DIGITAL ENGAGEMENT REPORT 2021

» Preface

The Covid-19 pandemic has highlighted that digitalisation is one of the most critical issues faced by individuals, businesses and countries today. Whilst other nations – notably the United States and China – have capitalised on the crisis and now dominate key digital technologies more than ever before, Europe is increasingly lagging behind in terms of digitalisation and the development of a digital economy. Moreover, many European companies are still struggling not only with infrastructure topics, but also with key digital technologies such as quantum computing and robotics.

Against this backdrop, the European Center for Digital Competitiveness by ESCP Business School in Berlin has published the Digital Engagement Report 2021. The report presents the digital engagement of all 27 European heads of state and government for the year 2020, including all interactions around digitalisation, based on publicly accessible government information, press releases and personal accounts on the social media platform Twitter.

Heads of state and government play a crucial role in the successful digital transformation of their countries, and similar to CEOs, who are responsible for setting and implementing company strategy, these government leaders set the political agenda of their country and are ultimately responsible for their execution. Furthermore, the involvement of a government leader can signal the importance of an issue to his or her entire country, which in turn can inspire the actions of citizens, start-ups and incumbent businesses. The way that governments manage and navigate the digital revolution will continue to determine significantly how competitive and prosperous their countries will be in the decades ahead.

In the aftermath of the pandemic, digital technologies – more than ever before – have the potential to disrupt nearly any industry. Through the Digital Engagement Report 2021, we thus want to stress the importance of highlighting digitalisation at the highest level of government. We hope that this report serves as a call to action for politicians to promote digital engagement in the future and emphasise its importance in the digital transformation of Europe.

Prof. Dr. Philip Meissner

» Executive Summary

This report finds that despite the digital acceleration brought about by the Covid-19 pandemic, the digital priorities of European heads of state or government have only shifted slightly as a result. Compared to our analysis of 2019, topics around e-government and digital education, which were crucial for solving the crisis, received very little additional attention. Most emphasis was placed on digital infrastructure topics such as industry 4.0 and 5G. At the same time, future technologies, such as quantum computing and robotics, were largely disregarded by most European leaders.

Moreover, our analysis shows that the digital engagement of European heads of state or government varies widely in terms of both the amount and the topics in which they engaged during the course of 2020. The top five politicians in the ranking had an average of 31 engagements linked to digitalisation, while the bottom five only had seven on average.

The most digitally engaged leaders in Europe were Jüri Ratas, Angela Merkel, Emmanuel Macron, Kyriakos Mitsotakis and Andrej Plenković, whilst the least so were Janez Janša, Boyko Borisov, Igor Matovič, Ingrida Šimonytė and Viktor Orbán.

European heads of state or government focused on digital infrastructure

Comparing the digital engagement of top politicians across technologies reveals that European heads of state or government still focused mainly on digital infrastructure. In the last year, industry 4.0 and 5G had the most digital engagements (103 and 64, respectively). This trend is reflected in the digital engagements by the leaders of Europe's two biggest economies: Angela Merkel had most with regards to 5G, while Emmanuel Macron placed more emphasis on industry 4.0.

Key future technologies are mostly neglected

While infrastructure topics have dominated public discussions around technology, our analysis also shows that digital future technologies were largely disregarded. Across all European heads of state and government, quantum computing only had nine engagements, while robotics had only four, which amounts to merely 2 and 1 per cent of all engagements, respectively. This trend is reflected by the leaders of Europe's two biggest economies. While 25% of all activities by Angela Merkel related to the topic of 5G, she showed little commitment to technologies of the future such as quantum computing (8%), cloud computing (4%) and robotics (no activities). Macron placed the topic of industry 4.0 centre stage, as 29% of his digital activities related to this topic. While he addressed cloud computing (13%) more, quantum computing (8%) and robotics (no activities) had as little priority for him as for his German counterpart.

Besides future technologies, leaders also largely neglected entrepreneurship and digital education

Digital future technologies are key factors in solving our most pressing problems, such as dealing with pandemics, preserving our digital sovereignty and tackling climate change. However, crucial areas in this regard, such as entrepreneurship (38 engagements) and digital education (34 engagements), remain a low priority for European heads of state and government.
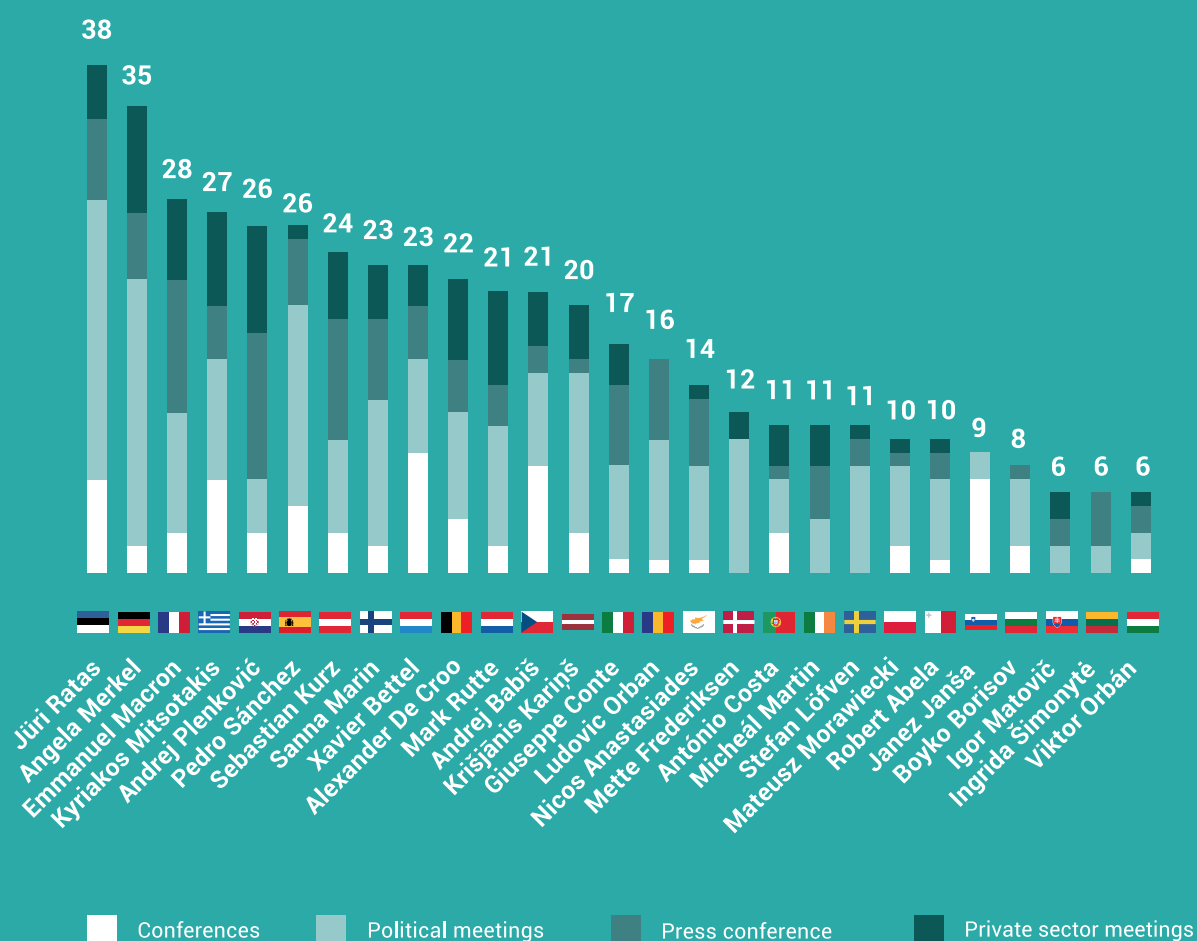
» About the Digital Engagement Report

The objective of the Digital Engagement Report is to investigate the digitalisation topics with which European heads of state and government engage, thus providing an in-depth analysis of all 27 leaders' digital focus areas.

It is based on a digital engagement index, which tracks all relevant interactions around the topic of digitalisation in 2020. The index is compiled from a variety of publicly accessible information promulgated by governments, press releases and personal accounts on the social media platform Twitter.

The digital engagements were recorded from January 1, 2020 until Dec 31, 2020. The study identified 481 digital engagements, which were then classified according to the type of interaction (conferences, private sector meetings, political meetings and press conferences) and topic (industry 4.0, 5G, cybersecurity, e-government, entrepreneurship, AI, digital education, mobility, cloud computing, quantum computing and robotics). Some could not be attributed to a specific topic, while others included discussions on several topics. Every engagement is only counted once in the digital engagement index; however, if it was about two or more topics, these are included in the count for each topic and represented in the leaders' individual engagement profiles.

The analysis of these interactions results in detailed profiles of each European leader, represented as a percentage of total digital engagement. They can be found from page 25 onward. In the case of six countries, their head of state or government changed during 2020; thus, they are duly noted, and the digital engagement of the predecessor is also included in the new leader's profile.

CHART 1 – TOTAL DIGITAL ENGAGEMENTS BY HEADS OF STATE AND GOVERNMENT

	Value
Jüri Ratas	38
Angela Merkel	35
Emmanuel Macron	28
Kyriakos Mitsotakis	27
Andrej Plenković	26
Pedro Sánchez	26
Sebastian Kurz	24
Sanna Marin	23
Xavier Bettel	23
Alexander De Croo	22
Mark Rutte	21
Andrej Babiš	21
Krišjānis Kariņš	20
Giuseppe Conte	17
Ludovic Orban	16
Nicos Anastasiades	14
Mette Frederiksen	12
António Costa	11
Micheál Martin	11
Stefan Löfven	11
Mateusz Morawiecki	10
Robert Abela	10
Janez Janša	9
Boyko Borisov	8
Igor Matovič	6
Ingrida Šimonytė	6
Viktor Orbán	6

Legend: Conferences — Political meetings — Press conference — Private sector meetings

Varying digital engagement across European heads of state and government

As in the previous year, the digital engagement of European heads of state and government varied widely. On average, 18 engagements per year were recorded, with 14 of the 27 leaders falling below this average. While the top five politicians in the ranking had an average of 31 engagements linked to digitalisation in 2020, the bottom five only had seven during the same time period.

The most digitally engaged leaders in Europe were Jüri Ratas, Angela Merkel, Emmanuel Macron, Kyriakos Mitsotakis and Andrej Plenković, whilst the least so were Viktor Orbán, Ingrida Šimonytė, Igor Matovič, Boyko Borisov and Janez Janša (Chart 1). As in the previous year, therefore, the importance of digitisation – as reflected in heads of state and government activities – differed to a large degree throughout Europe.

Industry 4.0 and 5G dominate

Infrastructure topics such as industry 4.0 and 5G have dominated public discussions around digitalisation. This focus is also reflected in the combined engagement of European heads of state and government, with 103 engagements for industry 4.0 and 64 for 5G.

Conversely, our analysis also shows that key future technologies such as quantum computing (nine engagements) and robotics (four engagements) received very little attention. In total, only 3% of all digital engagements focused on these crucial areas.

Also, and somewhat surprisingly, with only 38 and 34 engagements, respectively, for all leaders combined, the major topics entrepreneurship and digital education were not addressed widely by top politicians in the year of the pandemic.

CHART 2 – DIGITAL ENGAGEMENT BY TOPIC

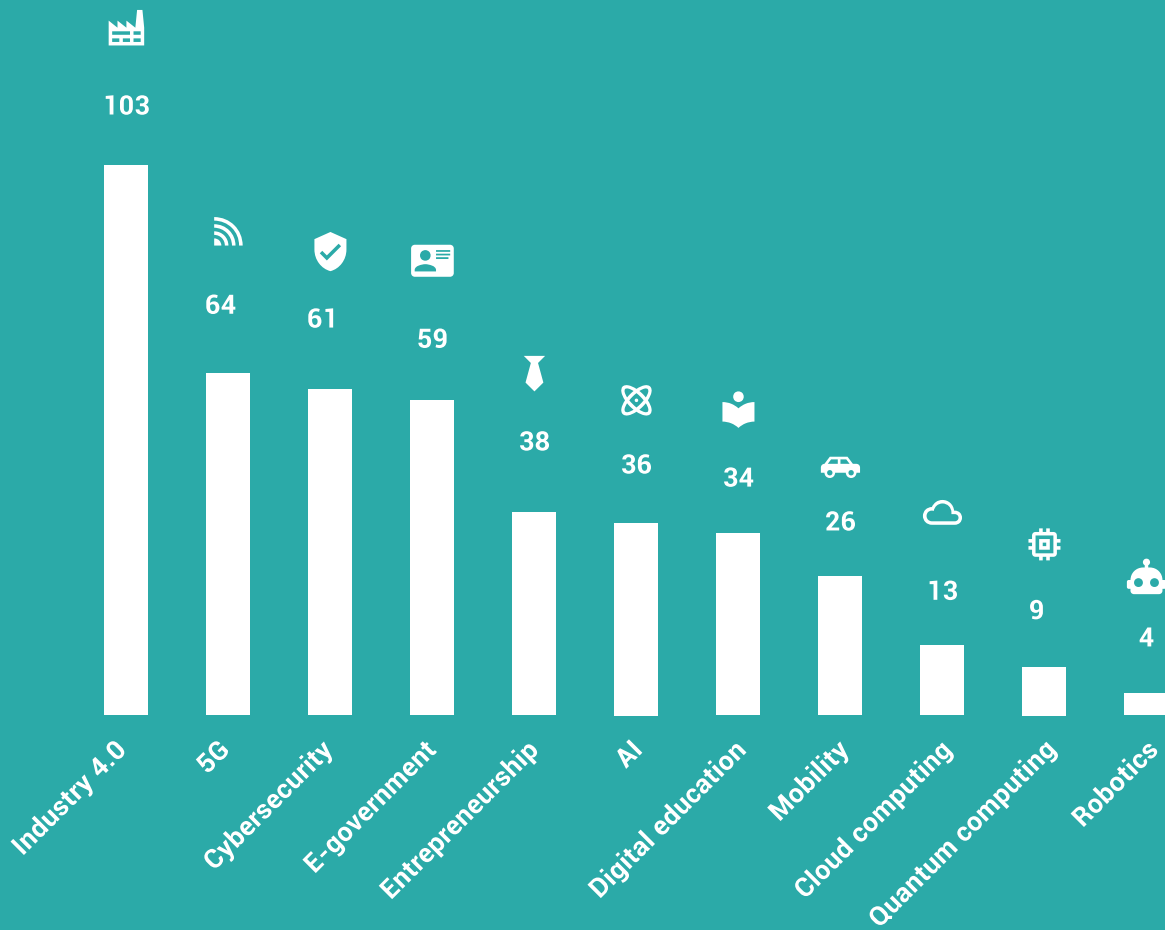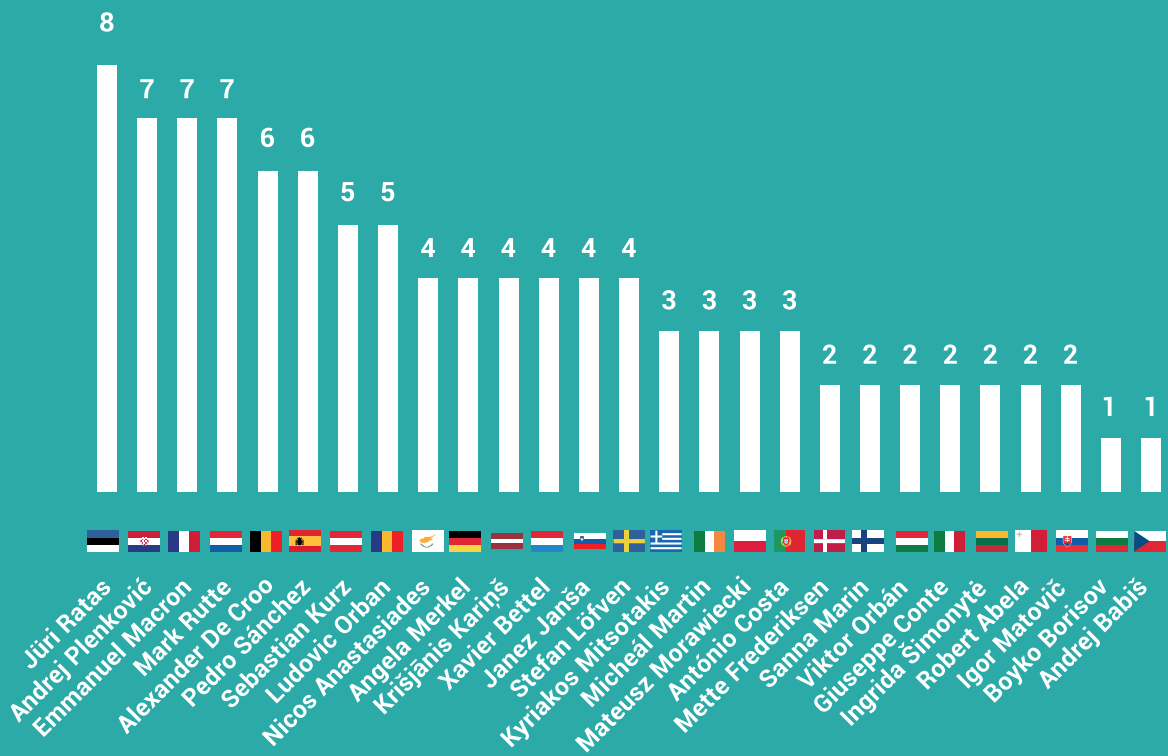| Topic	Value
Industry 4.0	103
5G	64
Cybersecurity	61
E-government	59
Entrepreneurship	38
AI	36
Digital education	34
Mobility	26
Cloud computing	13
Quantum computing	9
Robotics	4

CHART 3 – ENGAGEMENT IN INDUSTRY 4.0

Estonia emerges as the leader in Industry 4.0 digital engagement

When it comes to the digitalisation of the legacy industry, Estonia's Jüri Ratas emerged as the leader with the most engagements (eight) related to industry 4.0.

Industry 4.0 represents an exceptional area in our analysis, as it was a priority for many heads of state and government. The three runners-up, namely Andrej Plenković, Emmanuel Macron and Mark Rutte, followed closely behind Jüri Ratas with seven engagements each. At the other end of the scale, Boyko Borisov and Andrej Babiš had only two digital engagements with industry 4.0.

Germany leads digital engagement related to 5G

There were 64 engagements by all heads of state and government related to 5G in 2020. As in the previous year, Angela Merkel stood out as the leader on 5G, with six engagements. Our analysis thus shows that this infrastructure topic remains of great importance to the German Chancellor.

While Andrej Babiš (four) and Mette Frederiksen (four) also paid good attention to the subject, Viktor Orbán, Arturs Krišjānis Kariņš, Robert Abela, Igor Matovič and Pedro Sánchez brought up the rear, with only one digital engagement each with 5G.

CHART 4 — ENGAGEMENT IN 5G

6 — Angela Merkel
4 — Andrej Babiš
4 — Mette Frederiksen
3 — Boyko Borisov
3 — Nicos Anastasiades
3 — Jüri Ratas
3 — Sanna Marin
3 — Emmanuel Macron
3 — Giuseppe Conte
3 — Mateusz Morawiecki
2 — Sebastian Kurz
2 — Alexander De Croo
2 — Andrej Plenković
2 — Kyriakos Mitsotakis
2 — Micheál Martin
2 — Ingrida Šimonytė
2 — Xavier Bettel
2 — Mark Rutte
2 — António Costa
2 — Ludovic Orban
2 — Janez Janša
2 — Stefan Löfven
1 — Viktor Orbán
1 — Krišjānis Kariņš
1 — Robert Abela
1 — Igor Matovič
1 — Pedro Sánchez

CHART 5 – ENGAGEMENT IN CYBERSECURITY

Bar chart values: 9, 7, 4, 4, 4, 4, 3, 2, 2, 2, 2, 2, 2, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0

Jüri Ratas
Andrej Babiš
Sebastian Kurz
Sanna Marin
Emmanuel Macron
Angela Merkel
Xavier Bettel
Nicos Anastasiades
Mette Frederiksen
Kyriakos Mitsotakis
Robert Abela
António Costa
Ludovic Orban
Pedro Sánchez
Alexander De Croo
Boyko Borisov
Andrej Plenković
Viktor Orbán
Micheál Martin
Giuseppe Conte
Krišjānis Kariņš
Ingrida Šimonytė
Mark Rutte
Mateusz Morawiecki
Igor Matovič
Janez Janša
Stefan Löfven
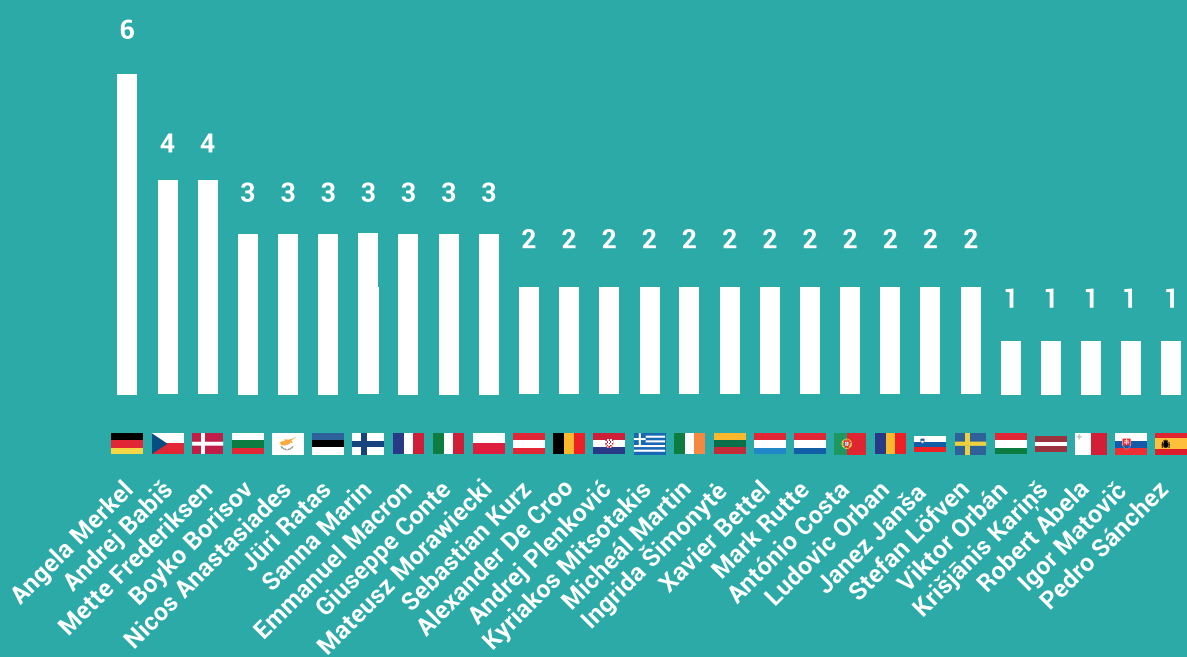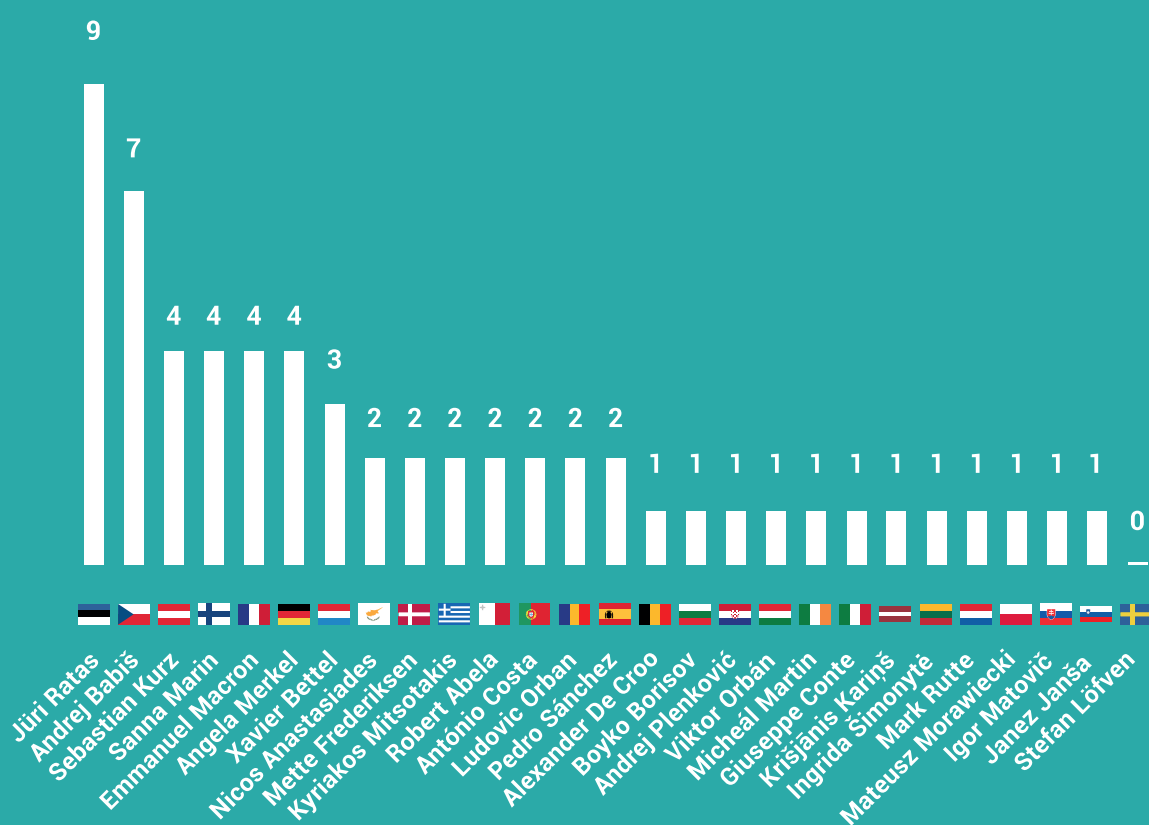
Estonia also led in cybersecurity, which has significantly gained importance throughout Europe

Whilst digital priorities throughout Europe regarding many topics only shifted slightly in reaction to the Covid-19 pandemic, cybersecurity received significant additional attention amongst European heads of state and government in 2020.

The topic was addressed by all leaders at least once, with the exception of Sweden's Stefan Löfven. With regards to industry 4.0, Estonia's Jüri Ratas emerged as the leader in cybersecurity, with nine engagements during the year. The runner-up, Chechnya's Andrej Babiš (seven), was also very active on this topic.

Again, E-Government was the top priority for Estonia's Jüri Ratas, but it was largely neglected by most other leaders

As for industry 4.0 and cybersecurity, Jüri Ratas led the field as the most digitally engaged European political leader with regard to e-government. As in the previous year, digitalising the government and offering digital government services for citizens was a clear priority for Estonia, which is reflected in seven digital engagements on the topic in 2020.

Andrej Babiš (6) and Andrej Plenković (4) were also relatively active with regard to this subject. Conversely, for most other heads of state and government, e-government was not similarly important. Eight leaders had only two engagements on e-government, while another 11 leaders had only one.
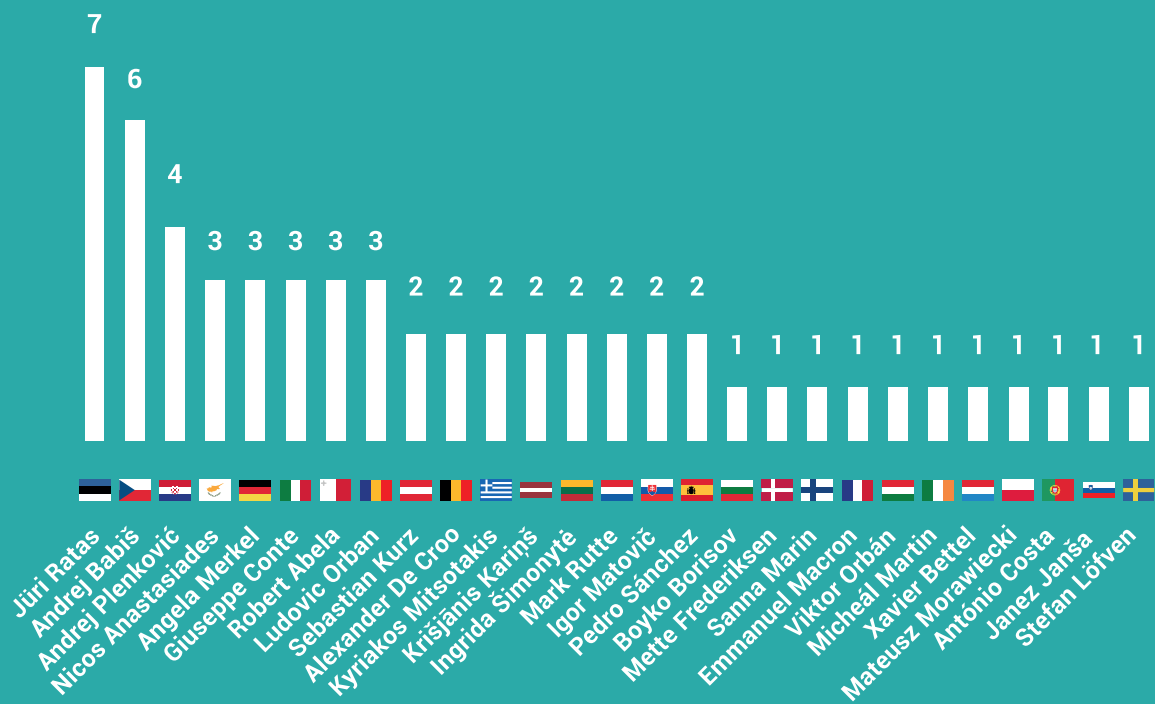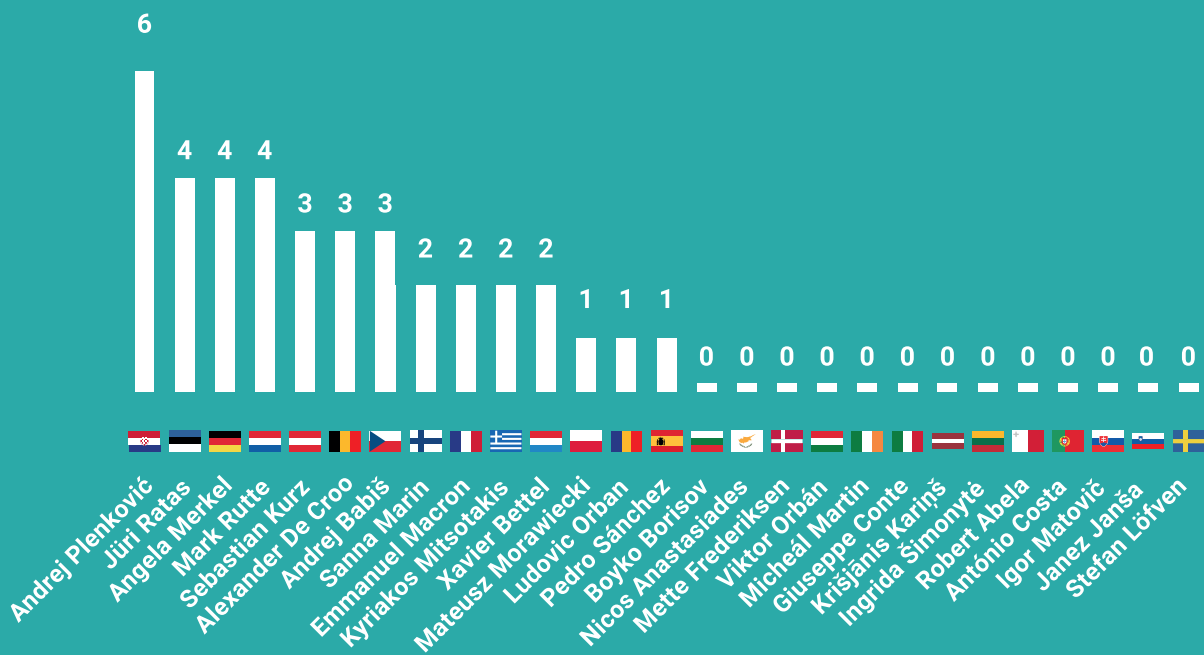
CHART 6 – ENGAGEMENT IN E-GOVERNMENT

7 — Jüri Ratas
6 — Andrej Babiš
4 — Andrej Plenković
3 — Nicos Anastasiades
3 — Angela Merkel
3 — Giuseppe Conte
3 — Robert Abela
3 — Ludovic Orban
2 — Sebastian Kurz
2 — Alexander De Croo
2 — Kyriakos Mitsotakis
2 — Krišjānis Kariņš
2 — Ingrida Šimonytė
2 — Mark Rutte
2 — Igor Matovič
2 — Pedro Sánchez
1 — Boyko Borisov
1 — Mette Frederiksen
1 — Sanna Marin
1 — Emmanuel Macron
1 — Viktor Orbán
1 — Micheál Martin
1 — Xavier Bettel
1 — Mateusz Morawiecki
1 — António Costa
1 — Janez Janša
1 — Stefan Löfven

CHART 7 – ENGAGEMENT IN ENTREPRENEURSHIP

6

4 4 4

3 3 3

2 2 2 2

1 1 1

0 0 0 0 0 0 0 0 0 0 0 0 0 0

Andrej Plenković
Jüri Ratas
Angela Merkel
Mark Rutte
Sebastian Kurz
Alexander De Croo
Andrej Babiš
Sanna Marin
Emmanuel Macron
Kyriakos Mitsotakis
Xavier Bettel
Mateusz Morawiecki
Ludovic Orban
Pedro Sánchez
Boyko Borisov
Nicos Anastasiades
Mette Frederiksen
Viktor Orbán
Micheál Martin
Giuseppe Conte
Krišjānis Kariņš
Ingrida Šimonytė
Robert Abela
António Costa
Igor Matovič
Janez Janša
Stefan Löfven

Entrepreneurship was a top priority for some leaders, while it was completely neglected by many others

Andrej Plenković had a total of six engagements related to entrepreneurship and thus led the field in this regard. Jüri Ratas, Angela Merkel and Mark Rutte emerged as the runners-up in 2020, with four engagements each.

As in the previous year, clear differences emerged amongst the European heads of state and government. While the top five countries had an average of five engagements on this important topic, almost half of all European leaders – namely Boyko Borisov, Nicos Anastasiades, Mette Frederiksen, Viktor Orbán, Micheál Martin, Giuseppe Conte, Arturs Krišjānis Kariņš, Ingrida Šimonytė, Robert Abela, António Costa, Igor Matovič, Janez Janša and Stefan Löfven – did not have any activities at all linked to entrepreneurship.

» Individual Head of State and Government Profiles
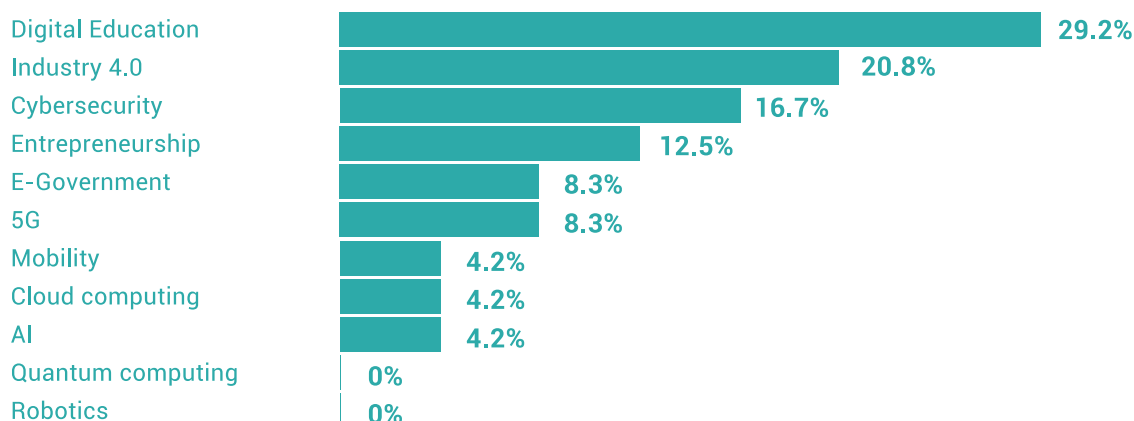
Chancellor Sebastian Kurz

Austria 🇦🇹

Caretaker government between
28 May 2019 until re-election on 7 Jan 2020.

Frontrunner in terms of digital education, but neglected key future technologies
With seven engagements, Sebastian Kurz was the most active head of state and government in terms of digital education. His commitment to this field included announcements on this topic to deal with the Covid-19 pandemic, including investments of €2.4 billion in schools. With a total of 24 digital engagements, he also was the third most digitally engaged head of state or government in Western Europe. Austria has a large production industry, and in 2020, Kurz paid a lot of attention (20.8% of engagements) to industry 4.0. In line with many European heads of state and government, he had no engagements related to key future technologies, i.e. robotics and quantum computing.

DIGITAL ENGAGEMENT PROFILE

Category	Percentage
Digital Education	29.2%
Industry 4.0	20.8%
Cybersecurity	16.7%
Entrepreneurship	12.5%
E-Government	8.3%
5G	8.3%
Mobility	4.2%
Cloud computing	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%

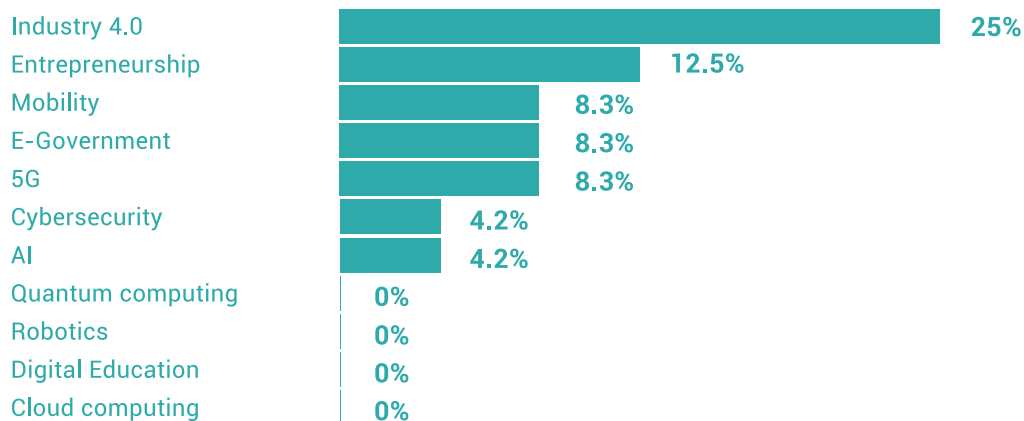# Prime Minister Alexander De Croo

Belgium 🇧🇪

Succeeded Sophie Wilmès as
prime minister on 1 October, 2020.

Focus on industry 4.0, but no activities on digital education and key future technologies
With 22 digital engagements, Belgium ranks among the top ten European countries in our report. The country's prime ministers had a clear focus on industry 4.0, with 25% of all digital engagements related to this topic. There were also several engagements related to entrepreneurship (12.5%), such as awarding the Enterprise of the Year 2020 award to a start-up, as well as paying a company visit to another start-up to stress the importance of entrepreneurship and going digital. Yet, despite the Covid-19 pandemic, Belgium's prime ministers had no engagements related to digital education. They also lacked activities related to key future technologies such as quantum computing, robotics and cloud computing.

DIGITAL ENGAGEMENT PROFILE

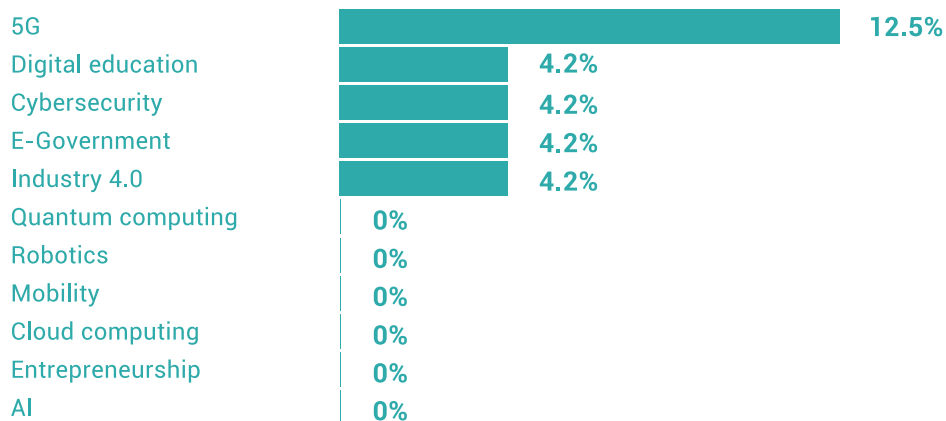| Category	Percentage
Industry 4.0	25%
Entrepreneurship	12.5%
Mobility	8.3%
E-Government	8.3%
5G	8.3%
Cybersecurity	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Digital Education	0%
Cloud computing	0%

Prime Minister Boyko Borisov

Bulgaria 🇧🇬

Low and narrow digital engagement, with no attention paid to key future technologies

As in the previous year, Boyko Borisov's digital engagement is characterised by the fact that he only covered five of the eleven topics identified in the digital engagement index. With eight engagements, he showed low overall commitment, which puts him second-to-last amongst all 27 countries as well as Eastern European ones. His main focus again fell on 5G (12.5% of engagements), while there was some interest in digital education, cybersecurity, e-government and Industry 4.0. However, Borisov completely neglected key future technologies such as quantum computing, robotics and cloud computing.
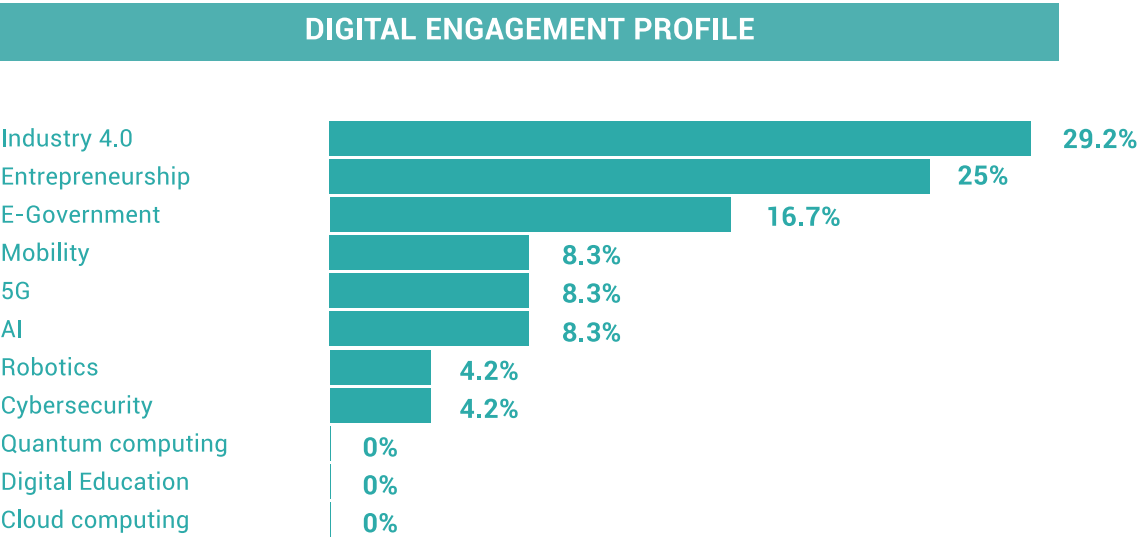

DIGITAL ENGAGEMENT PROFILE

Topic	Value
5G	12.5%
Digital education	4.2%
Cybersecurity	4.2%
E-Government	4.2%
Industry 4.0	4.2%
Quantum computing	0%
Robotics	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%
AI	0%

Prime Minister Andrej Plenković

Croatia 🇭🇷

Highest engagement in both Eastern Europe and on entrepreneurship

Andrej Plenković had the highest digital engagement of Eastern Europe, with a total of 26 engagements. Plenković placed a great deal of emphasis on promoting industry 4.0 (29.2% of all engagements), which ranked him second highest on this topic among all European heads of state and government. Also, he was the most engaged political leader in terms of entrepreneurship (25%), including speeches that stressed the importance of this topic, as well as opening an incubator for new technologies and entrepreneurship. While he was only one of four European heads of state and government to address robotics (4.2%), like most other government leaders, Plenković largely neglected the key future technologies quantum computing and cloud computing.

DIGITAL ENGAGEMENT PROFILE

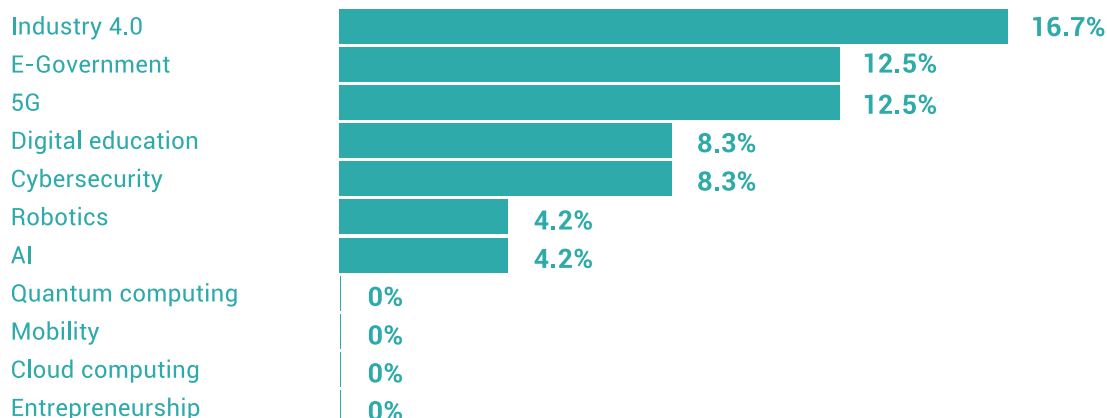| Topic	Percentage
Industry 4.0	29.2%
Entrepreneurship	25%
E-Government	16.7%
Mobility	8.3%
5G	8.3%
AI	8.3%
Robotics	4.2%
Cybersecurity	4.2%
Quantum computing	0%
Digital Education	0%
Cloud computing	0%

President Nicos Anastasiades

Cyprus 🇨🇾

Engagement in infrastructure and e-government, and also some in robotics

With 14 engagements, Nicos Anastasiades is ranked in the second tertile of the digital engagement index. While industry 4.0 was his most prevalent topic (16.7% of all engagements), he also showed some interest in e-government and 5G (each 12.5%). This included stressing the importance of e-government in a speech on the 60th anniversary of the country's independence, as well as a meeting with the minister for telecommunication to create a plan for explaining 5G to the public. As one of only four of the European heads of state and government, Anastasiades had at least one digital engagement covering robotics, as he met the like-minded technologist and investor Tej Kohli. Apart from that, and in line with most of his counterparts throughout Europe, he largely neglected key future technologies, notably quantum computing and cloud computing.

DIGITAL ENGAGEMENT PROFILE

Topic	Percentage
Industry 4.0	16.7%
E-Government	12.5%
5G	12.5%
Digital education	8.3%
Cybersecurity	8.3%
Robotics	4.2%
AI	4.2%
Quantum computing	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%

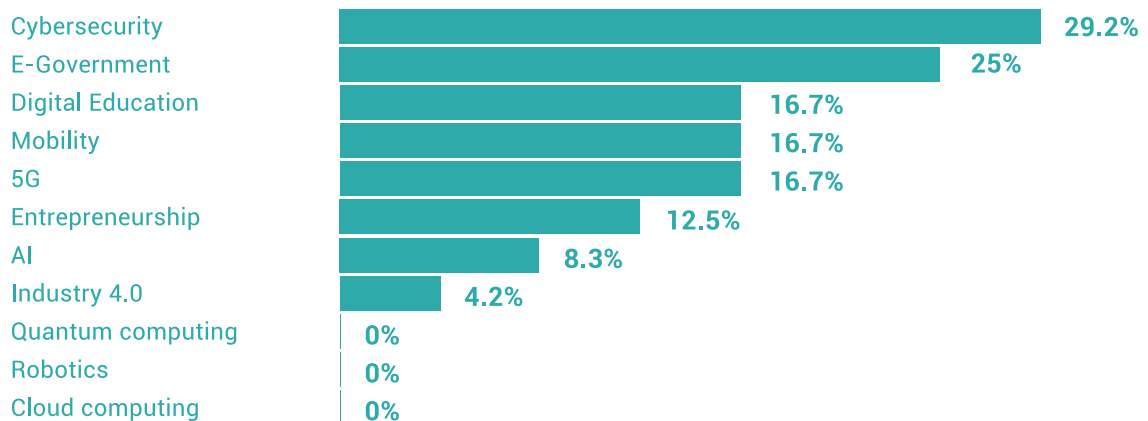# Prime Minister Andrej Babis

Czech Republic 🇨🇿

Second most engaged head of state and government on both cybersecurity and e-government

With 21 digital engagements, Andrej Babiš was the second most engaged of all EasternEuropean government leaders. His two main focus areas were cybersecurity (29.2% of engagements) and e-government (25%). In these two areas, he ranked second only to Estonia's Jüri Ratas, whom he met to discuss both subjects. A further engagement in these topics included visiting the "Hack the Crisis" hackathon. Other areas of interest for him were digital education, mobility and 5G (each 16.7%). Lastly, Babiš generally lacked engagement with key future technologies such as quantum computing, robotics and cloud computing.

DIGITAL ENGAGEMENT PROFILE

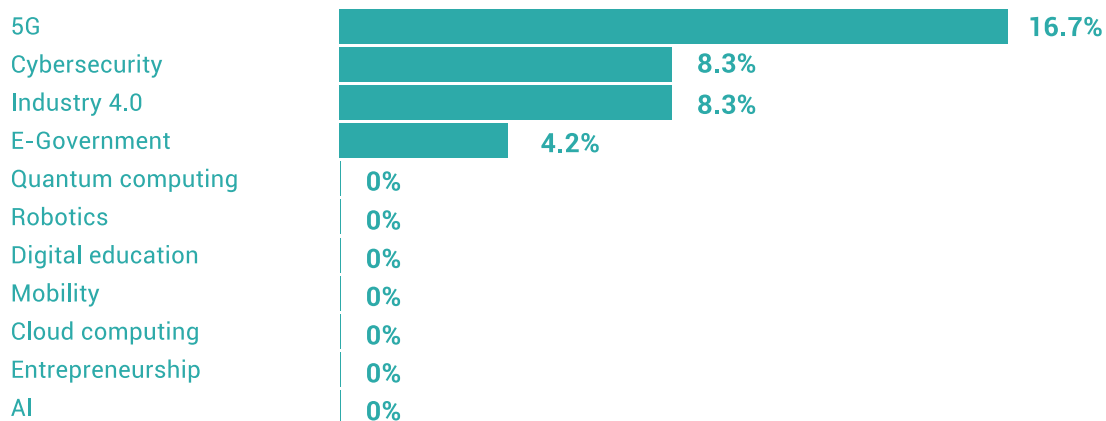| Category	Percentage
Cybersecurity	29.2%
E-Government	25%
Digital Education	16.7%
Mobility	16.7%
5G	16.7%
Entrepreneurship	12.5%
AI	8.3%
Industry 4.0	4.2%
Quantum computing	0%
Robotics	0%
Cloud computing	0%

Prime Minister Mette Frederiksen

Denmark 🇩🇰

Moderate engagement on very few topics, mostly on infrastructure

With 12 digital engagements, Mette Frederiksen ranks average amongst both Europe and Northern Europe. Denmark was in the second tertile amongst all analysed European countries, while it was third amongst the five Northern European nations. Like many other European heads of state and government, a large share of her engagements focused on infrastructure topics, notably 5G (16.7% of engagements) and industry 4.0 (8.3%). She also had some engagement with cybersecurity (also 8.3%) and a bit of engagement with e-government (4.2%). Most notably, Frederiksen stands out as one of the few government leaders that engaged in only four topics, thereby completely neglecting key future technologies as well as digital education and entrepreneurship.

DIGITAL ENGAGEMENT PROFILE

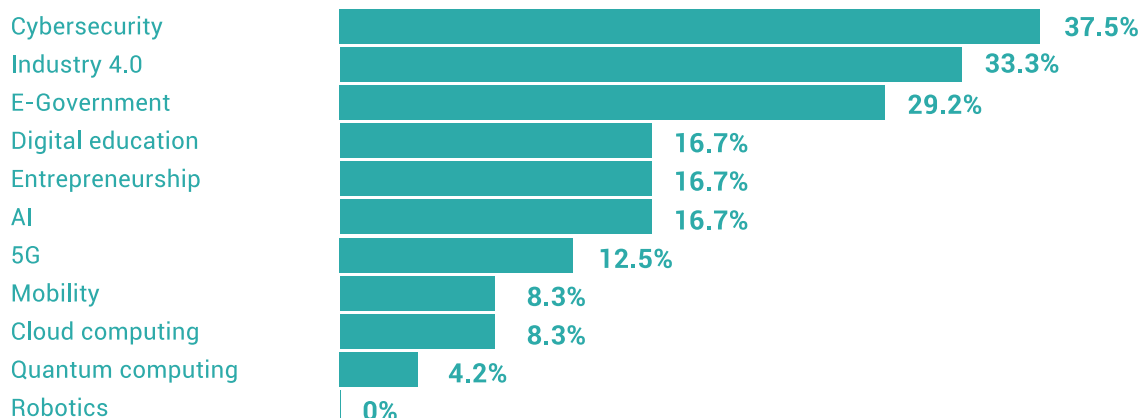| Topic	Percentage
5G	16.7%
Cybersecurity	8.3%
Industry 4.0	8.3%
E-Government	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%
AI	0%

Prime Minister Jüri Ratas

Estonia

Most digitally engaged European head of state and government

As in the previous year, Jüri Ratas was the most digitally engaged government leader in 2020,with 38 digital engagements in total. He took the top position for cybersecurity (37.5% of his engagements), industry 4.0 (21.7%) and e-government (29.2%). As in the previous year, Ratas was a sought-after speaker on the latter topic, including a speech on the Estonian EU council presidency. Also, he was runner-up among all European heads of state and government in digital engagement with regards to AI and entrepreneurship (each 16.7%). While he did not discuss robotics, his engagement included all other topics that were part of our analysis, including key future technologies such as cloud computing and quantum computing.

DIGITAL ENGAGEMENT PROFILE

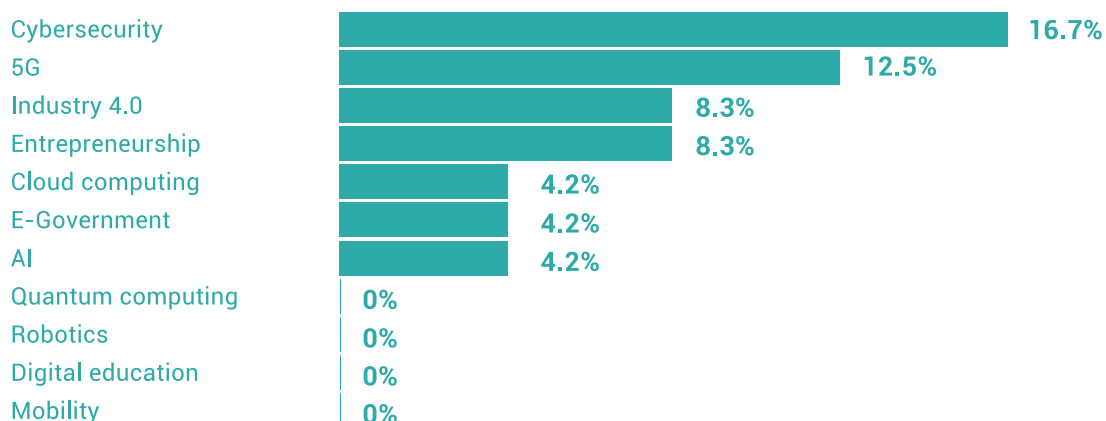| Topic	Percentage
Cybersecurity	37.5%
Industry 4.0	33.3%
E-Government	29.2%
Digital education	16.7%
Entrepreneurship	16.7%
AI	16.7%
5G	12.5%
Mobility	8.3%
Cloud computing	8.3%
Quantum computing	4.2%
Robotics	0%

Prime Minister Sanna Marin

Finland 🇫🇮

Focus on cybersecurity and infrastructure topics

Finland's Sanna Marin had 23 digital engagements in 2020, which puts her in the runner-up position to Jüri Ratas amongst the Northern European countries. Amongst all countries analysed in our report, she ranks in the top tertile. For Marin, cybersecurity was the most important topic in 2020, with 16.7% of her engagements focused on that topic. Her respective engagements included the announcement of cybersecurity reforms in the future and a report on Finland's "digital leap forward," in which cybersecurity was included as one of six prioritised proposals for measures. She also strongly addressed 5G (12.5%), for example during a speech on Finland's presidency of the Council of EU in February 2020. She somewhat engaged with industry 4.0 and entrepreneurship (each 8.3%), including a meeting with Jüri Ratas to discuss cooperation and entrepreneurship. However, as in the previous year, other future technologies such as quantum computing and robotics were not on her agenda, along with digital education and mobility.

DIGITAL ENGAGEMENT PROFILE

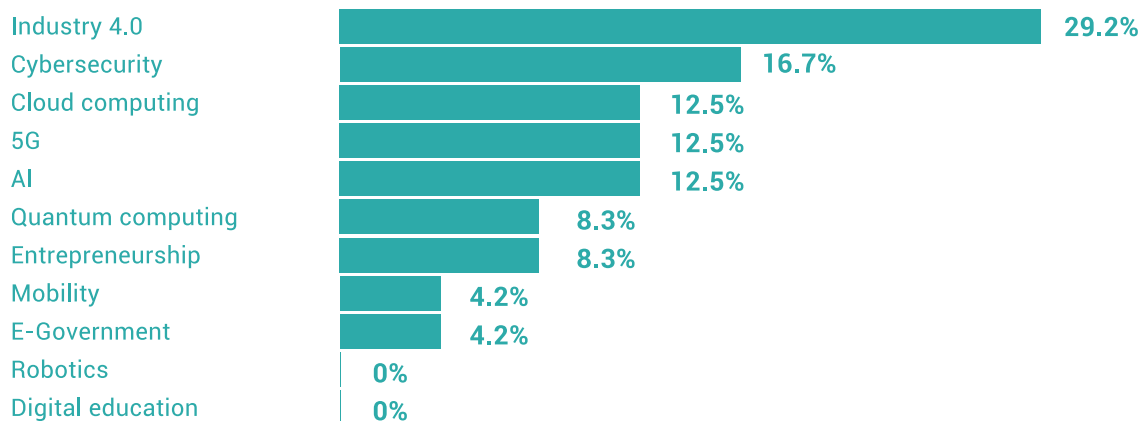| Topic	Percentage
Cybersecurity	16.7%
5G	12.5%
Industry 4.0	8.3%
Entrepreneurship	8.3%
Cloud computing	4.2%
E-Government	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%

President Emmanuel Macron

France 🇫🇷

Focus on industry 4.0 and amongst the most engaged in quantum computing

As in the previous year, and with 28 engagements, president Macron emerges as the third most engaged of the European heads of state and government. Macron's highest engagements were related to industry 4.0 (29.2%). On this topic, he also had the third most engagements of all leaders. Cybersecurity also was an important topic for him (16.7%) in 2020, which was reflected in a speech he gave at the Munich Security Conference. Further digital engagements include numerous private sector meetings. Contrary to most other government leaders, Macron engaged in quantum computing, sharing the top spot with Germany's Angela Merkel (both 8.3%). Yet, he held no discussions on digital education or robotics.

DIGITAL ENGAGEMENT PROFILE

Topic	Percentage
Industry 4.0	29.2%
Cybersecurity	16.7%
Cloud computing	12.5%
5G	12.5%
AI	12.5%
Quantum computing	8.3%
Entrepreneurship	8.3%
Mobility	4.2%
E-Government	4.2%
Robotics	0%
Digital education	0%

Chancellor Angela Merkel

Germany 🇩🇪

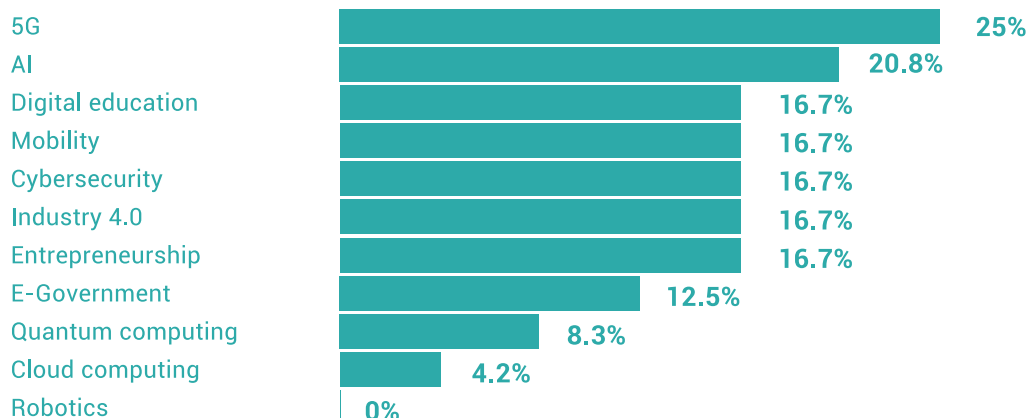### Focus on 5G and a broad scope of engagements

With 35 engagements, Angela Merkel is again Europe's second most digitally engaged head of state and government. She was very active with regards to infrastructure topics and took the top spot on the topic of 5G (25% of her engagements). In 2020, AI was also important for Merkel (20.8%), which earned her the top position on this topic in our analysis. She was also active with regards to digital education, mobility, cybersecurity, industry 4.0 and entrepreneurship (each 16.7%). Her activities included a number of private sector meetings, and with regards to quantum computing, she shares the top spot with her French counterpart (both 8.3%). However, like most of the European leaders, she did not discuss the future technology robotics.
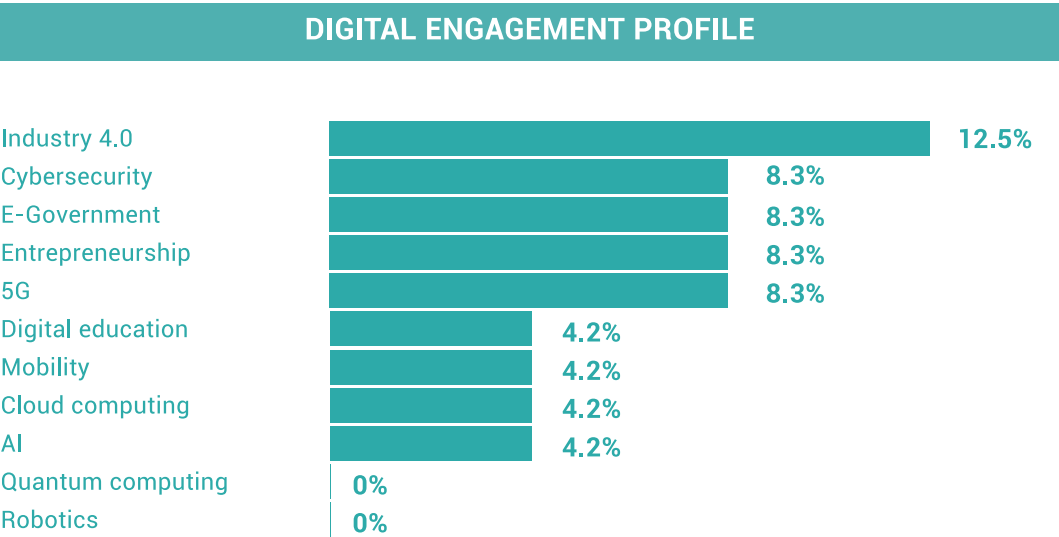
DIGITAL ENGAGEMENT PROFILE

Topic	Percentage
5G	25%
AI	20.8%
Digital education	16.7%
Mobility	16.7%
Cybersecurity	16.7%
Industry 4.0	16.7%
Entrepreneurship	16.7%
E-Government	12.5%
Quantum computing	8.3%
Cloud computing	4.2%
Robotics	0%

Prime Minister Kyriakos Mitsotakis

Greece 🇬🇷

Most engaged Southern European head of state and government, with a focus on industry 4.0
With 27 digital engagements, Kyriakos Mitsotakis was the most digitally engaged head of
state and government in Southern Europe. Mirroring the priorities of most European leaders,
he was most involved in infrastructure topics, notably in industry 4.0 (12.5%). He also engaged
with cybersecurity, e-government, entrepreneurship and 5G (each 8.3%), where his activities
included signing an agreement with Israel on sharing information on cybersecurity, as well
as an interview at the Lisbon Web Summit. Yet, he had no engagement with the key future
technologies quantum computing and robotics.

DIGITAL ENGAGEMENT PROFILE

Industry 4.0	12.5%
Cybersecurity	8.3%
E-Government	8.3%
Entrepreneurship	8.3%
5G	8.3%
Digital education	4.2%
Mobility	4.2%
Cloud computing	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%

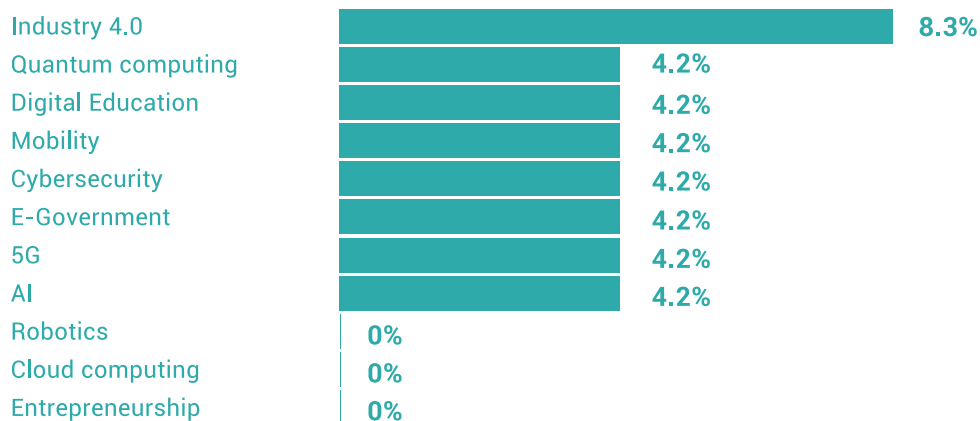# Prime Minister Viktor Orbán

Hungary

One of the least engaged leaders, with no attention paid to entrepreneurship

As in the previous year, digitalisation was apparently not an important priority for Viktor Orbán. With only six digital engagements in total – and together with Lithuania's prime ministers and Slovakia's Igor Matovič – he was Europe's least digitally engaged head of state and government. His few digital discussions included two related to industry 4.0 as well as singular engagements with quantum computing, digital education, mobility, cybersecurity, e-government, 5G and AI (4.2% for each). In addition to his very low overall engagement, Orbán showed interest in neither entrepreneurship nor the key future technologies cloud computing and robotics.

DIGITAL ENGAGEMENT PROFILE

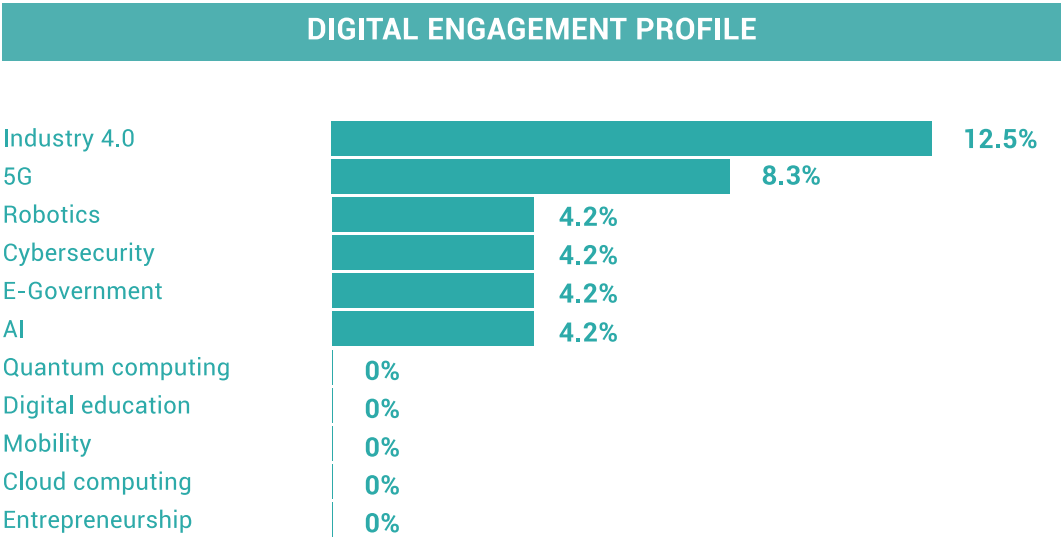|	
Industry 4.0	8.3%
Quantum computing	4.2%
Digital Education	4.2%
Mobility	4.2%
Cybersecurity	4.2%
E-Government	4.2%
5G	4.2%
AI	4.2%
Robotics	0%
Cloud computing	0%
Entrepreneurship	0%

Taoiseach Micheál Martin

Ireland 🇮🇪

Succeeded Leo Varadkar as prime minister on 27 June, 2020.

Ireland is one of Europe's most digitally advanced countries, but this is not reflected in digital engagement

With only 11 digital engagements, and ranked fifth-to-last together with Portugal and Sweden's leaders, Ireland's prime ministers were Western Europe's least digitally engaged heads of government. As in the previous year, this is surprising, as Ireland is considered one of the most digitally advanced countries in Europe. Ireland's prime ministers placed most emphasis on the infrastructure topics industry 4.0 and 5G (12.5% and 8.3%, respectively), where their activities included a meeting with Donald Trump on 5G cooperation. There was also some engagement in cybersecurity, e-government and AI (4.2%). While they were among only four European heads of state to address robotics (also 4.2%), they had no engagements with digital education, mobility or the key future technologies cloud computing and quantum computing.

DIGITAL ENGAGEMENT PROFILE

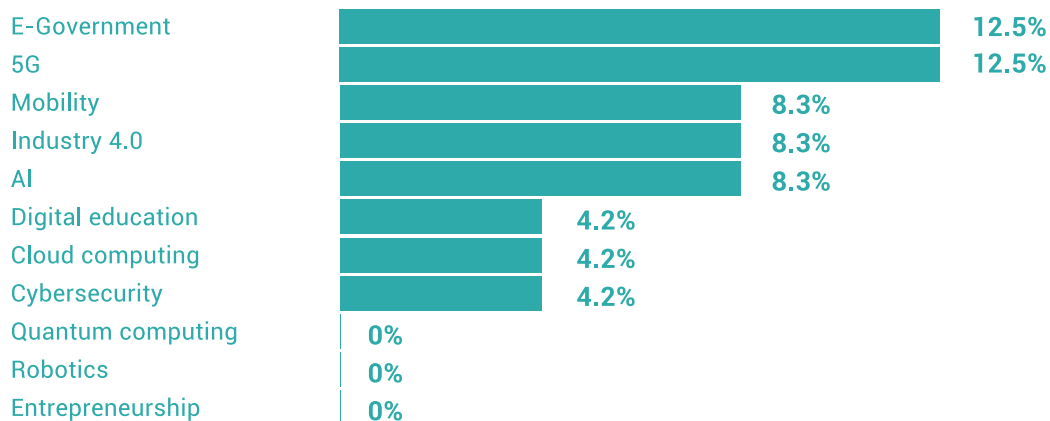| Topic	Percentage
Industry 4.0	12.5%
5G	8.3%
Robotics	4.2%
Cybersecurity	4.2%
E-Government	4.2%
AI	4.2%
Quantum computing	0%
Digital education	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%

Prime Minister Giuseppe Conte

Italy 🇮🇹

Average digital engagement, with no attention paid to entrepreneurship or key future technologies

As the leader of Europe's third largest economy, and with 17 engagements, Giuseppe Conte was averagely active when it comes to digital in 2020. Conte's top priorities were e-government and 5G (both 12.5%), and his engagement included meetings with Estonian president Kersti Kaljuliad on e-government and with Mike Pompeo on 5G. He had some activities on AI, industry 4.0 and mobility (each 8.3%). On the latter, he announced a consumer subsidy for e-vehicles and met with representatives of Fiat to talk about e-mobility. Conte did not address entrepreneurship in 2020 and had no engagements with the key future technologies quantum computing and robotics.

DIGITAL ENGAGEMENT PROFILE

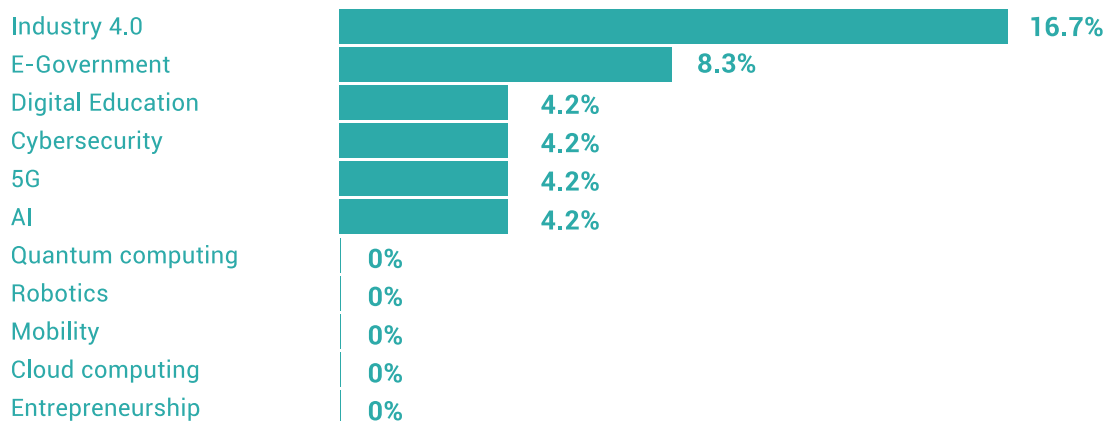| Category	Value
E-Government	12.5%
5G	12.5%
Mobility	8.3%
Industry 4.0	8.3%
AI	8.3%
Digital education	4.2%
Cloud computing	4.2%
Cybersecurity	4.2%
Quantum computing	0%
Robotics	0%
Entrepreneurship	0%

Prime Minister Krišjānis Kariņš

Latvia

Third most active engagement in Eastern Europe, with a focus on industry 4.0 and e-government

With 20 engagements, Latvia's Krišjānis Kariņš was the third most engaged in Eastern Europe, which puts him above the average of 18 engagements across European heads of state and government. As for many European leaders, industry 4.0 took the top spot for Kariņš (16.7% of engagements). In 2020, his activities on this topic included a meeting with the Saudi Arabian minister in charge of ICT to talk about cooperation, as well as a meeting with CERN representatives to become an associated member. E-government was his other focal point (8.3%), and he engaged somewhat with digital education, cybersecurity, 5G and AI (each 4.2%). He did not show any interest in the remaining five topics identified in the digital engagement index – including quantum computing and robotics.

DIGITAL ENGAGEMENT PROFILE

Topic	Percentage
Industry 4.0	16.7%
E-Government	8.3%
Digital Education	4.2%
Cybersecurity	4.2%
5G	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%

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Prime Minister Ingrida Šimonytė

Lithuania 🇱🇹

Succeeded Saulius Skvernelis as prime minister on 11 December, 2020.

Digitalisation still not an agenda priority

Together with Hungary's Viktor Orbán and his Slovakian counterparts in charge during 2020, Lithuania's prime ministers were amongst Europe's three least digitally engaged heads of government. They only completed six interactions around the topic of digitalisation, 8.3% of which were related to e-government, industry 4.0 and 5G, reflecting a focus on digital infrastructure technology as opposed to future technologies. They also had some engagement in cybersecurity (4.2%), related to partaking in a discussion at EUCO on the Covid-19 pandemic and the importance of investing in digital transformation. In our seven remaining topics, they did not have any digital engagements.

DIGITAL ENGAGEMENT PROFILE

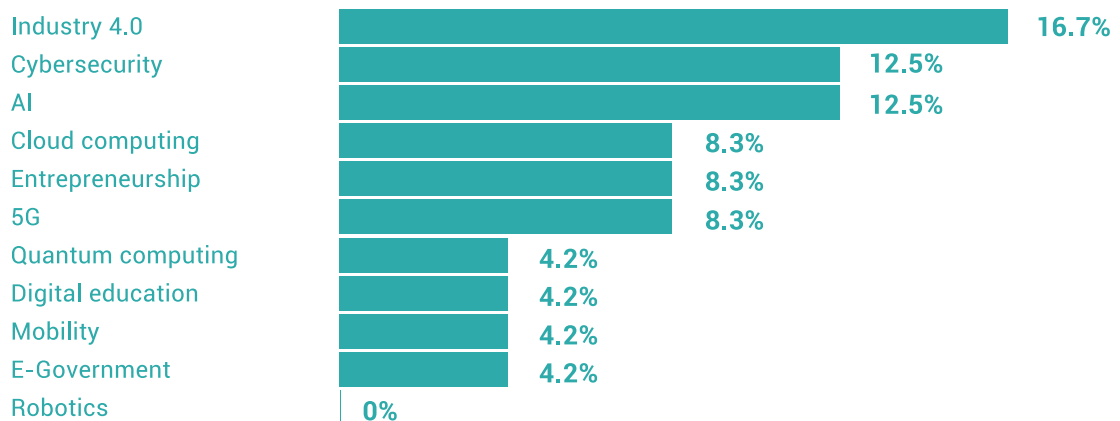| Topic	Percentage
E-Government	8.3%
Industry 4.0	8.3%
5G	8.3%
Cybersecurity	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%
AI	0%

Prime Minister Xavier Bettel

Luxembourg

Relatively high engagement and broad scope of topics

Tied with Finland's Sanna Marin for seventh place with 23 digital engagements, Xavier Bettel ranked relatively high in 2020. Industry 4.0 (16.7%) was the highest priority on his digital agenda. He also paid attention to cybersecurity and AI (both 12.5%), and his engagements included participating in a debate on AI and the rule of law, as well as delivering a speech at the Luxembourg Internet Days 2020 on network and cloud security. Topics that received only minor attention from Bettel included quantum computing, digital education, mobility and e-government (each 4.2%). Like many of his counterparts, he did not include robotics in his digital engagements.

DIGITAL ENGAGEMENT PROFILE

Topic	Percentage
Industry 4.0	16.7%
Cybersecurity	12.5%
AI	12.5%
Cloud computing	8.3%
Entrepreneurship	8.3%
5G	8.3%
Quantum computing	4.2%
Digital education	4.2%
Mobility	4.2%
E-Government	4.2%
Robotics	0%

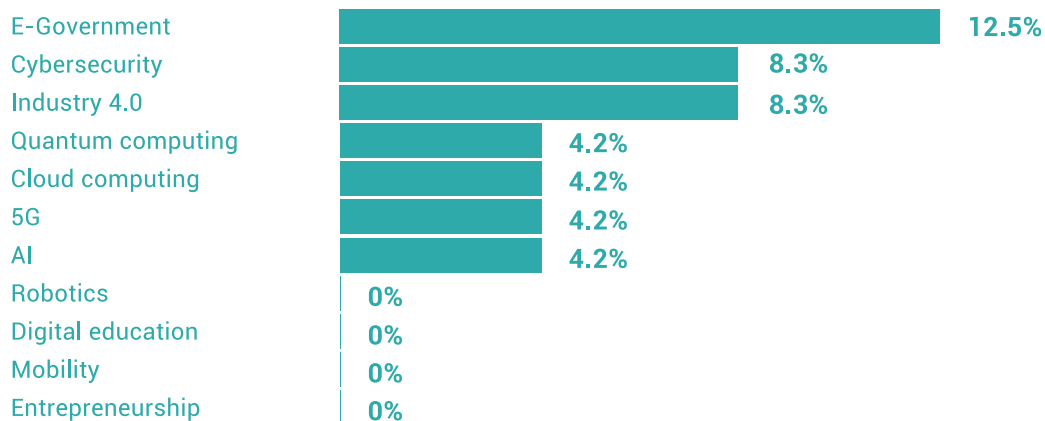# Prime Minister Robert Abela

Malta 🇲🇹

Succeeded Joseph Muscat as prime minister on 13 January, 2020.

Rather low engagement, mostly on e-government, cybersecurity and infrastructure

In 2020, Malta's prime ministers had a total of 10 digital engagements, which puts them in the bottom tercile of our ranking. They were most active with regards to e-government, including a message in relation to Public Service Week 2020. Further focus topics were cybersecurity and industry 4.0 (both 8.3%). The former involved a visit to the MITA offices, combined with an announcement of additional investments in the digital safety of the government. While there was some engagement with regards to quantum computing and cloud computing (both 4.2%), Malta's prime ministers did not touch upon digital education, mobility or entrepreneurship. As with many European government leaders, they also neglected the future technology of robotics.
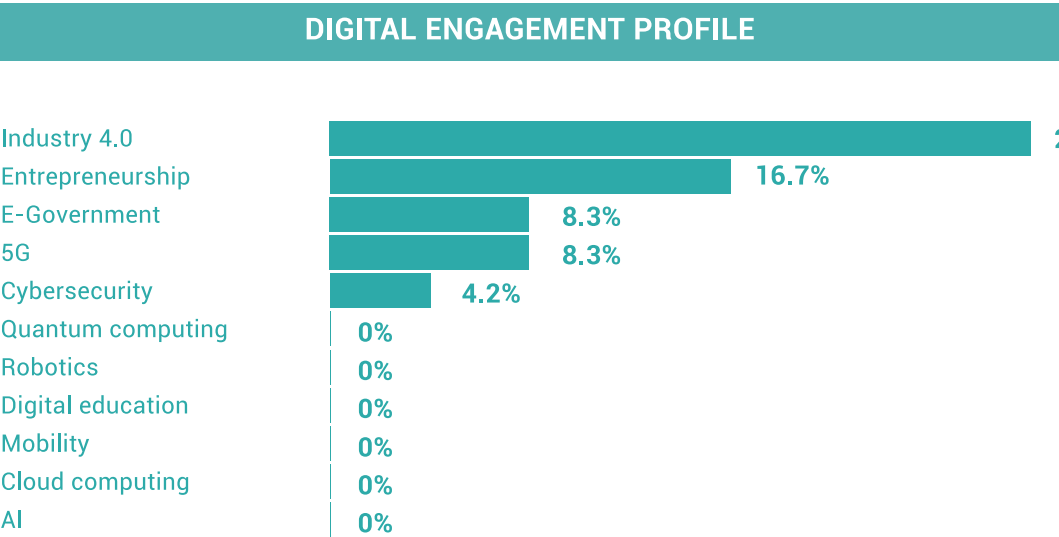
DIGITAL ENGAGEMENT PROFILE

Category	Value
E-Government	12.5%
Cybersecurity	8.3%
Industry 4.0	8.3%
Quantum computing	4.2%
Cloud computing	4.2%
5G	4.2%
AI	4.2%
Robotics	0%
Digital education	0%
Mobility	0%
Entrepreneurship	0%

Prime Minister Mark Rutte

Netherlands

Focus on infrastructure topics and entrepreneurship

Tied with Czech Republics' Andrej Babiš with 21 engagements, Mark Rutte ranked ninth in overall digital engagement. He was most engaged with industry 4.0 (29.2%), and his activities included a meeting with Ursula von der Leyen to discuss topics around the digital and industry agenda. Moreover, and as in the previous year, entrepreneurship was a priority (16.7%). For example, he met with "Denktank", a national think-tank, as well as with social tech start-up "Deedmob." He also engaged somewhat with e-government and 5G (both 8.3%) and had a bit of engagement with regards to cybersecurity (4.2%). He did not address the remaining six topics identified in the digital engagement index. These included not only AI and digital education, but also the key future technologies which were also neglected by many other leaders, notably quantum computing and robotics.

DIGITAL ENGAGEMENT PROFILE

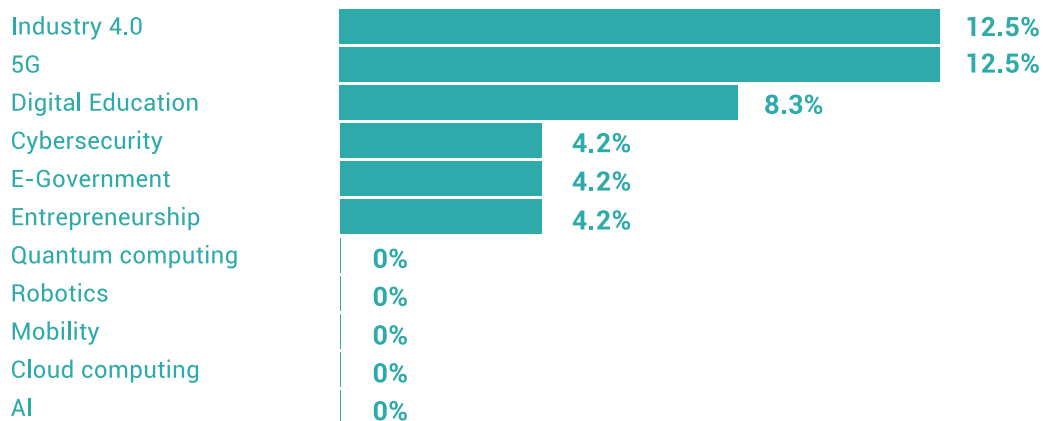| Topic	Percentage
Industry 4.0	29.2%
Entrepreneurship	16.7%
E-Government	8.3%
5G	8.3%
Cybersecurity	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%
Cloud computing	0%
AI	0%

Prime Minister Mateusz Morawiecki

Poland

Limited digital engagement, most of which on infrastructure topics

Ranked fourth-to-last on overall digital engagement with only ten entries, Mateusz Morawiecki's efforts were rather limited in 2020. His priorities generally mirror the infrastructure-focused approach of many European leaders, with most attention placed on industry 4.0 and 5G (both 12.5% of engagements). With regards to 5G, he also met with Mike Pompeo and wrote an article on that topic for the Daily Telegraph. Morawiecki addressed digital education (8.3%) and had a bit of engagement with cybersecurity, e-government and entrepreneurship (each 4.2%). Conversely, he did not address AI, mobility or cloud computing. He also did not engage with quantum computing and robotics.

DIGITAL ENGAGEMENT PROFILE

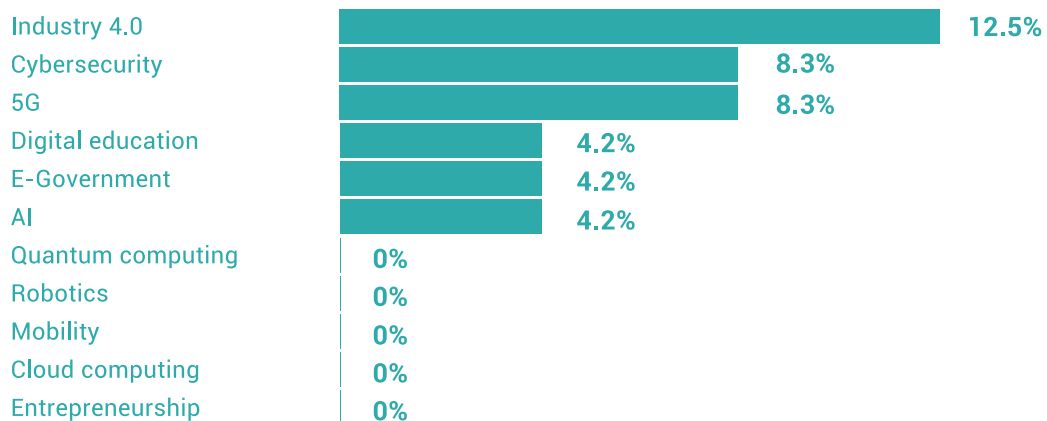|	
Industry 4.0	12.5%
5G	12.5%
Digital Education	8.3%
Cybersecurity	4.2%
E-Government	4.2%
Entrepreneurship	4.2%
Quantum computing	0%
Robotics	0%
Mobility	0%
Cloud computing	0%
AI	0%

Prime Minister António Costa

Portugal 🇵🇹

Low digital engagement without addressing future technologies and entrepreneurship

António Costa had only 11 digital engagements in 2020. As in the previous year, this reflects the low priority of digital topics on his agenda, with industry 4.0 (12.5%) taking top spot. He also paid attention to cybersecurity and 5G (both 8.3%). Notable activities in these areas include an invitation made by the Secretary-General of NATO to open a cybersecurity academy, and a speech at the UN General Assembly, which covered 5G and other digital topics. Also, he had a slight involvement with digital education, e-government and AI (each 4.2%). Costa did not cover a broad range of topics and only addressed six out of the 11 identified in the digital engagement index, notably neglecting not only quantum computing and robotics, but also entrepreneurship.

DIGITAL ENGAGEMENT PROFILE

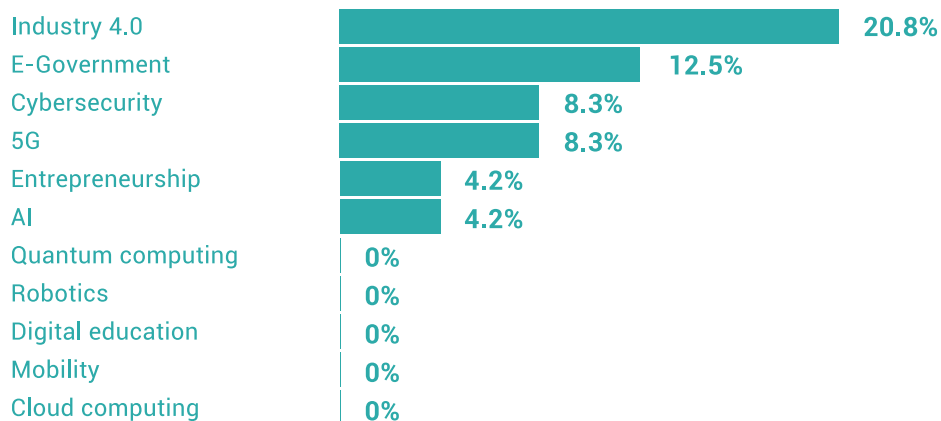| Topic	Percentage
Industry 4.0	12.5%
Cybersecurity	8.3%
5G	8.3%
Digital education	4.2%
E-Government	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%

Prime Minister Ludovic Orban

Romania 🇷🇴

Moderate engagement with a focus on industry 4.0

As in 2019, the prime minister of Romania sits in the middle of the pack. With 16 digital engagements, Ludovic Orban concentrated most on to industry 4.0 (20.8%). He also paid attention to cybersecurity and 5G (both 8.3%). Notable activities in these areas include the establishment of the National Directorate of Cyber Security and the official rejection of a 5G partnership with Huawei. Orban had a bit of engagement with entrepreneurship and AI (both 4.2%) while neglecting digital education and most key future technologies such as quantum computing, robotics, mobility and cloud computing.

DIGITAL ENGAGEMENT PROFILE

Category	Percentage
Industry 4.0	20.8%
E-Government	12.5%
Cybersecurity	8.3%
5G	8.3%
Entrepreneurship	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%
Cloud computing	0%

Prime Minister Igor Matovič

Slovakia 🇸🇰

Succeeded Peter Pellegrini as prime minister on 21 March, 2020.

Among the lowest digital engagement, with a complete neglect of key future technologies
In 2020, together with Hungary's Viktor Orbán and Lithuania's prime ministers, Slovakia's prime ministers were amongst Europe's three least digitally engaged heads of government. They had only six digital engagements in total between them, most of which focused on industry 4.0 and e-government (both 8.3%). The most notable activity included the announcement of a plan to enable e-voting. They also had a bit of engagement with mobility, cybersecurity and 5G (each 4.2%) while neglecting six out of the 11 areas of our analysis, including not only digital education, AI and entrepreneurship, but also most key future technologies such as quantum computing, robotics and cloud computing.

DIGITAL ENGAGEMENT PROFILE

E-Government	8.3%
Industry 4.0	8.3%
Mobility	4.2%
Cybersecurity	4.2%
5G	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Cloud computing	0%
Entrepreneurship	0%
AI	0%

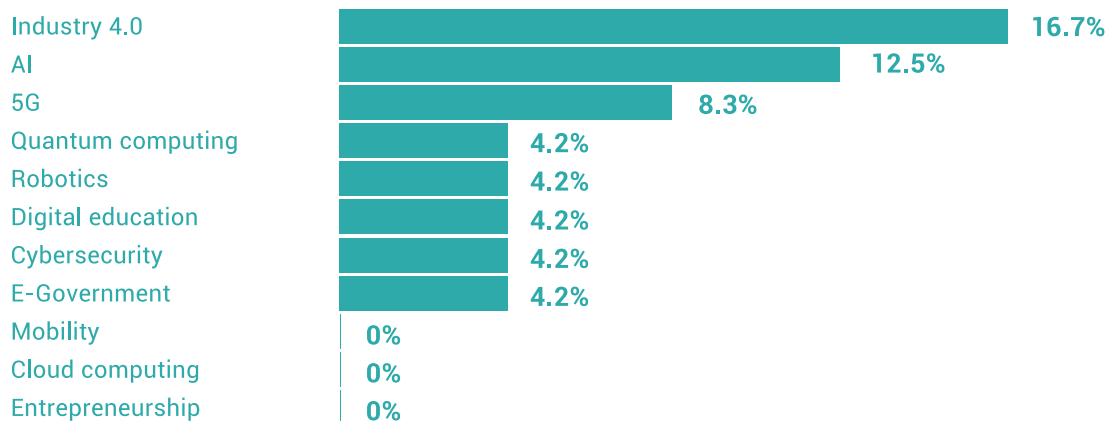# Prime Minister Janez Janša

Slovenia 🇸🇮

Succeeded Marjan Šarec as prime minister on 3 March, 2020.

Low digital engagement, mostly on infrastructure

With nine engagements, Slovenia's prime ministers were Europe's third least digitally engaged heads of government. From the few digital engagements that they did complete, most focused on infrastructure topics like industry 4.0 (16.7%) and 5G (8.3%). Furthermore, they paid some attention to AI (12.5%%.), most notably via a speech on the topic during the 15th Slovenian Economy Summit. While they had a bit of engagement with quantum computing, robotics, digital education, cybersecurity and e-government (each 4.2%), they completely neglected mobility, cloud computing and entrepreneurship.
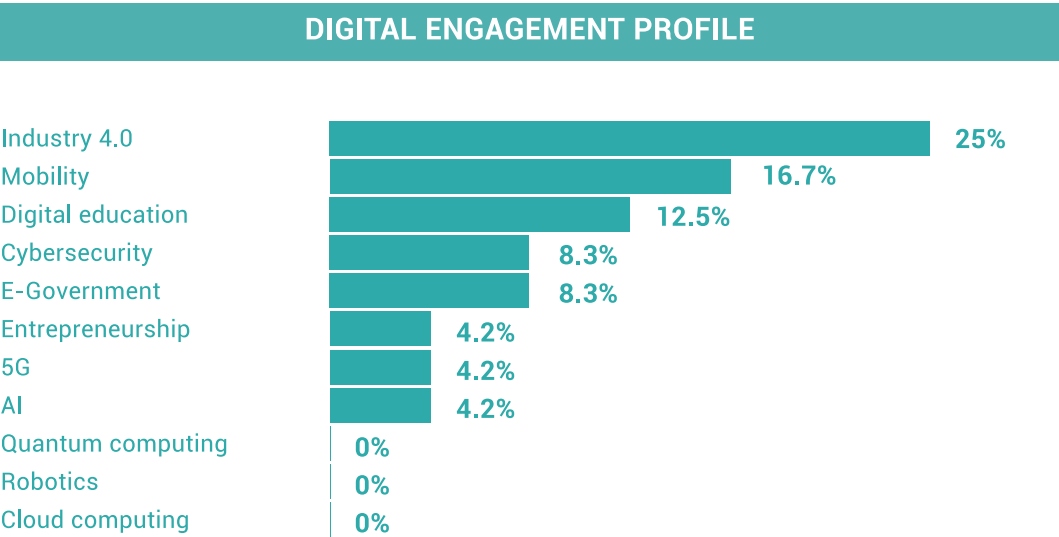
DIGITAL ENGAGEMENT PROFILE

Industry 4.0	16.7%
AI	12.5%
5G	8.3%
Quantum computing	4.2%
Robotics	4.2%
Digital education	4.2%
Cybersecurity	4.2%
E-Government	4.2%
Mobility	0%
Cloud computing	0%
Entrepreneurship	0%

Prime Minister Pedro Sánchez

Spain 🇪🇸

Focus on industry 4.0 and mobility while largely neglecting future technologies

With 26 digital engagements, Spanish prime minister Pedro Sánchez is ranked in the top tertile of the digital engagement index, which made him runner-up after his Greek counterpart amongst the Southern European countries. He had frequent engagements on industry 4.0 (25%) and delivered speeches on digital topics at conferences, such as the World Economic Forum, Web Summit and XV Congress of Editors. Other frequent interactions on digital topics include Mobility (16.7%) and digital education (12.5%). He did not get involved with key future technologies such as quantum computing, robotics and cloud computing.

DIGITAL ENGAGEMENT PROFILE

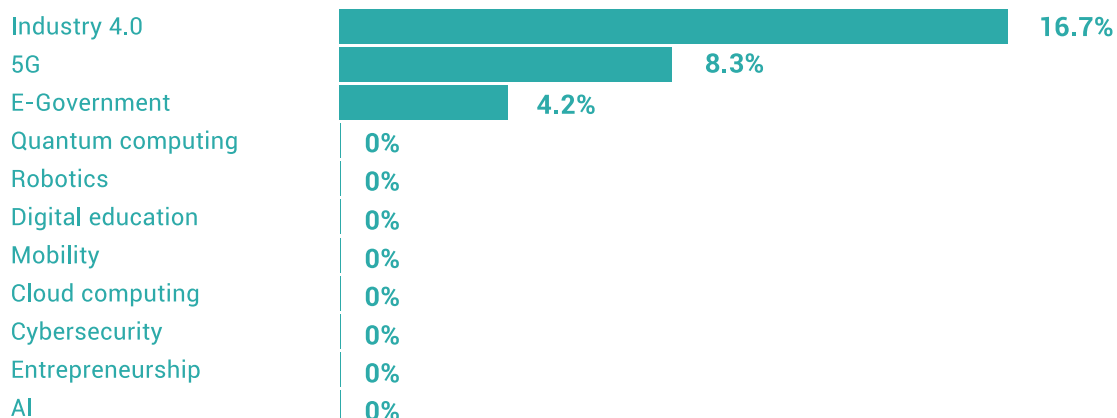| Topic	Percentage
Industry 4.0	25%
Mobility	16.7%
Digital education	12.5%
Cybersecurity	8.3%
E-Government	8.3%
Entrepreneurship	4.2%
5G	4.2%
AI	4.2%
Quantum computing	0%
Robotics	0%
Cloud computing	0%

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Prime Minister Stefan Löfven

Sweden 🇸🇪

Least digitally engaged Nordic leader

Swedish prime minister Stefan Löfven records a total of 11 digital engagements, which puts him in the bottom tertile of our ranking. He is also ranked last among the Nordic heads of state. As in the previous year, Löfven had a clear focus on digital infrastructure and the digitalisation of the legacy industry. A total of 16.7% of his engagements related to industry 4.0, including two political meetings with the National Innovation Council and a press conference on the launch of innovation partnership programmes. A further 8.3% of Löfven's digital engagements related to 5G, and while he was also somewhat involved in e-government (4.2% of engagements), he did not interact with any other area in 2020.

DIGITAL ENGAGEMENT PROFILE

Industry 4.0	16.7%
5G	8.3%
E-Government	4.2%
Quantum computing	0%
Robotics	0%
Digital education	0%
Mobility	0%
Cloud computing	0%
Cybersecurity	0%
Entrepreneurship	0%
AI	0%

» Authors

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Professor Dr. Philip Meissner is the director of the European Center for Digital Competitiveness and the Chair of Strategic Management and Decision-Making at ESCP Business School in Berlin. In addition to strategic decision-making processes, Professor Meissner deals with the influence and effects of digital transformation in companies and on society.

Prof. Dr. Klaus Schweinsberg

Professor Dr. Klaus Schweinsberg is the founder of the Centre for Strategy and Higher Leadership. As a personal consultant and coach, Professor Schweinsberg works for renowned entrepreneurs and top managers in Germany and abroad. In 2009, he was appointed to the circle of Young Global Leaders of the World Economic Forum. He is an Affiliate Professor at ESCP Business School.

Dr. Christian Poensgen

Dr. Christian Poensgen is the director of the European Center for Digital Competitiveness at ESCP Business School in Berlin. Previously, he worked as the Senior Fellow Future of Work in the German Bundestag on various digital competitiveness projects, notably in the areas of continuing education, blockchain and agile administration. He is an ada Fellow and a mentor at a number of leading accelerators.

Klára Moozová

Klára Moozová is a research assistant at the European Center for Digital Competitiveness and is currently completing the MSc in Strategy & Digital Business at ESCP Business School. She has worked at Tesla and ElectronicPartner, organised a virtual TEDx conference and completed a BSc in German and Business at the University of Warwick.

» European Center for Digital Competitiveness

BY ESCP BUSINESS SCHOOL

The European Center for Digital Competitiveness was founded at ESCP Europe Business School in Berlin with the goal of bringing digital competitiveness to the political and public debate, where it currently only plays a minor role.

Given the digital revolution that our economy and society currently face, digital competitiveness must take center stage in debates to secure our prosperity for the future.

Similarly, in this increasingly dynamic environment we want to support the initiative to position Europe as a global leader for the responsible application of technology for the benefit of society.

» About ESCP Business School

ESCP Business School was founded in 1819 and is the first and oldest business school in the world. Ever since, it has been training managers and entrepreneurs. ESCP Business School now offers Bachelor and Master programs as well as MBA, Executive MBA and PhD programs and executive education seminars.

With its multi-campus model in Berlin, London, Madrid, Paris, Turin and Warsaw, which has been in existence since 1973, ESCP Business School actively lives and promotes the European idea. Every year, more than 6,000 students complete their studies at the Business School, and more than 5,000 managers and executives take part in seminars and education programs. They all come from 120 different countries.

In Germany, ESCP Business School in Berlin is a scientific university recognized by the state. As such, it can award degrees, including doctorates. ESCP Business School in Berlin is the first university in Germany to be recognized by all three major international university accreditation agencies: AACSB, EFMD (EQUIS) and AMBA. ESCP Europe is among the 1% of business schools in the world that have the so-called „Triple Crown". The success of the university is also reflected in the international FT European Business School Ranking, where ESCP Business School regularly occupies top positions.

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