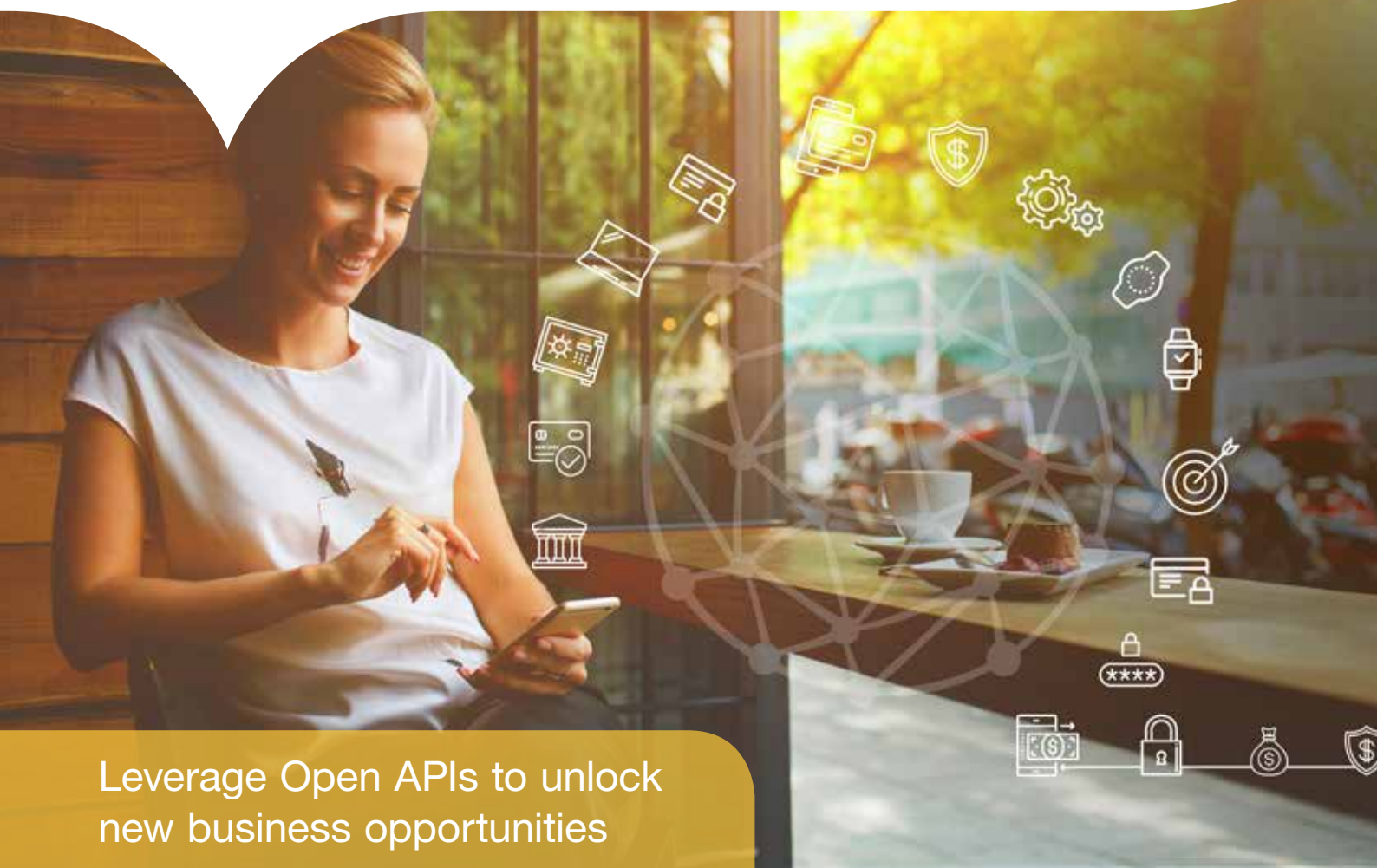


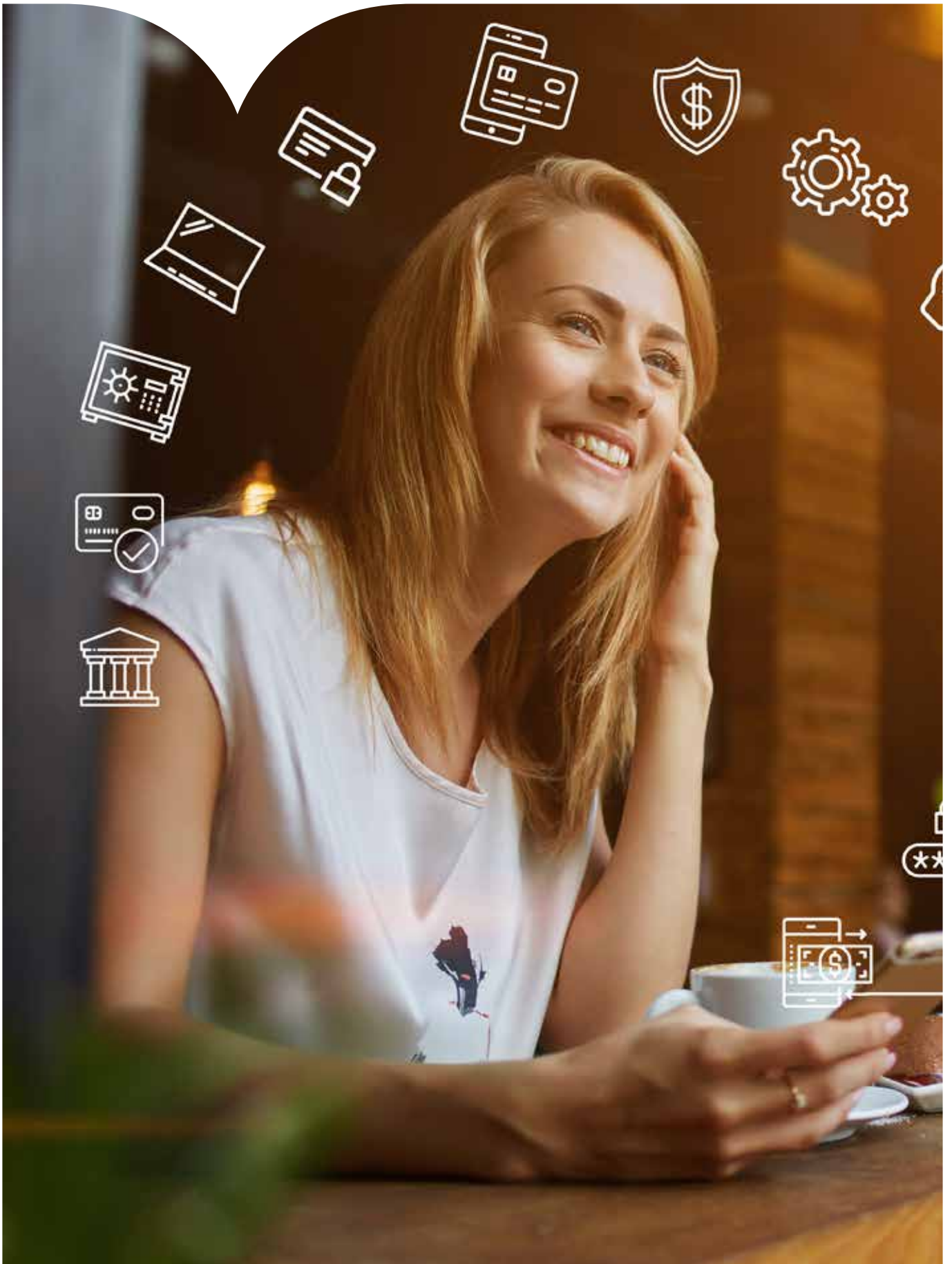
PSD2: An Open Banking Catalyst



Leverage Open APIs to unlock new business opportunities

It is short-sighted to treat the European Union's second Payment Services Directive (PSD2) and other European regulations simply as compliance exercise. Instead, future-focused banks must recognize these changes as catalysts for business growth. A major policy, PSD2 seeks to further standardize and make card, Internet and mobile payments interoperable. And for card and Internet payments, particularly, it reduces barriers to entry.

By January 2018, banks must comply with PSD2. Building on the foundation laid in PSD1, the new rules are intended to better protect consumers when they make payments, and to promote the development and use of innovative online and mobile payment capabilities. Nimble adaption, development of technical solutions, and creation of APIs are critical.



PSD2 is likely to have broad impact on the banking ecosystem, driven largely by third-party provider (TPP) access to payment accounts, which will mandate strong authentication and secure communication regulation. These changes accelerate the threat of disintermediation (removing funds from savings banks and placing them into high-yield, short-term investments) and may also affect the current banking channel mix. Some existing business models, such as card acquisition schemes, are likely to come under pressure as the FinTech sector expands, building on top of new access and opportunities for third-party providers.

To remain competitive, banks should view PSD2 as a value creation opportunity rather than a compliance obligation. As they consider strategic options, collaboration and APIs are essential pieces.

We are a transformation partner, helping banks with initial PSD2 strategy definition, compliance readiness assessment and the implementation of required changes.

A resilient and scalable API solution from Capgemini

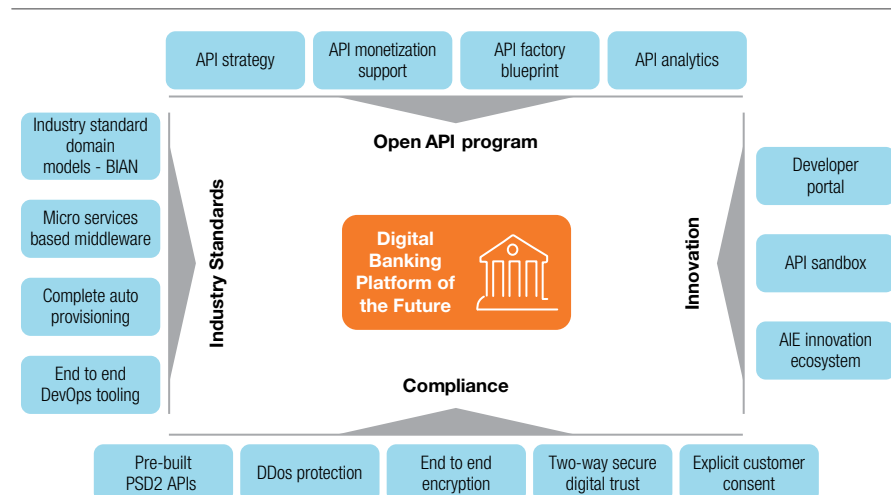
Capgemini's market-ready solution enables banks and payment service providers (PSPs) to achieve PSD2 compliance in a structured, controlled, and accelerated manner while turning the regulation into a digital opportunity to unlock new business models.

From a strategy perspective, banks must adapt their offerings to the new payments' landscape as accrued competition will primarily impact client-facing segments of the value chain. Capgemini can advise banks on which value added services they can offer (e.g. virtual accounts, virtual wallets, etc.) to maintain competitive advantage over Third Party-Payment Service Providers and to help banks assess their strategic positioning in the market.

From a compliance assessment perspective, Capgemini can help banks analyze PSD2 compliance requirements and link these to the appropriate Member State adoption rules. Not only can we help complete all of the traditional activities required for effective compliance, we also can help implement additional changes required by the new regulations and re-assess current obligations.

Capgemini offers a fully integrated platform to jump start your compliance program implementation, to reduce risk, and to diminish cost of compliance by up to 50 percent¹. Our well-tested platform consists of components across four dimensions (Exhibit 1).

Exhibit 1: Our solution brings together all elements needed for banks to thrive in a post PSD2 era



FOUR DRIVING PRINCIPLES FOR BANKS

- **Leverage open APIs:** Incorporate this fundamental capability for the creation of "business mash-ups" and new business model implementation.
- **Enable agility:** Release the drag from legacy technology platforms that makes it exceptionally difficult to create the requisite pace of change.
- **Promote open Innovation:** Build a solution that enables the bank to engage with a diverse ecosystem of partners, developers and TPP's to rapidly innovate around products and services.
- **Ensure security:** Keeping customer data secure is fundamental to instilling confidence in users and also protecting the banks from legal and liability issues.



¹ In comparison with a Greenfield solution if bank decides to custom build all the APIs

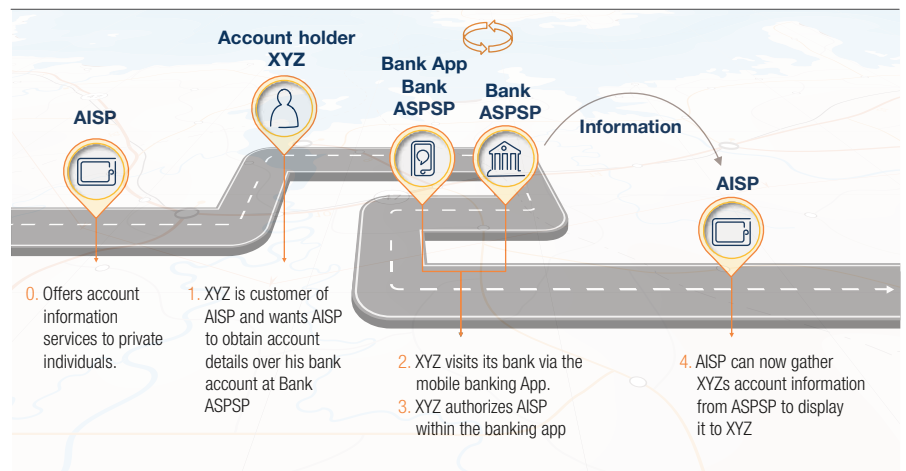
Open API Program: Our Open API program encompasses API strategy, monetization support, API factory blueprint, and API analytics. Our solution is resilient and scalable to enable rapid release of APIs, which lowers out-of-pocket costs for the API build.

Industry Standards: Our highly resilient, ready solution meets industry standards, including Banking Industry Architecture Network's (BIAN) domain models, ISO 20022 message standards, features a micro services based architecture, complete auto provisioning and access to end to end DevOps tooling.

Compliance and Security: Our out-of-the-box compliant solution for PSD2 provides a proven approach for account information service provider (AISP) and PSP access to account capabilities with pre-defined APIs. Pre-built PSD2 APIs are ready to use, ensuring fast, future-proof compliance.

Refer to exhibit 2 for Use case - AISP access to account.

Exhibit 2: Sample use case - AISP access to account



The Capgemini solution supports multiple security implementation options, and it incorporates Distributed Denial of Service (DDoS) protection, end-to-end encryption, two-way secure digital trust, and explicit customer consent. We designed our security solution based on guidelines from the European Banking Authority's Regulatory Technical Standards for strong customer authentication and secure communication. And as these guidelines evolve, our solution will align to support the key objective of PSD2, which is to enhance consumer protection.

Innovation: Our innovative solution helps banks leap frog to the Open API economy and manage an open innovation ecosystem. It provides an integrated developer portal and API sandbox to enable third-party providers and developers to build innovative Open APIs. Additionally, banks can access Capgemini's innovation ecosystem—a broad range of collaborative partners and FinTechs—through our Applied Innovation Exchange platform.



CAPGEMINI PARTNER ECOSYSTEM:

Amazon Web Services (AWS) –

Capgemini's API platform is hosted on the AWS cloud and thus providing a highly secure, reliable and scalable cloud environment. The result: a dramatic increase in agility for the organization, since the cost and time it takes to experiment and develop is significantly lower. The AWS cloud incorporates strong safeguards to help protect customer privacy.

Mulesoft – Mulesoft's anypoint platform provides the full suite of API Management & integration capabilities. Anypoint Platform® delivers a complete integration experience built on proven open source technology, eliminating the pain and cost of point-to-point integration. It helps clients build new APIs rapidly, design new interfaces for existing APIs and more efficiently manage all the APIs using a single platform to rapidly expose enterprise data to external channels.

Token – Capgemini leverages Token platform for exposing Payment Initiation Service provider functions. 'Smart tokens' uniquely combines tokenisation and public-key cryptography to give banks

and PSPs control of the entire transaction chain by issuing and redeeming payment authorisations. It eliminates the need to expose sensitive information like card numbers, usernames, or passwords while harnessing the vast potential of programmable money.

AppDynamics – Capgemini's PSD2 solution is a complex system with several components & business functions implemented as microservices. Our solution leverages AppDynamics for real time monitoring of all platform components. It gives us the ability to identify customer impacting issues quickly and precisely with a single pane of glass view, in real time and minimal overhead.

Ping Identity – API security is enhanced through Ping Identity's state-of-the-art identity standards and authorization protocols allowing enhanced user experience & efficient audit for fraud and compliance.

Capgemini's PSD2 Open Banking solution offers three different deployment models to give clients both flexibility and a range of pricing:

1. A model that is accessed as a fully-managed service on a dedicated virtual private cloud (with pricing based on API usage).
2. A Capgemini built and deployed model on a dedicated virtual private cloud and then transfer of the operations to the bank.
3. A model installed on-premise in a private cloud within the bank's data center.

Capgemini incorporates best-of-breed, fit-for-purpose technologies such as Amazon Web Services, Mulesoft, Token, Splunk, Ping Identity and AppDynamics. Partner technologies have been chosen based on company vision, product features, alignment with technology and architecture best practices, high resilience and fault tolerance, and precedence of usage within the financial services industry. Although our pre-built solution leverages the above mentioned technologies, we also have the flexibility to reuse clients' existing technologies. Our flexible internal platform architecture accommodates the "swap out" of any specific product if needed.

Creating opportunity from PSD2

As a financial services digital transformation leader, Capgemini has deep domain knowledge in both payments and cards. We leverage our more than 1,500 subject matter experts and 30 years of payments experience to offer clients a broad range of knowledge. Capgemini has vast experience in PSD-related implementations, having delivered more than 10 compliance engagements throughout Europe for PSD1. Moreover, we are one of a handful of providers with experience managing large-scale API programs. For one client, we managed the delivery of 86 API endpoints supporting 20-million unique consumers and £1.5 billion GBP (British pound sterling) in revenue. For another banking client, we helped to define an API monetization roadmap that included a phased built-out of 1,000 APIs.

Now is the time for banks to turn their PSD2 regulatory compliance investment into a competitive business differentiation. Capgemini's comprehensive, integrated solution for PSD2 maximizes control, reduces risk and provides a kick-start solution for capturing that opportunity.





Contact Us

Get first-hand experience with Capgemini's API platform / PSD2 APIs by requesting a product tour.

[Register here](#) or email us at payments@capgemini.com

For more information, visit us at www.capgemini.com/psd2



About Capgemini

With more than 190,000 people, Capgemini is present in over 40 countries and celebrates its 50th Anniversary year in 2017. A global leader in consulting, technology and outsourcing services, the Group reported 2016 global revenues of EUR 12.5 billion.

Together with its clients, Capgemini creates and delivers business, technology and digital solutions that fit their needs, enabling them to achieve innovation and competitiveness.

A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at

www.capgemini.com

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