developed by Facebook's AI research group and is available on GitHub.

Tensor Flow: Open-source machine learning software library for high-performance numerical computation. It allows easy deployment of computation across a variety of platforms, servers and devices. It was originally developed by the Google Brain team and is available on GitHub.

VOICE ASSISTANTS

Alexa for Business: Amazon virtual assistant that automates and simplifies interactions with technology in a corporate environment. This service is integrated with other platforms, which extends its functionality to other services used in the workplace.

Cortana Skills Kit for Enterprise Developers: Microsoft's Cortana is a digital assistant that helps users organize and manage daily tasks. With Cortana Skills Kit for Enterprise, businesses can build their own speech bots for different domains.

Google Assistant: An AI-powered virtual assistant that is primarily available on mobile and smart home devices. Third-party developers can use its software development kit (SDK) to extend the appliances and build richer experiences for their users.

SiriKit: API for integrating developer applications with Siri, Apple's intelligent assistant. The toolkit helps developers to add functionality by building an extension that communicates with Siri.

CONVERSATIONAL BOTS

Amazon Lex: Service for building conversational interfaces into any application using voice and text. It uses the same deep learning technologies that power Amazon Alexa to build conversational bots (or "chatbots").

Live Chat: Live-chat software tool that provides help desk software, customer support and web analytics. This tool helps e-commerce companies create sales channels to support and engage with website visitors.

Reply.ai: Chatbot building and management platform that helps businesses optimize conversations with clients across channels and websites.

AUGMENTED REALITY (AR)

ARCore: Software development kit developed by Google that allows users to build augmented reality applications for Android and iOS devices.

ARKit: Set of software development tools that allow users to build augmented reality applications for iOS.

EasyAR: Platform where users can develop augmented reality applications for Android, iOS, UWP, Windows, Mac and Unity Editor.

VIRTUAL REALITY

Oculus VR: Company that specializes in virtual reality software and hardware products. It is a division of Facebook Technologies. In 2015, Oculus partnered with Samsung to create the Samsung Gear VR for the Samsung Galaxy smartphones.

METHODOLOGY

The data for the 2019 Global Communications Report was collected through an online survey fielded by the USC Annenberg Center for Public Relations (CPR) and distributed through PR-related email lists and social media groups. The survey was live between January 7, 2019, and February 15, 2019.

The survey asked questions regarding changes relevant to the PR industry and the use of technology aimed at PR professionals (agency and in-house professionals) and PR students. Responses were subjected to extensive data cleaning to eliminate dubious response patterns and respondents who had misclassified themselves.

The sample for this survey is a "convenience sample." Consequently, we cannot say that the responses are representative of the respective populations. Nevertheless, we believe this data offers numerous directional insights into the attitudes and beliefs of PR professionals and students.

DESCRIPTION OF THE PR PROFESSIONALS SAMPLE:

The sample included in the analyses encompasses 1,563 responses from PR professionals, of which 803 were PR professionals working in agency/consultancy establishments and 760 working as in-house PR professionals. 65.6% of the PR professionals were from the United States and the remaining 34.4% from other countries.

Of those working for agencies/consultancies, 41% indicated that they headed the organization and 22% had significant management responsibilities within the organization. Of the in-house PR professionals, 39% indicated that they were the most senior communication professional in the organization and an additional 40% indicated that they had significant management responsibilities.

The PR professionals in the sample were mostly between 45-54 years old (31%), followed by 35-44

years (26%). 37% indicated that they were male, 61% female and 2% other or preferred not to answer. Nearly half (47%) had 20 years or more of working experience in the PR industry.

DESCRIPTION OF STUDENT SAMPLE:

The student sample encompasses 378 respondents. The student respondents were 21% male, 76% female and 3% identified as other or preferred not to answer. 85% were between 18-24 years old and 13% between 25-34 years. 78% were from the United States. 77% were undergraduate or honors students. 54% had work experience in the PR industry.

DESCRIPTION OF CEO SAMPLE:

CEOs were surveyed through Chief Executive magazine in November 2018. The CEO sample encompasses 213 responses from companies of various sizes. 20% report revenues between $10 million and $24.9 million, and a similar number between $100 million and $1 billion. 7% of the respondents have annual revenues greater than $1 billion, while 19% report revenues less than $5 million.

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Patricia Lapadula, design
Suzanne Boretz, graphics
Rachelle Martin, website
Jasmine Torres, events
ASCJ TechOps

USC Center for Public Relations

DIRECTOR
Fred Cook
fcook@usc.edu

ASSOCIATE DIRECTOR
Burghardt Tenderich, PhD
tenderic@usc.edu

CHIEF PROGRAM OFFICER
Ron Antonette
ron.antonette@usc.edu

OFFICE OF THE DEAN
Tina Vennegaard
tinaven@usc.edu

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Oscar Suris
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Amy von Walter
Julia Wilson
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Blythe Morris Yee
Melissa Waggener Zorkin

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