



Direct Carrier Billing Report 2022

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Introduction.

Without connectivity and digitalisation, countries' economies, businesses, families, as well as employment, education, leisure, and personal relationships, could not have succeeded as they have. Something has changed in the landscape: users are now setting the pace of digital transformation, and online businesses outperform expectations.

Consumption patterns adapt not just to habits imposed by mobility and time but also to a shift in users' priorities in all areas: personal, work, and social. The digital economy has been consolidating at an unpredictably fast pace.

Almost 8.3B mobile phones were connected worldwide in February 2022. It's 2.9% higher than the previous year. Nearly 5B internet users, 62.5% of the world's population are registered (an increase of 4%: 192 million more people came online¹). Internet time use worldwide per day is almost 7 hours on average.

Users are increasingly willing to pay for digital content and access it anytime, anywhere and from different traditional or the latest devices, such as Smart Speakers or VR terminals.

More than 3B people consume digital content on a global scale. The European population accounts for 17% of this figure². At the same time, e-commerce continues its upward trend: almost 6 out of 10 Internet users (58.4%) already buy something online every week. This development is partly due to the recent rapid increase in shopping on social media. There are now 4.6B social media users globally, representing more than 58% of the world's population. New users over the previous year account for 424 million, a 10% increase.

The average time spent on these channels has increased to 2.27 hours. In this context, companies and brands have had to rapidly adapt to the demands of consumers, who have decided to incorporate social commerce into their purchasing options³.

While DCB spending in the different digital content categories continues to rise, other products and services transactions will progressively gain ground. Driven by increased connectivity, physical restrictions, and the stability of online transactions, digital merchants will

increase their interest in mobile payment for content and new segments.

User typology and the way digital services are consumed have changed. There are now more leisure periods throughout the day, but they are shorter in duration. And, when more devices, connections, moments, and requirements enter the mix, the user experience becomes increasingly complex. Consumers want a smooth experience from connection to payment, and they cherish the buying process's seamlessness.

The subscription economy is also evolving to a new level, driven by the new consuming patterns of a hyper-connected society and consumers, where digital payment solutions, particularly Direct Carrier Billing (DCB), will continue to consolidate as a choice responding to these new liquid user experiences.

¹Global overview report 2022 We Area Social y Hootsuite

²Telecoming y Juniper Research

³Global overview report 2022 We Area Social y Hootsuite

DCB, a driver for the digital economy.

In recent years, Direct Carrier Billing was already a real alternative to pay for content and services in the most digitally developed countries. Now its market horizons are expanding considerably. This payment technology continues to gain ground as an attractive option both in under-banked countries and for new consumer profiles, as well as for a much wider range of transactions.

Almost

91%

of the global DCB market belongs to the consumption of digital content.

Turnover and share of DCB market by region

In global terms, Direct Carrier Billing (DCB) for digital content, commerce and services will grow from \$60B in 2022 to \$94.4B in 2026, with year-on-year increases of around 11%⁴.

Europe will contribute 20% to the global figures in 2022, with a turnover of almost \$12B. Although it will continue to grow at a rate of around 7% per year and will have a turnover of almost \$16B in 2026, its share of the global market will be 17% by then, due to the development of DCB in other regions of the world.

G1.- TOTAL SPENDING ATTRIBUTED TO DCB⁵

	2022	2023	2024	2025	2026
Global	\$60.0B	\$66.3B	\$73.8B	\$83.0B	\$94.4B
Europe	\$11.8B	\$12.6B	\$13.5B	\$14.5B	\$15.9B

G2.- TOTAL DCB SPENDING ATTRIBUTED TO DIGITAL CONTENT

	2022	2023	2024	2025	2026
Global	\$54.5B	\$58.7B	\$63.4B	\$68.5B	\$74.5B
Europe	\$11.5B	\$12.1B	\$12.8B	\$13.5B	\$14.4B

Nearly 91% of global DCB market is related to digital content consumption. This turnover of \$54.5B in 2022 will increase progressively in the coming years, at a rate of more than 11% each year, reaching \$74.5B in 2026 (37% more than in 2022).

G3.- DCB MARKET GROWTH (%)

	2021 2022	2022 2023	2023 2024	2024 2025	2025 2026
Global	10%	11%	11%	12%	14%
Europe	7%	6%	7%	8%	9%

However, in the period under review, transactions for other products and services will gain ground over digital content and will account for 79% of the DCB market by 2026.

Spending via DCB will grow in all European countries by 12% on average over the next five years, led by Germany and the UK, far from France, Spain and Italy.

G4.- TOTAL DCB SPENDING – EUROPE'S TOP 5

	2022	2023	2024	2025	2026
Germany	\$2.5B	\$2.6B	\$2.8B	\$2.9B	\$3.1B
U.K.	\$1.5B	\$1.6B	\$1.7B	\$1.9B	\$2.1B
France	\$0.7B	\$0.8B	\$0.8B	\$0.8B	\$0.9B
Spain	\$0.6B	\$0.7B	\$0.7B	\$0.8B	\$0.9B
Italy	\$0.5B	\$0.6B	\$0.6B	\$0.7B	\$0.7B

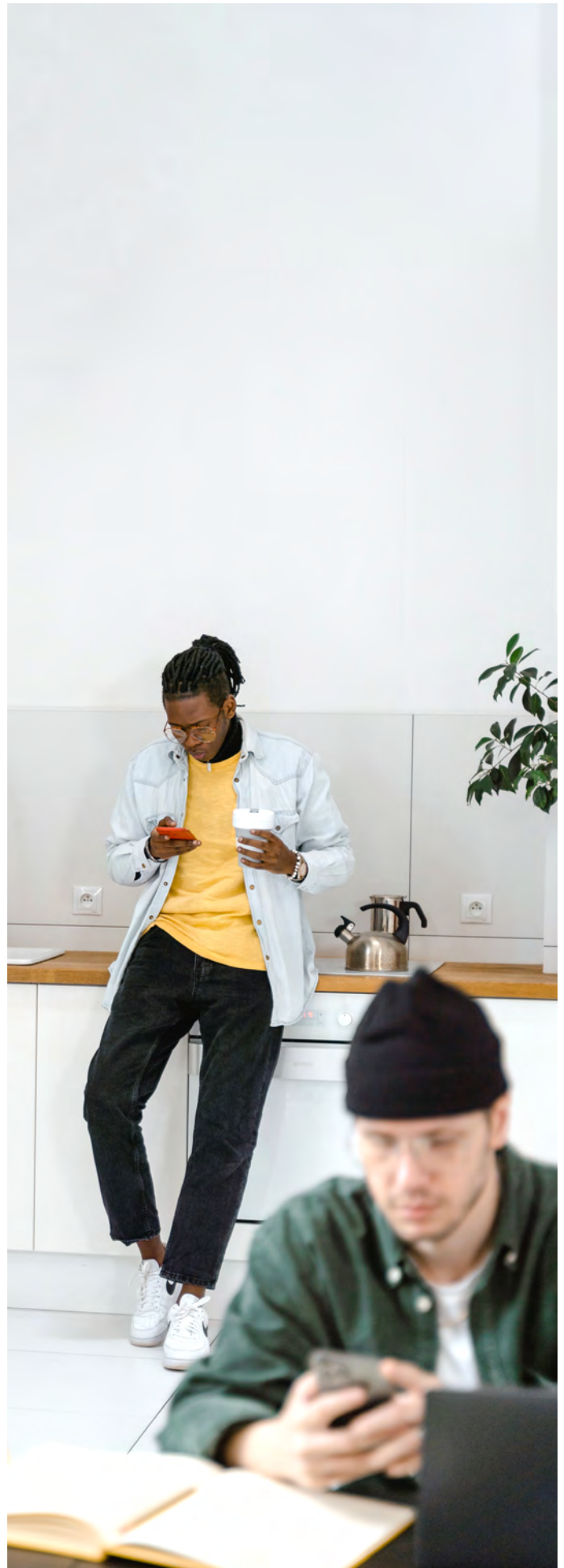
Europeans will pay \$11.8B on their mobile bill this year, accounting for around 20% of the global market. With an average year-on-year growth of almost 8%, it is estimated to reach \$15.9B by 2026. Portugal and Norway will experience the most significant increases in the DCB market during the coming years.

⁴Telecoming with 'Carrier Billing 2022-2026 Market Trends Strategies' data from Juniper Research.

⁵Including digital content, physical goods, ticketing and gambling transactions.

Evolution by category

Digital content is no longer free, and users are willing to pay for it. In 2021, we spent almost \$300 billion worldwide on digital content (over half were video games).



Global

Games and video remain the most interesting services for users, accounting for 75% of the DCB digital content market. The games industry leads the ranking, and its turnover will double in the next five years.

DCB as an industry driver

DCB is a technology that allows users to be charged on their mobile bill. This nature has consolidated it as the preferred payment tech in sectors such as games and video. This is due to the fact that these types of services are consumed on the same device on which they are purchased. It is a quick purchase model, with small amounts, closely linked to entertainment and perfect for emotion-driven users.

Therefore, DCB allows the shopping experience to be fast and as mobile as the purchased service itself. This transparency for the user is key for mobile consumption, significantly increasing conversions and communities.

G5.- DCB SPENDING BY CONTENT CATEGORY (TOTAL WORLD)⁶

	2022	2023	2024	2025	2026
Games	\$30.7B	\$32.2B	\$33.9B	\$35.8B	\$38.0B
Video	\$14.3B	\$15.9B	\$17.6B	\$19.4B	\$21.3B
Music	\$4.3B	\$4.9B	\$5.5B	\$6.2B	\$7.0B
Lifestyle	\$3.2B	\$3.6B	\$4.2B	\$4.8B	\$5.5B
ePublishing	\$1.9B	\$2.1B	\$2.2B	\$2.4B	\$2.7B
TOTAL	\$54.5B	\$58.7B	\$63.4B	\$68.5B	\$74.5B

Digital games industry is still the largest source of revenue for DCB. It now accounts for 51% of the market and will continue to grow in the coming years, but at a slower pace than video and other categories.

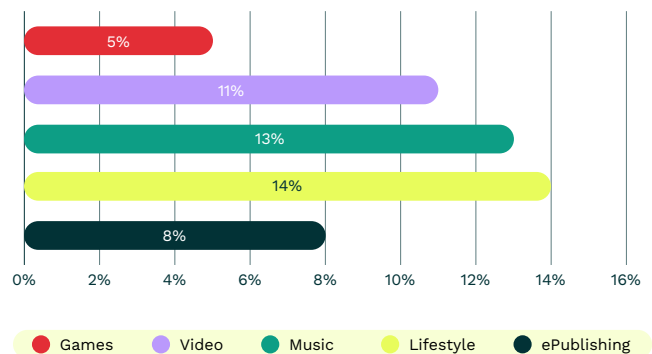
Global revenue attributable to DCB in games industry will grow at a year-on-year rate of 16%, from almost \$31B this year to \$38B by the end of the period, when it will account for 40% of DCB incomes.

The video industry will invoice via DCB more than \$14B in 2022 (24% of the market) and more than \$21B in 2026 (23% share). It is due to the retention of subscribers who 2 years ago joined the large audiovisual platforms for series, films and streaming services during lockdown. Video accounts for 26% of DCB's revenues in 2022 and will gain three points (29%) in 2026.

Music is yet another key segment for DCB expansion, driven by growing subscriptions. DCB revenue in this category will grow at a slower pace, from \$4.3B in 2022 to almost \$7B in 2026. Nonetheless, its share of the overall market is 7% during the whole period.

Lifestyle content consumption (health, relationships, wellness, sport and leisure) and publications (eBooks, newspapers and digital magazines) will continue to grow through subscriptions. Users increasingly rely on DCB as a convenient and secure tech for recurring and small-amount payments in these industries.

G6.- DCB PAYMENT GROWTH BY DIGITAL CONTENT CATEGORY 2022-2023 (GLOBAL)



⁶Telecoming with 'Carrier Billing 2022-2026 Market Trends Strategies' data from Juniper Research.

Europe

While 53% of the European population currently consumes video games from their tablet or smartphone, the figure will reach 62%⁷ by 2026. Europe now accounts for 18% of global digital games consumption paid via DCB, with revenues of \$5.4B in 2022. However, this industry will grow slower in the coming years, up to \$6B, reducing its share to 16% of the global market.

Video content paid via DCB in Europe will account for 19% of the global market in 2022, with almost \$2.8B in revenues. Such as in the games category, video content billed through the carrier will grow moderately to \$3.5B, representing a 16% share of the global Carrier Billing market by 2026.

12% of the European population currently consumes digital music, which will reach 19% by 2026. Out of these 168 million users, 164 million will be subscribers. Along with the same



performance of games and video, DCB turnover for music in Europe will increase from \$1.6B to just over \$2B in five years (growth of around 8%, below the global average of 13%). The weight of this category in the overall figures will fall by 6 points, from 37% to 31%.

The digital lifestyle DCB consumption in Europe will grow two points above the global average. In 2022, this industry turnover will reach \$863M, representing 27% of the worldwide market, and will be near \$1.6B in 2026, accounting for 29% of the global demand.

G7.- TURNOVER ATTRIBUTED TO DCB BY CONTENT CATEGORY IN EUROPE

	2022	2023	2024	2025	2026
Games	\$5.5B	\$5.6B	\$5.7B	\$5.8B	\$5.9B
Video	\$2.8B	\$2.9B	\$3.1B	\$3.3B	\$3.5B
Música	\$1.6B	\$1.7B	\$1.9B	\$2.0B	\$2.2B
Lifestyle	\$0.9B	\$1.0B	\$1.2B	\$1.3B	\$1.6B
ePublishing	\$0.8B	\$0.9B	\$1.0B	\$1.1B	\$1.2B



⁷Telecoming 'Digital content. Spain and Europe Evolution 2021-2026'

Europe represents

44.5%

of the global ePublishing market through DCB.

Smartphones lead while IoT (Internet of Things) gains field.

The accelerated 5G network rollout has led to a significant increase in mobile data traffic, now almost 300 times higher than in 2011 and with more than 5.5B new smartphone subscriptions.⁸ The fifth-generation network is one of the main levers for high-quality immersive experiences, which will impact many industries in a way we cannot yet predict.

By 2022, 82% of mobile data traffic will be video. The streaming video market will generate \$125B in revenue. It is estimated that, in 2026, we will achieve \$3.34B of digital content spending from virtual reality devices' use.

Smartphones remain the absolute leaders in DCB. Currently, 6 out of every 10 euros of DCB spending is made from a smartphone on a global scale. During the upcoming five years, smartphones will gradually give way to other connected devices, positioning themselves ahead of tablets for DCB purchases. Currently led by mobiles, connected objects will account for 35% of the global carrier payment market by 2026.

⁸Ericsson Mobility Report (Nov. 2021)





Market evolution by device

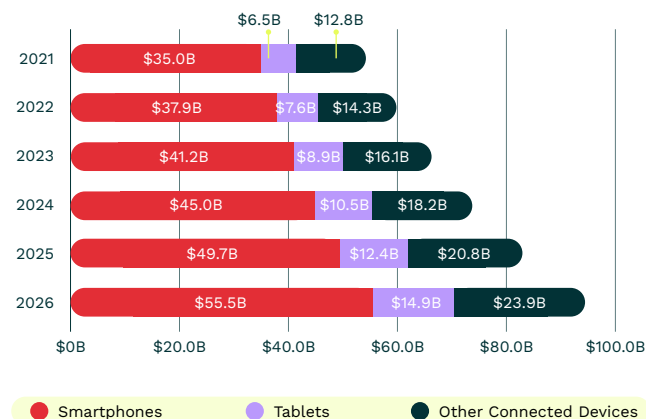
Globally 63% of DCB transactions are now made on mobile phones, representing a turnover of \$37B and growing to \$55.5B by 2026.

The global number of connected IoT (internet of things) devices is estimated to grow by 9% in 2025, reaching 27B connections. This figure could be even higher considering that by 2023 there will be 5.3B internet users (66% of the world's population) and 29.3B connected devices⁹.

Digital consumption paid via DCB from other connected devices will account for more than 2 out of 10 euros during the period considered in this report, relegating the tablet in these transactions, which will, however, still account for 13% to 16% of total spending.

DCB payments for digital content from connected devices other than smartphones and tablets, will increase from \$14B this year to over \$24B by 2026.

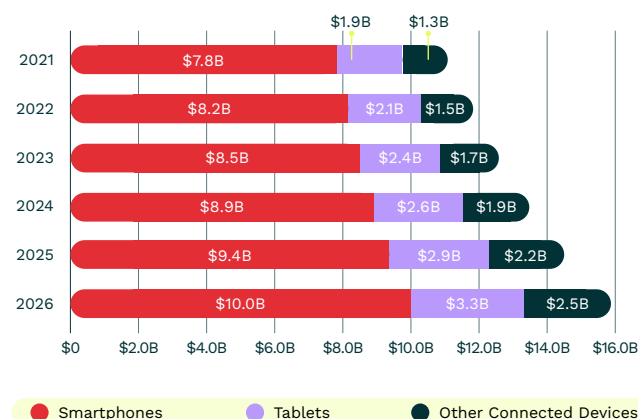
G8.- TURNOVER ATTRIBUTED TO DCB BY DEVICE (GLOBAL)



Smartphones in Europe account for 22% of the worldwide DCB industry, worth more than \$8B this year and nearly \$10B by 2026. 7 out of 10 euros paid via DCB come from a smartphone user. With a turnover of little over \$2B in 2022 and \$3.3B in five years in Europe, the tablet is the second most popular device for DCB payments. This choice will become increasingly popular in the upcoming years.

DCB spending on other connected devices in Europe, as opposed to the global trend, stays below tablets' figures, but it is expected to rapidly grow and become 16% of the market in 2026.

G9.- TURNOVER ATTRIBUTED TO DCB BY DEVICE TYPE (EUROPE)



G10.- DISTRIBUTION OF THE EUROPEAN DCB MARKET BY DEVICE TYPE (%)

	2022	2023	2024	2025	2026
Smartphones	69%	68%	66%	65%	63%
Tablets	18%	19%	19%	20%	21%
Other Connected Devices	13%	14%	14%	15%	16%

⁹Data from IOT Analytics and Annul Internet Report Cisco 2021

63%

of the DCB payments
worldwide is now made
from the mobile phone.





Opportunities for DCB in the new digital ecosystem.

In the last two years, we have witnessed a growing demand for digital content and new trends in consumption habits. In addition, we cannot forget the technological progress brought by mobile devices and the improvements 5G technology can usher in the mobile experience.

Spain is at the forefront of Europe in digital infrastructures. By 2025, the country will reach 100% optical fibre coverage, and the 5G network will get 80% of the population. This scenario will continue promoting technologies such as artificial intelligence, big data, the internet of things, self-driving cars, virtual and augmented reality or smart cities¹⁰ in the European region.

5G technology will enable content for connected TVs to become an exciting business opportunity soon. This device's

spending on digital content is expected to skyrocket to 175% by 2026, the most significant increase compared to all other devices.

These technological developments are quickly being felt in the digital content market, especially in the gaming and video industry. Thus, the value of immersive content driven by 5G (AR, VR and cloud gaming) will be \$18 B in 4 years (spectacular growth of 687%¹¹).

At the same time, technological developments are paving the way for the progressive expansion of digital commerce offer (MaaS, HaaS, purchase of physical goods, ticketing, gambling, and donations), with mobile phones setting the pace for transactions.

In addition, both large content platforms and companies from a wide range of product and service sectors are beginning to be aware of the inconvenience that more conventional payment techs, especially bank cards, can mean for their businesses. This feeling is the breeding ground for the organic and universal growth of DCB in the coming years.

Although it was already a clear trend in recent years, the development of new payment technologies was significantly accelerated in 2020 with the pandemic, to the detriment of the use of cash. Likely, users who started to become familiar with DCB will continue to use it, and it will be extended to other types of purchases of goods and services.

¹⁰Report SDI Telefónica 2020-2021

¹¹Telecoming

DCB makes progress in purchasing physical goods, ticketing and gambling.

Among other options, three segments of digital commerce are already pointing the way for DCB: physical goods, ticketing and online gambling. By 2022, total spending attributed to DCB in these categories will account for \$5.5B globally. This figure now represents 9.2% of the global DCB market, and it will reach a 21% share with almost \$74.5B in turnover by 2026.

Carrier Billing for physical goods will grow by over 30% globally. It is estimated to be \$3.6B in 2022 and \$13.5B in 2026, accounting for more than 14% of the DCB market by 2022. This global turnover does not include regions such as Europe, where payments for physical goods cannot be processed through DCB due to regulatory constraints.

DCB ticketing will also grow significantly, from almost \$1.8B in 2022 to close to \$6B in turnover in 2026 globally.

The deployment of DCB in ticketing and physical goods commerce will vary in different world regions. For example, physical goods DCB payment progresses more in Japan and Korea, where regulations favour this payment tech.

The present PSD2 regulation is a barrier to DCB in the European zone, as it only allows the payment of digital products and services, as well as donations, in the range of €50 to €300, for transactions per user per month.





In emerging markets, Carrier Billing for physical goods is likely to be adopted faster than in Europe. It is a perfect tech for mobile users with available income that want to make purchases easily.

Similarly, DCB for digital goods and services other than content will expand at different rates in less banked regions and among the younger population that does not own a debit or credit card.

G11.- SHARE OF NEW CATEGORIES IN DCB TOTAL TURNOVER (GLOBAL)

	2022	2023	2024	2025	2026
Physical assets	6.1%	7.5%	9.2%	11.6%	14.3%
Ticketing	2.9%	3.8%	4.6%	5.3%	6.1%
Gambling	0.2%	0.2%	0.3%	0.5%	0.7%

Ticketing will also grow slower in Europe than in other regions. DCB ticketing turnover in Europe will grow from \$153M in 2022 to \$566M in 2026, almost 10% of worldwide turnover.

IoT, strategic partnerships and Subscronomics will boost DCB

Given recent technological developments, we can expect continued growth in 5G subscriptions and, consequently, an accelerated emergence of new connected devices. They will bring new business models that will enable greater development of next-generation networks' capabilities.

Mobile data traffic will increase more than fourfold to 288 EB per month, by 2027. 5G networks will carry 62% of global smartphone traffic by that date. Additionally, subscriptions are expected to reach 4.4B, accounting for 51% of global IoT mobile connections and 49% of all mobile subscriptions¹² under the next-generation networks.

¹²*Ericsson Mobility Report (Nov. 2021)*



IoT (Internet of Things)

IoT development is excellent news for the mobile payment industry. The more connected objects to the network, the more business for DCB.

The high use of connected devices references society's progress in terms of digitisation. In 2020, almost 67% of Spaniards already used a connected TV, and 30.2% used a connected video game console. Smartwatches or virtual assistants (such as smart speakers or mobile apps) have also gained protagonism in European households and have significant potential. The popularity of voice assistants is due to the fact that they facilitate interactions between humans and technology, making them something natural, similar to human conversations. For the user, voice assistants are handy since they serve as intermediaries between connected devices. Users can purchase a subscription through voice, consume a service or buy a digital good.

Home automation systems are also gaining ground. 29% of Spanish citizens use internet-connected systems to manage energy consumption, apps and home security systems.

Strategic partnerships

Categories such as games, videos or music will benefit from new ways of consuming and paying for digital content, among which subscription-based models stand out. Time is crucial for the success of the online purchasing process and, above all, for the user to simplify their recurring payments.

DCB means significant business opportunities from the suppliers' standpoint. Last year it gained visibility and relevance in the market. In order to find the right balance and develop new strategies for further growth of DCB, it is now necessary for merchants and carriers to walk hand in hand to bring this innovative mobile payment option to different sales channels and new users.

Subsconomics

Subsconomics, the subscription economy, jumps from content consumption to goods and services in response to new models. The user has replaced a sense of ownership with products or services enjoyment throughout every moment and need. Success in the subsconomics momentum depends on the ongoing experiences brands can offer their customers and communities.

Due to the agility, convenience and security it provides, mobile payment in general, and DCB in particular, are ideal for recurrent purchases of products and services of small amounts. This valuable improvement in user experience rationally stimulates digitisation.

In short, the scenario is perfect for Direct Carrier Billing to be the ideal partner for a hyper-connected user who wants no friction whatsoever in his digital consumption.

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