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WHITEPAPER

Redefining Fintech

MARCH 2020

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Overview

A generation ago, the term "fintech" sounded like futuristic shorthand. Today the word carries risks of over-hype and oversimplification. While, at its most basic, fintech describes the intersection of financial services and technology, it is far more than paying for something by smartphone. Fintech is the force that led to this and so many other technology-enabled innovations in financial services and beyond.

This primer is an introduction to fintech and a broad view of the investment opportunities presented by its continued evolution. The mobile banking revolution is part of the story but, as the sector diversifies, there is enormous potential for an even more significant transformation across the sector. Fintech's impact is now being felt in adjacent industries, with businesses using technology to enable consumers and enterprises alike to more effectively harness information, and to act on it.

As much as an introduction, this primer is a call to action. While revealing new applications for technology and even new media of exchange, the market is also uncovering vital needs to be addressed — and proving the immense value in thinking differently about issues of access, risk and income, to name a few. This dynamic ecosystem cannot succeed without a variety of perspectives — particularly those traditionally considered to be "outside" the financial services industry.

What is Fintech?

The definition of fintech can vary greatly in its scope, representing a hot trend in product design or a range of disruptive companies. Today the word often represents a sector of technology-first companies addressing the existing financial services market, in competition or collaboration with incumbents.

The Anthemis view is the broad view — that fintech transforms how both people and organizations think about the movement and management of money in the digital economy. This encompasses innovation in financial services, including the consumerization of banking, insurance and wealth management, as well as new applications for agriculture, media, real estate and countless other industries.

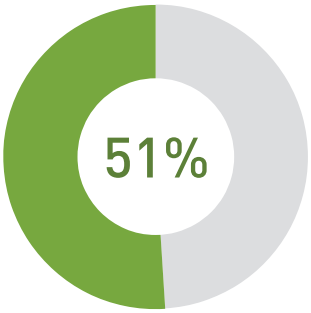
Anthemis also takes the long view, considering the way that financial technology has changed the world in its transition from the Industrial Age to the Information Age. The financial services sector now represents a significantly larger percentage of the economies of North America and Great Britain than it did 60 years ago.[1] Still, many of the ideas that inform today's financial services products were established to meet the needs of the industrial economy back in the 1950s, during a time of relative information scarcity.

It is only now, almost 25 years after Netscape's initial public offering ushered in the first tech boom, that fintech is reaching a crucial inflection point. Or, In the words of Anthemis academic-in-residence Carlota Perez, author of *Technological Revolutions and Financial Capital*, it has shifted from the "installation" phase to the "deployment" phase — the moment when the power of networks can really be unleashed.

1 in 3

Digitally active consumers who have used two or more fintech services in the past six months. In 2015, the ratio was one in six

Source: EY Fintech Adoption Index 2017



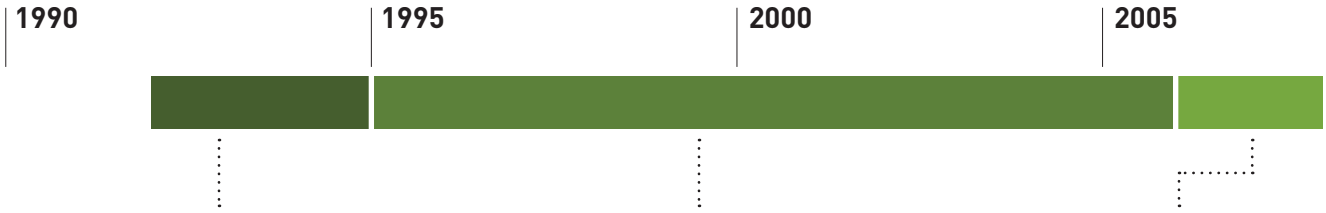
Growth of the peer-to-peer lending platform industry in the US since 2014

Source: IBISWorld[2]

The History of Fintech

Technologists have long cited an adage known as Amara's Law, which holds that people overestimate the impact of technology in the short run and underestimate it in the long run. The product launches, investments and acquisitions that dominate the news cycle in a single year can overshadow the fact that financial services today does not just look different, it *is* different — operating with once-unimagined speed and agility, and widely distributed across a network instead of stacked inside a hierarchy that reports to the top. The reason for that is fintech, and Anthemis has played an essential role in its evolution from the start.

The Evolution of Fintech



1992-1995: For Finance, Tech is "Necessary Evil"

Digital technology first figures in financial services as an investment banking area of expertise. A few early leaders — brokerage companies and market data analysts such as Bloomberg, Thompson and Dow Jones — recognize the importance of technology to their core financial business. For most big banks, insurance companies and asset managers, tech is a "back office" consideration.

1993: Citicorp initiates Fintech, a banking research project later known as the Financial Services Technology Consortium

CITICORP

1995: Netscape goes public

NETSCAPE

1995 to 2006: Finance Guides Tech

Electronic trading explodes, evolving into high-frequency trading, and online banking platforms proliferate: while only nine percent of American bill-payers said they banked online in 1995, by the end of 2005, 43 percent of American internet users say they do.[3] Still, the most high-profile connections between financial services and the tech boom are the investment bankers advising technologists and tech companies on the future of their businesses.

1998: Confinity (later PayPal) launches first digital wallet

CONFINITY

2004: Google hires Morgan Stanley and Goldman Sachs to lead initial public offering

Google

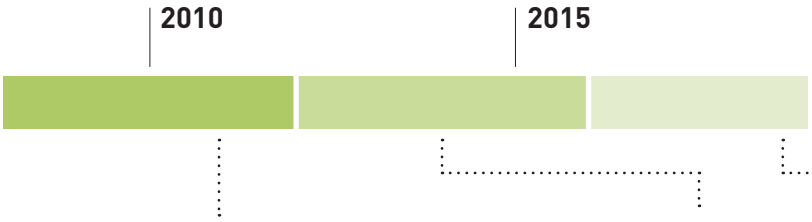
2006-2008: Tech Comes of Age

The debut of the iPhone ushers in the era of mobile. Changes in firewall technology also shift the ways in which entrepreneurs can work alongside big businesses. Peer-to-peer lending pioneers Prosper and Lending Club launch, as does Kenyan mobile payments giant M-Pesa. Amy Nauiokas, CEO of Barclays Stockbrokers, meets Sean Park, who runs Dresdner Kleinwort's digital markets initiative. Together, they make their first seed investments in financial services startups.

2007: Apple introduces the iPhone

2008: Lending Club registers with the US Securities and Exchange Commission

LendingClub



2008-2012: Financial Collapse, Fintech Opportunity

The global financial crisis is a major inflection point for fintech. A lack of trust in the system illuminates new consumer and enterprise needs for transparency, giving rise to a new subsector, regtech, focused on navigating new compliance requirements. Job losses create a new wave of entrepreneurs empowered by mobile technologies. Nauiokas and Park establish Anthemis as demand for new ideas at scale — and at a cost saving — creates wide opportunities for venture investing.

2008: "Bitcoin: A Peer-to-Peer Electronic Cash System" published, ushering in era of cryptocurrency

2009: Square introduces plug-in card reader

Square

2010: Anthemis invests in online financial advisor Betterment

Betterment

2012-2016: Fintech Boom

Fintech grows into one of the hottest sectors for venture capital, with investments increasing fivefold to $14.6 billion in 2015, with particularly explosive growth in Europe and Asia.[4] Tech giants such as Apple, Samsung and Google each announce their own digital payments services. The "new way" is more widely adopted by consumers, who bank online and, increasingly, by phone.

2013: Monsanto acquires Anthemis investment The Climate Corporation for $930 million

THE CLIMATE CORPORATION

2014: BBVA acquires Anthemis investment Simple for $117 million

SIMPLE

2015: Revolut launches as a "digital banking alternative"

Revolut

2016-Present: Only the Strong Shall Survive

A crowded and cash-flush market enables innovation that evolves at the speed of technology, giving way to the algorithmic systems and artificial intelligence (AI) of today. Seeing the potential, consumers opt for personalized financial products that are convenient and responsive. Large financial institutions recognize the value in collaboration and include new business models, investment approaches and partnerships in their strategies.

2016: Fidelity leads $400 million investment in insurtech startup Oscar

oscar

2017: Facebook Messenger offers peer-to-peer payments through PayPal

2018: PSD2 requires EU banks to open access to consumer account information

The Case for Investing in Fintech Today

As fintech has evolved, it has gained traction. Some companies, particularly in payments and retail banking, have achieved meaningful acceleration levels, empowering consumers, entrepreneurs and investors alike. Cultural shifts have made financial services customers — consumers and businesses — receptive to the idea that there is a better way.

With the headline that 2019 would be "another lights-out year for fintech startups", a recent report showed that the market cap of the Matrix FinTech Index — measuring the top 10 publicly traded US fintechs — grew 50 percentage points in 2018, outpacing both incumbent financial services companies and the S&P 500.[5] Still, it is important to note that many of the most impactful companies in the sector, including some mentioned in this report, are still relatively small, with great potential.

A decade after Anthemis began laying the groundwork for financial services' reinvention, the ideas are no longer speculative, and their thesis can be applied to a wider spectrum of initiatives. For example, one early investment, The Climate Corporation (sold to Monsanto for $930 million in 2013), is a digital agricultural company that enables farmers to use weather, soil and field data to determine potential yield-limiting factors. Broadening the definition of fintech improves the potential of existing markets and targets inefficiencies in a more diverse range of sectors.

"While the fundamental drivers of technology will continue to strongly impact innovation across most sectors, an economic downturn will show us which companies, young or not so young, are truly able to withstand the slings and arrows of real-world economic cycles."

– ANTHEMIS PARTNER YANN RANCHERE, IN FORTUNE[6]

7 million

Number of Square's active users

Square

20,000

Number of new Monzo registrations per week

monzo

$14 billion

Estimated assets under management for Betterment, the world's largest independent robo-advisor

Betterment

The Role of Venture Capital in Fintech

Key to moving large-scale, future-focused ideas into reality, venture capital (VC) is the primary source of funding for fintech startups. Trends in VC activity for fintech differ from the VC landscape as a whole. Early stage financing activity has trended up, unlike in other parts of the industry, according to KPMG. The firm's recent *Pulse of Fintech Report* says: "Fintech's popularity among VCs at all stages speaks to its core attributes: well-defined market opportunities in its major segments, long-developing innovation cycles and significant growth opportunities amid the best-developed segments."[7]

The relatively slow evolution of fintech, when compared to the technological transformation of other industries, is actually a strength: the complex nature of financial services creates unique opportunities for investors to observe innovation and user behaviors in other parts of the economy. That leads to better-informed decisions about how technology can most effectively shift cash flows, enable transactions and mitigate risk.

The earliest fintech startups were focused on applying the logic of Web 2.0, or mobile technology, to existing financial services models. Anthemis sees even bigger potential in new businesses that take a fundamentally different approach to financial services from first principles.

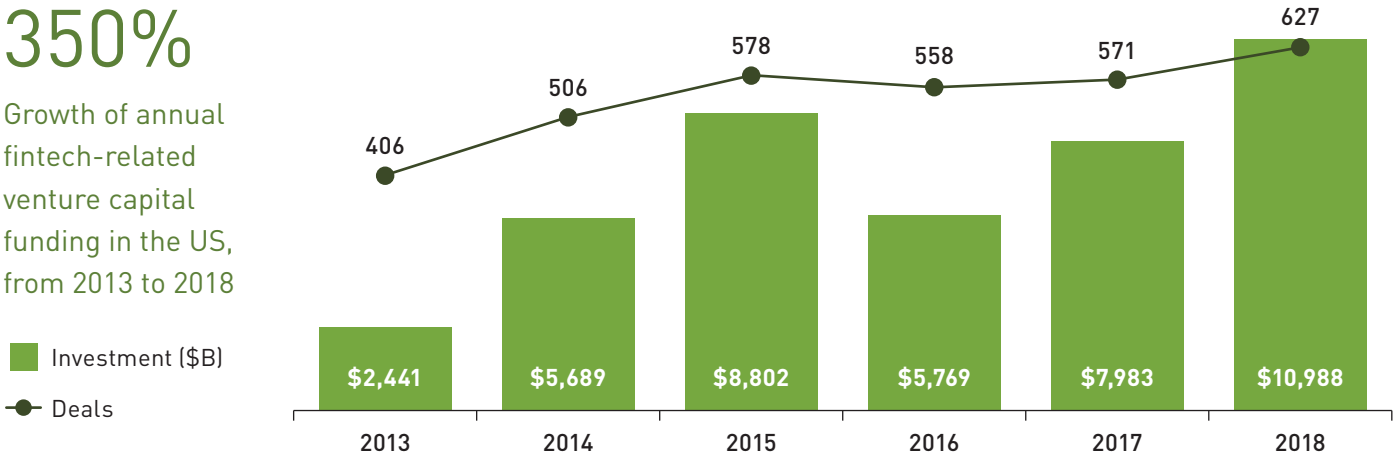
$36.6 billion

Global venture capital investment in fintech in 2018, across 2,304 deals. This is a 148 percent increase from 2017 and a 329 percent increase over five years

Source: Innovate Finance[9]

350%

Growth of annual fintech-related venture capital funding in the US, from 2013 to 2018



Source: PwC / CB Insights Q4 2018 MoneyTree Report[8]

Fintech's Essential Subsectors

Much of what has been discussed so far — payments, retail banking, asset management and lending — represents fintech's most visible categories. But there are other crucial subsectors, such as risk management and insurance, that are evolving at an even greater rate. Challengers often lead the way, but organizations of all sizes are investing in new relationships and harnessing new technology in order to improve speed, accuracy and efficiency.

Retail Banking and Consumer Finance

While very real challenges exist, and vary greatly by region, the global banking system is bigger and more profitable than ever. Technology has lowered barriers to entry and put more power in the hands of the consumer — and more money, as some new products are waiving fees and offering low or no minimum balance requirements. Neobanks, sometimes referred to as "challenger banks," are on a meaningful rise, receiving a reported four times the funding they did last year and 10 times the funding they did in 2015.[10]

Now two major UK startups, Revolut and Monzo, are planning a move into the US market. Others are expanding their offerings to include small business banking. New initiatives from incumbents such as Goldman Sachs are taking the opposite course: its Marcus, which began with online lending products, has now expanded into savings accounts.

Business and Corporate Banking

The corporate banking sector has embraced innovation more slowly than consumer-oriented banking businesses. A recent survey of corporate banking executives, conducted by Boston Consulting Group, found that less than half (43 percent) indicated that their organization has a clear digital strategy and vision for the corporate bank as well as a well-defined roadmap for digitization. Only 19 percent believe their organization has market-leading digital capabilities.[11]

"Over the next five years, we estimate that, in some segments, digital providers and channels (including banks' own digital channels) will capture at least 30 percent of corporate banking revenues."

– BOSTON CONSULTING GROUP

But there is evidence that challengers are rising to the occasion. At the end of 2018, two-year-old business banking startup Tide reported that it had secured 1 percent of the UK's small and medium size banking industry. Other digital-only challenger banks, like Atom Bank,

are beginning to offer business banking loans. Meanwhile, a new wave of startups, including Anthemis investment Bento, are providing small businesses with smarter spending management platforms and more transparency on employee expenditures from point of sale.

Payments

With headline-grabbing global leaders like PayPal and Tencent, payments is one of fintech's well-established categories. Today's changes represent a second or even third wave of development, addressing new security concerns that come with increased access and speed. For example, account takeover fraud, common with digital payments, is now more common than in-person credit card fraud, according to the US Federal Reserve Bank.[12]

Now, companies such as digital receipts platform Flux create more transparency for consumers and more robust connections between retailers and banks. Some of the most exciting thinking in the category looks outside the existing market to enable broader access to finance and investment. The opportunities ahead are in focusing on customer solutions and in looking beyond the consumers in the US or UK who are making choices between, say, PayPal or ApplePay, to the estimated 31 percent of the world's adult population without access to a bank account.[13]

$2 trillion

Amount contactless in-store payments are expected to total, globally, by 2020

Source: Juniper Research[14]

Wealth and Asset Management

The recent successful launches of new low and even no-fee exchange-traded funds (ETFs) prove how technology has transformed consumers' relationship with investing. While the idea of the roboadvisor once seemed futuristic, companies such as Betterment are moving examples of the ways that AI is already a reality, making services smarter and more effective. Deloitte estimates that by 2020 up to $3.7 trillion in assets will be managed with the support of roboadvisory services; by 2025, the number could rise to more than $16 trillion assets under management (AUM).[15]

Meanwhile, as the population ages, there is a growing need for help navigating what Anthemis partner David Galbraith calls the "decumulation" phase.[16] Sometimes seen as the far side of the fintech spectrum, new platforms such as Anthemis portfolio company Kindur

focus on the massive opportunity in helping people through retirement and end-of-life planning.

Capital Markets and Trading

Ten years after the global financial crisis, the regulatory environment is complex, and some major players in capital markets are particularly risk-averse. Still, investment banks must evolve, incorporating regulatory technology solutions and advanced analytics into their strategies — and making room for opportunities that AI and blockchain represent. A recent McKinsey & Company report on the subsector said that "the growth trajectory of [Capital Markets Infrastructure] fintech has remained steep and likely has yet to reach a peak."[17]

Disruption has been a winning strategy in some subsectors but, here, diverse expertise is essential. Forty percent of World Federation of Exchanges members surveyed by McKinsey in 2017 said that collaboration agreements are the most efficient model for fintech relationships.

3 out of 4

Financial services firms have a favorable opinion of regtech innovation and digital disruption. In 2015, only 40 percent of firms had a positive view

Source: Thomson Reuters[18]

Insurance and Risk Management

Technology enables the monitoring of risk in real-time, creating more accurate balance sheets and more targeted ways of navigating uncertainty. The relatively new subsector of insurtech is evolving significantly, with opportunities that extend across the entire value chain of insurance, from distribution marketing to underwriting to reinsurance. And capital is being deployed across this spectrum: according to a recent Deloitte report, insurtech investment last year was closing in on the $2 billion mark — representing the industry's second-highest level of financing.[19]

This past summer saw the emergence of the first insurtech unicorn, a privately valued startup with a $1 billion-plus valuation. The Ohio-based Root Insurance's "insurance on demand" model is based on usage rather than more traditional factors such as age, location and marital status. Anthemis portfolio company Trōv extends this idea to a wide range of products with the first on-demand platform for single items, enabling the consumer to define what is valuable and when risk is greatest.

Data, Technology and Infrastructure

There are many cases to be made for embracing technological revolution. Among the most compelling is that doing so can significantly lower the cost of doing business: helping people see and understand information, so that they can agree on the truth. There is great and growing demand, in all industries, for infrastructure that can support secure, real-time transactions and enable better access to more comprehensive data. And there is immense value in identifying and supporting the foundation upon which a generation of great ideas will be built.

For example, the reality of cryptocurrency extends far beyond Bitcoin hype. Today the majority of banks — including the World Bank — are experimenting with blockchain technology. Companies such as Berlin-based BigchainDB provide customers with database software that is enhanced by blockchain characteristics that can provide more powerful functionality and transparency.

"The term "artificial intelligence" is overused. We tend to get very excited about enabling technology rather than its applications. Artificial intelligence enables new applications in everything from fraud detection to intelligent cash flow management to automation in insurance claims handling. It's the applications that are worthy of the hype."

– ANTHEMIS MANAGING DIRECTOR RUTH FOXE BLADER, FOR FLEISHMANHILLARD [20]

The Future of Fintech

Fintech reduces friction in financial services, lowering cost, improving customer service and democratizing access. As Anthemis continues to increase its footprint in fintech, it is identifying emergent leaders in the venture capital space that are uniquely qualified to usher in the next phase of growth. Looking ahead to opportunities at the baseline of a growing number of industries, several ideas will influence the sector.

Embedded Finance

Technology has enabled banking services to evolve from branch-driven to on-demand to practically invisible. The extension of this logic has fintech embedded in services to the point of ubiquity. The difference, to use one contemporary retail example, is picking up a product and walking out of one of the AmazonGo concept stores, rather than waiting in line at a cash register. The financial transaction is so enmeshed with the experience that it is invisible.

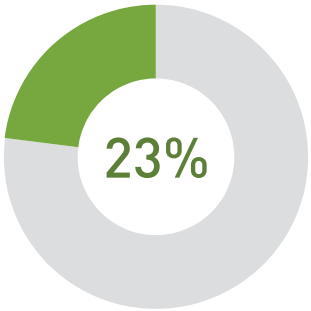
This idea is already playing out in the insurance industry as artificial intelligence, telemetrics and other technology help providers more accurately identify risks in real-time and provide targeted, on-demand

coverage. The rise of insurtech shows that the demand for the innovations coming out of fintech are just as great in sectors that are not expressly about moving money from one point to another, but that rely just as heavily on access, efficiency and transparency.

Financial Wellness

As fintech has made financial services more accessible, it has also revealed new possibilities for providing stability and opportunity for people who are not included in the system: the unbanked, a number that the World Bank estimates at 1.7 billion globally, as well as the much larger number of people who are underbanked. Data-driven insight into the fears and motivations underlying financial decisions has also revealed important connections between financial health and physical health. Nearly nine out of 10 large to midsize employers in the US now offer financial incentives as part of their well-being platform (up from 74 percent in 2017), according to a recent survey.[21]

There are significant opportunities within the development of products and services to achieve truly personal engagement: improving education, fostering healthy habits, enabling goal-setting and promoting a higher sense of fulfillment. By defining and nurturing these ideas, venture capital can redefine impact to include both making money and making people whole.



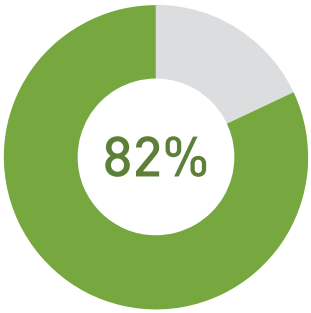
Americans who experience financial stress report debilitating symptoms that are more typically associated with post-traumatic stress disorder

Source: Payoff

Collaboration

It seems ever more apparent that a Silicon Valley and Hollywood-fueled narrative that pits maverick founders against monolithic institutions is, for fintech, quite limiting — and, in fact, was never entirely true. Much like energy and education, financial services is such a highly regulated, highly sensitive and systemic layer of the economy that no truly impactful idea can exist in isolation.

That fact does not eclipse the need for established institutions to undergo what Stephen Bird, CEO for Global Consumer Banking at Citi, recently called a "tense and deep re-engineering of processes to enhance speed, convenience and trust and get at what is most important: the customer."[22] Indeed, there are more and more compelling examples of collaborations in which startups bring speed, agility and new ideas and long-established incumbents bring scale and capital. The major players are also building and sharing



Financial institutions that expect to increase fintech partnerships in the next three to five years

Source: PwC[23]

platforms, as is the case with BlackRock's risk-management platform Aladdin, used by financial services companies around the world, including competitor Vanguard, or the recent partnership announced between ING and AXA.

Regulation

The complex regulatory environment of financial services is a constant, even as the specifics change — and they change quickly, as is evidenced by Europe's Payment Services Directive 2 (PSD2) and General Data Protection Regulation (GDPR), both implemented last year. But while regulation does impose some checks on innovation, it is also an opportunity. KPMG reports that, in the first half of 2018, VC funding to regtech companies had already surpassed the 2017 total.

"Instead of waiting for our institutions to catch up with the new way we run our world, why don't we set up institutions that are purpose-built for this new world?"

– ANTHEMIS CO-FOUNDER SEAN PARK, WIRED UK[24]

Even moments of great political unrest can reveal important paths and priorities, inside financial services and beyond. With deep experience in financial services, the Anthemis team is uniquely aware of the risks and requirements of starting up and operating in a highly regulated environment. This understanding informs investment strategy and helps shape an ecosystem-wide conversation about how the financial system can contribute to the long-term health of society.

Private Equity's Transformation

Technology has not impacted the world of private equity and venture capital as profoundly as it has many consumer finance products. But as the world shifts, so too will the business models of Anthemis, its partners and competitors. While big data and machine-learning pose significant opportunities in this subsector, many possibilities are as yet untested, even unknown. Anthemis has begun to question the way that innovation will fundamentally improve understanding, increase agility and foster connections within private equity and will, in the years ahead, dedicate resources to pursuing this line of inquiry.

Conclusion

Fintech arose as technology created new ways to answer age-old questions about transactions and trust. While the stage for the transformation was set, 25 years ago, inside the big banks and insurance companies, for many years, the most compelling voices have been those of outsiders — emergent business models, startups and disruptive products. The consumerization of financial services such as banking, wealth management and now insurance has changed mindsets, driven further innovation and turned the entire system on its head.

That is the history, and it is also the future. Emergent approaches to risk and planning, and new and more holistic considerations of the links between finance and wellness, require a definition of fintech that is inclusive in all ways. Fintech must constantly seek to span divides, be they geographical or philosophical, such as the line between incumbents and startups.

Not only will the future of fintech challenge current definitions of financial services, it will enable financial services to become ever more embedded in the essential functions of daily life. This next wave of innovation represents, at once, more transactions and more personalization. It will empower a broader cross-section of the financial services industry and impact billions of people worldwide. And as fintech evolves, it will essentially disappear — becoming its own layer, beneath even the most novel products and services of today, working seamlessly and improving constantly.

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Anthemis cultivates change in financial services by investing in, growing and sustaining businesses committed to improving the world.

We were founded on three guiding principles — authentic collaboration, virtuous cycle outcomes, and diversity and inclusivity — and our deep understanding of markets and models, passion for emerging technology and values inspire everything we do. By creating fertile ground for a diverse group of startups, investors, entrepreneurs, institutions, academics and visionaries to converge, we believe we can solve the financial services world's most pressing challenges faster, better and for the benefit of all.

For the latest on the Anthemis ecosystem, visit: anthemis.com/news-and-insights

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