Digital Transformation

Technology Consultancy Service

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Agenda

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What Is meant by Digital Transformation

Digital transformation is the profound transformation of business and organizational

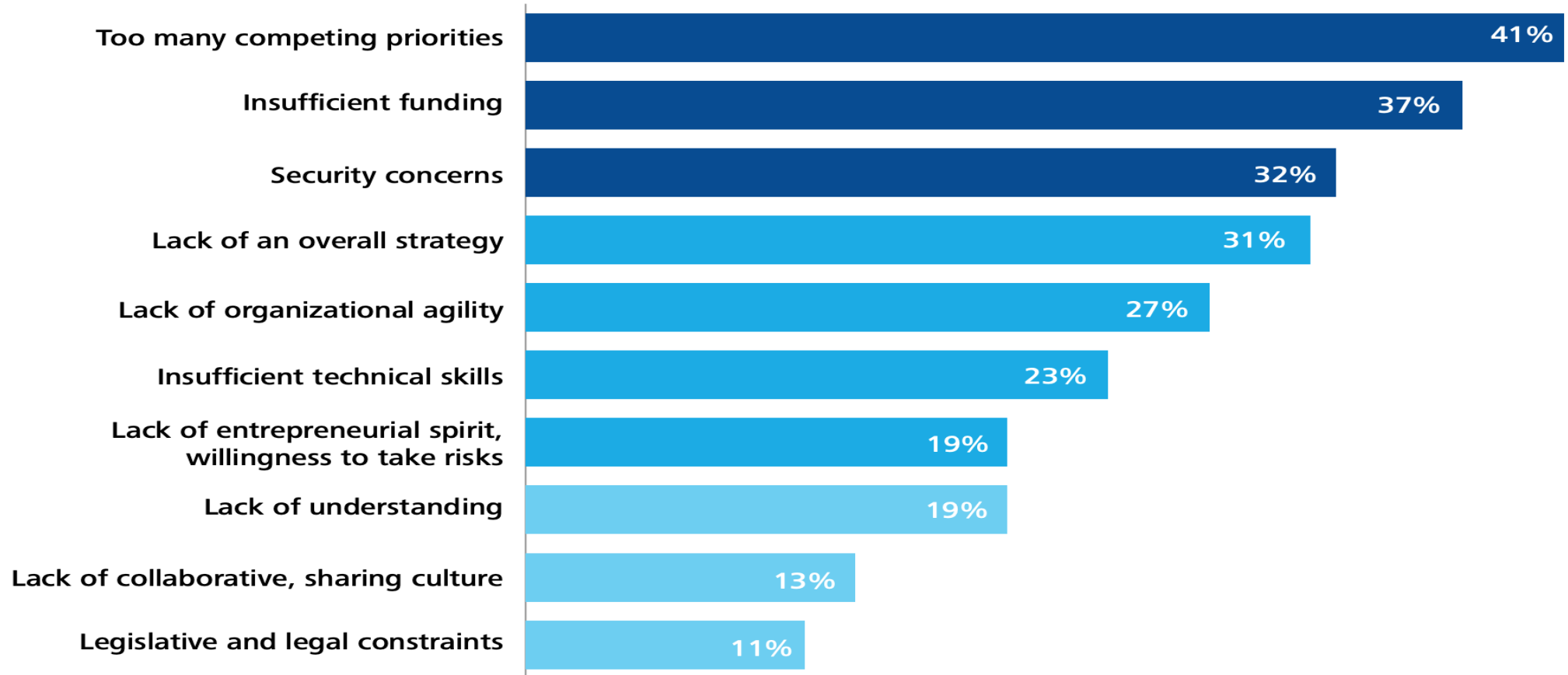- Activities

- Processes

- Competencies

- Models

to fully leverage the changes and opportunities of a mix of digital technologies and their accelerating impact across society in a strategic and prioritized way, with present and future shifts in mind.

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Digital transformation in government and the public sector

where government is involved such as public healthcare, transport, public infrastructure, policing and defense, citizen services or regulation, are organized, there are many commonalities in the challenges and priorities, not in the least from the digital transformation perspective.

While from the citizen experience perspective the role of digital transformation becomes clear in areas such as e-government and digital identity programs, in many other areas transparency, efficiency and coordination are key in the digitization of processes and project management.

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Figure 14. Top barriers that impede the organization from taking advantage of digital trends

Barrier	Percentage
Too many competing priorities	41%
Insufficient funding	37%
Security concerns	32%
Lack of an overall strategy	31%
Lack of organizational agility	27%
Insufficient technical skills	23%
Lack of entrepreneurial spirit, willingness to take risks	19%
Lack of understanding	19%
Lack of collaborative, sharing culture	13%
Legislative and legal constraints	11%

Graphic: Deloitte University Press | DUPress.com

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- **Examples of Governmental digital transformation**

o One country where recently more strategic initiatives and actions in the realm of digitization and digital transformation were taken, is Australia where in 2015 the Digital Transformation Office was launched.

> The first goal: creating a single digital identity to enable citizens to – digitally – access government services with one logon process

o Another example is the UK where a digital transformation program was launched as mentioned

> In February 2016, the UK government also announced a new advisory board to help shape its digital transformation and government digital services program with what it calls 'digital heavyweights'

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IDC's DX Pathways
How IDC Sees Industries Transforming

DIGITAL NATIVE ENTERPRISE

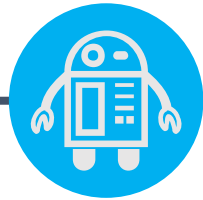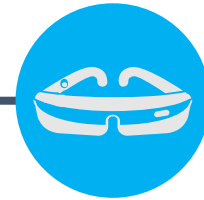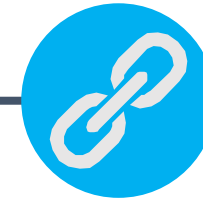|					
15%	**40%**	**50%**	**40%**	**20%**	**25%**
2019	**2020**	**2021**	**2026**	**2020**	**2026**
Usage Based Insurance (UBI) will account for at least 15% of the global vehicle insurance market	40% of ecommerce is enabled by cognitive personal shoppers and social networks	50% of large retailers use robots in customer facing roles such as store greeters, or assistants.	more than 40% of field service calls in manufacturing are managed by virtual service technicians.	Blockchain/ distributed ledger technology will be adopted by 20% of trade finance worldwide	25% of paramedics and emergency rooms use field-ready 3D printers to deliver real-time wound care.

IDC ANALYZE THE FUTURE

II

Sweden case study

Targets	Description
Digital competence	In Sweden, everyone will be able to develop and use his/her digital skills.
Digital security	In Sweden, there are the best conditions for everyone to safely participate, take responsibility and have the confidence in the digital society.
Digital innovation	In Sweden, there are the best conditions for digitally driven innovations to be developed, disseminated and used.
Digital leadership	In Sweden, improvements in efficiency and quality through digitalisation should be relevant, purposeful and lawful.
Digital infrastructure	The whole of Sweden should have access to infrastructure allowing for fast broadband, stable mobile services and supporting digitalisation.

Source: Government Offices of Sweden (2017b), "For Sustainable Digital Transformation in Sweden: A Digital Strategy".

Challenges to meet the objectives

Notwithstanding Sweden's strong performance in terms of broadband connectivity, when compared to other OECD countries, some challenges persist in meeting objectives for the current and future Digital Agenda.

Certain areas for improvement in terms of connectivity include:

- enhancing co-ordination among national, regional, and local strategies and plans for broadband (fiber) deployment, and fostering robust fiber networks

- promoting the deployment of high-speed broadband networks in sparsely populated areas

- spurring the uptake of IPv6.

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Digital infrastructure

The digital infrastructure goal entails an improvement and reinforcement of infrastructure for electronic communications that are crucial for transmitting data.

Digital infrastructures cover everything from (hard) physical lines to the (soft) systems for traffic management.

Broadband infrastructure provides more opportunities to access social services, run a business and contribute to social cohesion.

For a modern society, building infrastructure is a prerequisite, and digitalization is dependent on efficient infrastructure.

The area can also be linked to the goal of Agenda 2030 for Sustainable Development for building resilient infrastructure, promoting an inclusive and sustainable industrialization and innovation.

The Digitalization Commission has identified broadband and soft infrastructure as necessary conditions for strengthening competitiveness and for reaching efficiency gains.

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Important areas under this target include:

- Improved access to "hard" infrastructure
- Development of "soft" infrastructure.

Broadband Latest Technologies

III

- Four Breaking Broadband Technologies

Vectored VDSL

G.now

G.fast

GPON

IV Mobile Data

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Cellular Network

Technology/Features	1G	2G/2.5G	3G	4G	5G
Start/ Development	1970/ 1984	1980/ 1999	1990/ 2002	2000/ 2010	2010/ 2015
Data Bandwidth	2 kbps	14.4-64kpbs	2 Mbps	2000 Mbps to1 Gbps for low mobility	1 Gbps and higher
Standards	AMPS	2G:TDMA, CDMS, GSM 2.5:GPRS, EDGE, 1xRTT	WCDMA, CDMA-2000	Single unified standard	Single Unified standard
Technology	Analog Cellular technology	Digital cellular technology	Broad bandwidth CDMA, IP technology	Unified IP and seamless combination of broadband, LAN/WAN/PAN and WLAN	Unified IP and Seamless combination of broadband, LAN/WAN/PAN /WLAN and wwww
Service	Mobile Telephony (voice)	2G: Digital voice, Short Messaging 2.5G: Higher capacity Packetized data	Integrated Higher Quality audio, video and data	Dynamic Information Access, Wearable devices	Dynamic Information Access, wearable device with IA capabilities
Multiplexing	FDMA	TDMA, CDMA	CDMA	CDMA	CDMA
Switching	Circuit	2G: Circuit 2.5G: Circuit for access network & air interface; packet for core network and data	Packet except circuit for air interface	All packet	All packet
Core Network	PSTN	PSTN	Packet network	Internet	Internet
Handoff	Horizontal	Horizontal	Horizontal	Horizontal and vertical	Horizontal and vertical

IPV6

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Difference between ipv4 and ipv6

Feature	IPv4	IPv6
Address length	32 bits	128 bits
IPSec support	Optional	Required
QoS support	Some	Better
Fragmentation	Hosts and routers	Hosts only
Packet size	576 bytes	1280 bytes
Checksum in header	Yes	No
Options in header	Yes	No
Link-layer address resolution	ARP (broadcast)	Multicast Neighbor Discovery Messages
Multicast membership	IGMP	Multicast Listener Discovery (MLD)
Router Discovery	Optional	Required
Uses broadcasts	Yes	No
Configuration	Manual, DHCP	Automatic, DHCP
DNS name queries	Uses A records	Uses AAAA records
DNS reverse queries	Uses IN-ADDR.ARPA	Uses IP6.INT

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