

Rise FinTech Insights

Diversity in FinTech



rise

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#HomeofFinTech



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Diversity and Inclusion are at the **heart** of Barclays

Building and maintaining a diverse and inclusive environment is at the heart of Barclays' values: Respect, Integrity, Service, Excellence and Stewardship. We are a better, stronger and more successful organisation as a result of it.

Barclays is deeply committed to empowering the next generation of leaders, providing access to enterprise, employability and financial skills.

We believe that diversity of thought and experience works best when everyone feels included. Our commitment to creating an inclusive culture where people can feel themselves at work extends to all Diversity and Inclusion groups within Barclays.

We are committed to improving gender diversity. We have set targets for each business area and are focussing on a number of interventions most likely to increase the number of female senior leaders and create a more equal organisation. As a champion of the UN Women's HeForShe campaign, we believe in the importance of engaging men in the advancement of women's rights.

As an early signatory of the UK's Race at Work Charter, Barclays is committed to supporting ethnic minority career progression. Barclays is a long-standing champion of the LGBTQ+ community, is a Stonewall Top 20 Global Employer and has sponsored Pride since 2014. Over 17,000 colleagues are members of our seven colleague diversity networks which provide support and advice to our diverse communities: from making our offices and technology more accessible to colleagues and providing development opportunities for emerging talent, to enabling parents and carers to balance their home and work lives by working dynamically. All of these diversity initiatives are stronger because they are promoted and amplified by allies from outside those groups.



This edition of the Rise FinTech Insights report focuses on diversity within FinTech. People often equate technology with innovation and regard the 'Tech' in FinTech as the main transforming drive in the sector, but equally important is how thinking differently about problems can lead to radically innovative solutions. And the best way of thinking differently is by encouraging diversity – putting different people, ideas and experiences together. This report provides insights and resources on promoting gender, cultural and ethnic diversity across a range of activities, from hiring employees and funding entrepreneurs to boosting financial literacy in communities. It also features the views of a range of founders from our global Rise FinTech ecosystem whose impact is felt across financial services.

Diversity, and its impact at Barclays, addresses not only new and better solutions for our customers and clients, it also extends to our colleagues and how we create a more equitable and inclusive environment for them.

By valuing the true power of diversity and fostering a culture where anyone can feel confident to balance their work and home lives, feel included and have their talents nurtured, we empower Barclays colleagues, as individuals, teams and communities, to contribute fully to our vision and goals.



Jes Staley
Group Chief Executive
Officer, Barclays

bridging

the

gap

Educating tomorrow's tech entrepreneurs

Poor media portrayals, outdated cultural norms and stereotypes, unwelcoming cultures and a lack of proper leadership. These are just a few factors that have led to homogenous finance and technology sectors. So, it's unsurprising that at their intersection – FinTech – we see the same pattern of underrepresentation.

Women make up half the population, are a large proportion of customers of technology, and make the most purchasing decisions. Yet, they are missing from the boardrooms, scrum meetings and code repositories in the multi-billion pound FinTech industry. Working on Stemettes for several years, I've been able to show thousands of young people what could be – what good can be done in these spaces. I've seen what it looks like when girls and young women get creative with technology.

In fact, we've even taken over the Rise building on many occasions to work on the 'Future of FinTech' at hackathons. We've filled it with girls, their siblings and their parents to showcase the opportunities available in joining one of the fastest-growing UK sectors. Spending time at our 'free, fun, food-filled' events has helped hundreds of young people gain confidence in their abilities. After the event in August 2019, 86% of attendees left the hack seeing the technology field in a better light. 83% left feeling more confident in their technical abilities. 76% felt better connected to role models and peers in FinTech. They'd also expanded their knowledge of career options and technology. At Stemettes, hackathons like this run in partnership with Rise, where volunteers from across various FinTech companies have been able to mentor, inspire and connect with future innovators. At the same time they've learnt a thing or two about what inclusive spaces can look like. They've been able to see what happens when you set a diverse set of minds loose on financial problems with technical tools.



There's so much to do to ensure that girls, young women and young non-binary people can take up places in FinTech. There's even more to do to ensure they can remain in the space for fulfilling and impactful careers. FinTech founders need to ensure that they have diverse leadership teams that are inclusive and foster a culture of belonging, then they need to extend this to all staff – from management to entry-level. Founders and teams also need to ensure they embrace this ethos in their recruitment practices, promotion processes and the allocation of positions of responsibility. A homogenous FinTech scene can't thrive properly if it builds products that are missing a perspective as wide as the customers they're supposed to be serving.

They say money makes the world go round, and in FinTech there's plenty of money, and therefore power – the power to change. If this sector can't sort out its diversity problem, then how can it flourish and have the transformational and powerful positive impact we all deserve?



Dr Anne-Marie Imafidon
MBE
Mathematician, Computer Scientist and Co-founder of Stemettes

[stemettes.org](https://www.stemettes.org)

 [stemettes](https://www.linkedin.com/company/stemettes)
 [@stemettes](https://twitter.com/stemettes)

Financial literacy can empower the Latinx community

FinTech for the new majority

One of the lessons from the women's movement is that representation matters. Representation and trust go hand in hand. This is particularly true in underserved communities when it comes to dealing with financial institutions and direct to consumer brands. Trust can't be bought with a marketing campaign – authenticity is the new cultural currency. Founders of colour are the hero image that communities are looking for. They want to see themselves and their realities represented in the companies they engage with, and that loyalty translates into long term value for companies.

This is a call to action, to the FinTech sector as much as any other.

Why the existing product doesn't fit the market

Minority communities have culturally nuanced financial beliefs and behaviours that influence how they bank, how they invest and how they think about retirement and insurance. Trillions of dollars have been invested into FinTech and now we have a plethora of digital, no fee banks, robo advisors and cheap alternatives to payday loans. So the question is why are folks of colour not faring any better? Are these products not reaching them, or are they not designed to solve their unique problems?

Most founders tend to model their teams, companies and solutions around who and what they know, and right now that means there are few companies building a product

with people like me in mind. Closing the racial wealth gap is complex, which is why it will take a diverse pool of founders to come up with innovative solutions.

Niche is the new opportunity

For the first time in history, a majority of working-age Americans (25 to 54 years old) are people of colour, and 2020 is the year when more than half of all Americans under seventeen years old are from a minority background¹. The future is even more diverse with Latinos making up 35% of Gen Z².

Investing in founders of colour who are building financial products for the new majority is not niche, it's smart. The demographic shift and the widening racial wealth gap creates a golden opportunity to do well and do good. Trillions of dollars are being left on the table by financial institutions who are not engaging this market.

"Trust can't be bought with a marketing campaign – authenticity is the new cultural currency."

Ramona Ortega, My Money My Future

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From financial inequality to financial savvy

Economic inequality is driven by many factors. Housing segregation, redlining, disparate wages, and under-employment have created a reality where the median white household has \$111,146 in wealth compared to \$7,113 for the median black household and \$8,348 for the median Latinx household³. Moreover, tech is home to a majority of high paying jobs yet, at Google and Microsoft, the share of US technical employees who are Black or Latinx rose by less than 1% since 2014⁴.

My Money My Future is a mission-driven financial services company empowering a new generation to manage their money with confidence and build wealth. Our platform Money Made Simple uses data and AI to help people save, invest and build wealth with digital financial guidance, product recommendations and content built around their life, not just their bank transactions. Spurred by the financial challenges we are seeing as a result of COVID-19, we're currently working on a proprietary insurance product for gig economy workers.



Ramona Ortega
Founder,
My Money My Future

 ramonaortega
 @dinero_diva

FinTech's call to action

I'm one of few Latinx FinTech founders and I have some suggestions for creating a more diverse FinTech sector:

- **Help more of us get funded**
The strongest signal for a VC is a strong introduction from a founder they've already funded, so get to know FinTech founders of colour and open up your network.
- **Partner with us**
There are now a number of 'mega FinTechs' – companies that could partner, support or even acquire small diverse companies and, as a result, add value by reaching new markets.
- **Invite us to the table not a panel**
Panels are great but a seat at the table is better. If you're launching a diversity campaign or coalition, make sure to have Black and Latinx folks involved.
- **Take it seriously**
If you're a FinTech VC and have not funded a Black or Latinx founder, take the time to research the opportunity and make a pledge.

Baby boomers and the need for age diversity

Millions are at an inflection point, one that has, until recently, been ignored by the (Fin)Tech community.

Baby boomers are the demographic born in the years following the Second World War, and over 10,000 of them are retiring every day. They find themselves both excited about their second (or third) 'act' of their lives, but they're daunted by the complexity of financial decisions that lie ahead.

At Kindur, we find it incredibly frustrating that there are so few simple and straightforward resources to explain how to make the series of health and wealth decisions that so many people will make in their 50s and 60s. Whether it's navigating government benefits like social security and (in the US) Medicare, figuring out when you can afford to retire, understanding the cost of healthcare or finding your forever home, there are a lot of new decisions to be made.

Now is the time to build solutions for baby boomers. After all, they control over \$37 trillion in assets and have the highest consumer spending of any generation. And now is when they need help as they're the first generation to retire without a pension at a time when they're expected to live almost 10 years longer than their parents.

So why have they been ignored? The common belief is that, if you're over 50 years old, you don't know how to use technology and won't become a customer through digital channels. This is simply not true. Jeff Bezos, Tim Cook, Bill Gates and Meg Whitman: these are baby boomers who certainly 'get' technology!

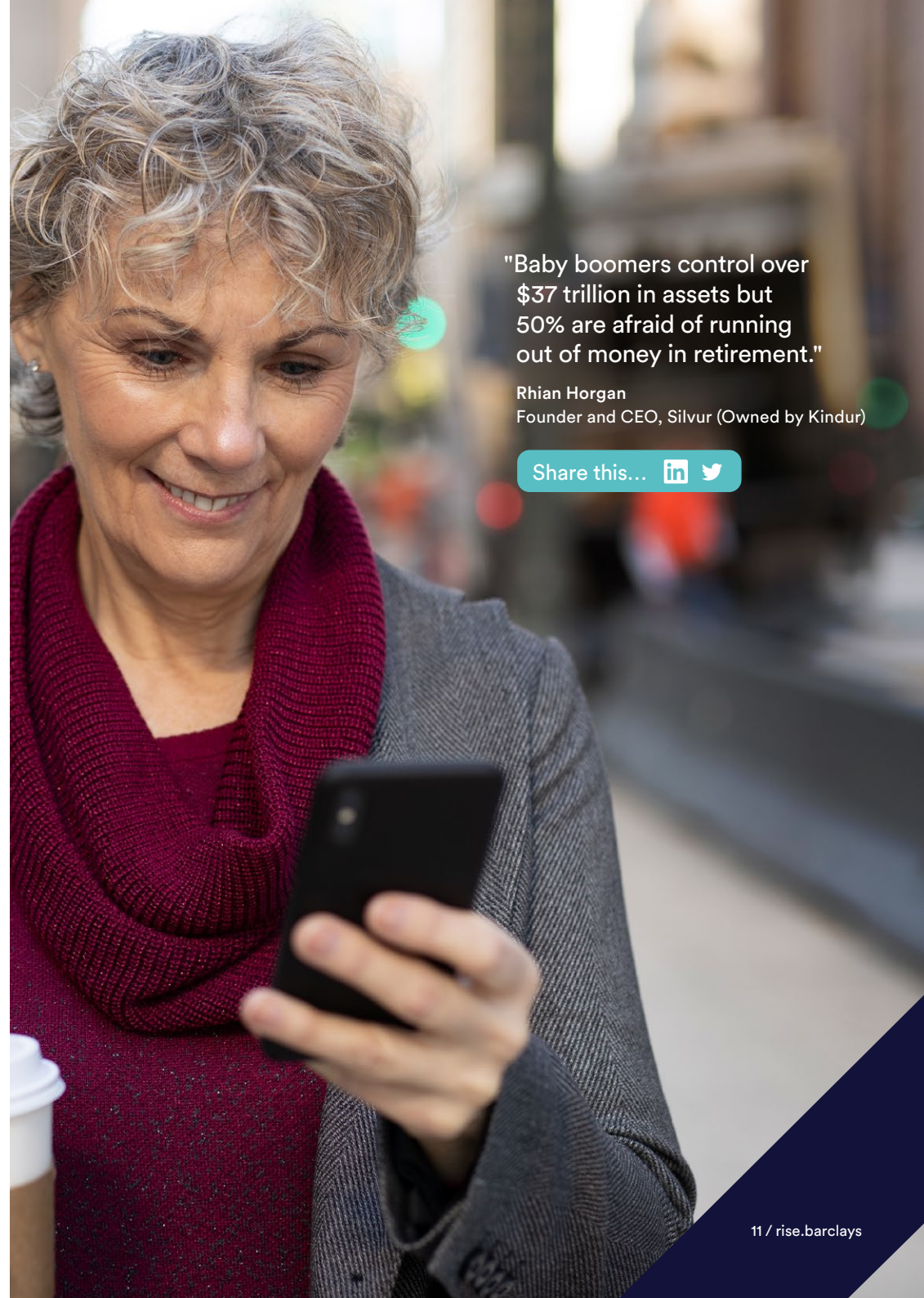
Over the past three years, Kindur has been building consumer technology – web-based and apps - for boomers. We've learned that they are indeed online but that they navigate technology differently to millennials and, while they might not be on TikTok, they are on Facebook. Based on extensive UX research and insights from our customers, we've built the playbook for designing empowering technology for boomers. Our new app Silvr is an example of how to give consumers in their 50s and 60s confidence as they enter their second or third act of life. Silvr's no-fear retirement calculator and Retirement Score can help anyone improve their financial wellness over time. The Retirement Score is powered by patent-pending technology, Smart Draw, and Silvr also includes a Retirement Score that provides access to products and services necessary for navigating life after 50.

It's technology like Silvr that we believe is filling a gap in the growing market for boomers.



Rhian Horgan
Founder and CEO,
Silvr (Owned by Kindur)

[in](#) rhianhorgan
[t](#) @getsilvr



"Baby boomers control over \$37 trillion in assets but 50% are afraid of running out of money in retirement."

Rhian Horgan
Founder and CEO, Silvr (Owned by Kindur)

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seat at the table

Funding a diverse future: Q&A with Hayley Chan

Venture Capital is funding the future. The decisions made by VCs filter through to the whole community. Hayley Chan, Director at SoftBank Investment Advisers (SBIA) spoke with Alexandra Gheorghe, FinTech Platform Manager at Barclays and Editor in Chief of the Rise FinTech Insights report, about the need for diversity in the venture capital industry and how the SoftBank Vision Fund is striving to give diverse founders a 'seat at the table'.

Alexandra Gheorghe: Thank you so much for participating in this interview, Hayley. I want to start off with learning more about your background and why you decided to become an investor.

Hayley Chan: Ever since I was young, I was drawn to science and technology. I studied Mechanical Engineering in college, and wanted to discover the 'next big thing' that would have a positive impact on society. But over time I realised that many of the most interesting technologies from university labs lack the business model to realise their desired impact. I became an investor to learn more about what makes great businesses and to help innovative technology unlock their potential.

I started my investing career during the last financial crisis, which was a very interesting time to learn how to invest. Over the years I have invested across different industries and geographies, with a common thread in backing disruptive technologies that have reshaped and transformed how people live.

AG: Tell us about some of the FinTech work you're doing at the Vision Fund.

HC: In my role, my main focus is on FinTech. This focus comes from a belief that financial services is a core and basic need by businesses and people alike. FinTech companies are making an impact in fulfilling these core needs, particularly for the underserved markets that are traditionally overlooked or in geographies where financial infrastructure is less robust.

Dovetailing back to why I became an investor, it is as much about innovation around the product as it is around the business model – I look for FinTech companies that have a differentiated value proposition for their customers, have sustainable competitive advantages, and have demonstrated unit economics. I'm also very interested in who's leading the business, what their vision is and their execution track record.

AG: Venture Capital, and the Financial Services industry as a whole, has typically been male-dominated. What is diversity of thought and why is it important within VC?

HC: In every transaction, there is a buyer and a seller. As market participants, they have different points of view and come to different conclusions on a particular asset. Similarly, I believe my investments result from having a differentiated perspective around market dynamics or something that's misunderstood about the company.

Part of the process of formulating a differentiated insight is by leaning on diversity of thought to bring different experiences to the table. These different points of view are core to successful investments and are even more important when considering the broader impact of these investment decisions.

AG: As a female investor, what have been some of the biggest challenges you have faced throughout your career?

HC: My career can be demanding at times, requiring long hours or traveling on short notice. Balancing my career and other aspects of my life can be challenging especially after becoming a mom of two young children – I have a six-year-old daughter and a three-year-old son. For me, one of the reasons I was able to continue pushing my career forward while having a family was establishing a proper support system. That support system can look different for different people at different times, but for me that meant pivoting my career to the West Coast because that is where our family is. After having children,

I asked my in-laws to live with us which provided my husband and me with the flexibility and peace of mind to pursue dual careers. For us, this approach has worked very well. For others, it might not. It's important to determine what works best for you and your family.

AG: How does SoftBank promote diversity and inclusion across its investment teams?

HC: We are fostering diversity and inclusion in several ways. First, we established a Diversity & Inclusion Committee with senior leaders. We meet on a regular basis to discuss topics such as our work environment, flexible work arrangements and benefits to support our employees such as maternity and paternity leave, as well as elder care. We also started several affinity network groups that bring together groups of employees to celebrate and embrace our differences, leading to a more inclusive workplace. On the hiring front, we have implemented policies to ensure we are interviewing diverse candidates and have diverse interviewers involved in the selection process. We recognise there is more work to be done. As an industry, we need to continue making tangible change.

AG: SoftBank Group recently announced the Opportunity Fund¹, a new \$100 million venture fund for outstanding Black, Latinx and Native American founders. Can you share more about the fund?

HC: The Opportunity Fund is looking for companies at the seed, venture and growth stage that are using technology to disrupt different industries by creating new products or business models. They are looking for founders that have traditionally been underrepresented and hope that this fund will help reduce the barrier that they face and provide opportunities to highlight their great work.

AG: Venture Capital is a relationship-based industry. How can investors become better allies and ensure that their founder networks are more inclusive?

HC: Last year we established the Emerge accelerator in partnership with WeWork Labs to help underrepresented founders access the networks and tools they need to grow their startups. In June, we had our first cohort of 14 founders complete the programme culminating in a Startup Showcase event in front of SBIA, WeWork Labs and industry investment professionals. During the event, we announced SBIA is backing these founders with capital. This programme is a way for us to build a network of underrepresented founders. It was great to see the success of the first cohort of companies and now we are looking forward to continuing the programme with future cohorts.

AG: What resources, besides capital, can venture capitalists provide diverse teams in their portfolios to support growth?

HC: SBIA plays an active role in driving ecosystem connectivity. In partnership with the investment teams, our Operating Group aims to deliver a unique advantage to our portfolio companies while serving as advisers to their leaders—offering hands-on help, sector expertise and guidance on global expansion. We also bring together our portfolio companies so that they can learn from each other. As an example, last year we hosted Connect and Lead which brought together women leaders from our portfolio companies, providing an opportunity for them to network and explore business collaborations. We plan to host a virtual equivalent this year.

AG: Lack of diversity within tech originates from a lack of resources for underrepresented communities, thereby widening the wealth gap. Can you highlight any FinTech companies in your portfolio that are supporting wealth accumulation and financial inclusion for these underrepresented groups?

HC: I led an investment in a UK-based supply-chain finance company called Greensill which leverages a buyer's credit to provide more affordable cost of financing for its suppliers, accelerating the movement of capital into the real economy, where it is needed most. Since our investment, Greensill has launched an innovative new product that addresses the arguably most important suppliers to a company: their employees.

Employees provide services every day, but only get paid bi-weekly or monthly. In effect, as employees we are all offering our employers up to 30 days' free credit on the wages we have already earned. This in turn can mean that hard working people of all incomes have to rely on high interest overdrafts, credit cards or pay day loans to make it from pay cheque to pay cheque, or manage life's unforeseen expenses.

Greensill announced their new product **Earn'd** which helps employees to access and take control of the money they have already earned, at any point in the monthly pay cycle. This will always be free to employees, and to public sector employers – many hospital trusts in the UK's National Health Service have already signed up, meaning nursing staff can access their pay for regular hours and overtime shifts at any point. Private sector employers will pay a small fee to use the service but companies who have been early adopters have found this can be cost neutral in terms of better employee motivation, productivity and retention.

The standard of paying bi-weekly or monthly came from the limitations of a traditional payroll system – it wasn't always this way. Up until the 1950s, most employees were paid either daily or weekly in cash. The monthly payday is the product of the limitations of 1950s payroll technology. With modern technology, we can disrupt that system and provide value to both employees and their employers. To me, this is a great example of how innovative FinTech solutions level the playing field by making access to pay more efficient.



Hayley Chan
Director, SoftBank
Investment Advisers

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"FinTech is enabling a more democratised access to the tools that play a big role in helping people and businesses thrive."

Hayley Chan, SoftBank Investment Advisers



Support for **LGBTQ+** suppliers

Supplier diversity plays an integral role in growing and sustaining the US economy.

As National LGBT Chamber of Commerce (NGLCC) Co-Founder and President Justin Nelson has said, “LGBT business owners always have been an essential part of the engine that makes the US economy run and therefore deserve an equal place at the table”.

Every year, America’s corporations, state governments and federal agencies spend tens of billions of dollars in procurement contracts for everything from office supplies to jet engine parts. To help provide a level playing field for the minorities that have redefined and innovated in the country’s small businesses, those companies and government agencies have instituted supplier diversity programmes. Without them, new businesses – many of them owned by LGBT citizens – would never be noticed against the legacy businesses that have historically won these contracts.

Whether a company’s goals are to utilise top suppliers, develop new clients, bring parity to diversity practices, benchmark with other corporate partners and top firms, influence essential inclusive public policy, recruit top diverse talent or all of these, supplier diversity programmes are one of the most vital ways for a company to drive revenue and growth internally while focusing on tangible, quantifiable impacts in diverse communities. And those communities are full of potential customers, employees and vendors who are watching these actions closely.

Having dedicated supplier diversity leaders within a company who educate internal stakeholders about implicit biases can result in huge shifts in understanding that can influence the bottom line. We’ve heard far too many stories of suppliers stating that they were a finalist in a bid, and then mention their LGBT status, resulting in losing the business due to a bias that couldn’t possibly be tracked using conventional methods. It’s not just the supplier who loses out. The buyer too has lost a potentially invaluable, innovative and cost effective solution. Thankfully, the proliferation of supplier diversity as an essential element of corporate business success has helped shatter many of the stigmas and biases keeping too many diverse small business owners from succeeding.

However, there are still more than 35 US states where it’s perfectly legal for a bank or credit union officer to say, “We do not loan money to your kind”. While funding for diverse-owned businesses have increased over recent years, NGLCC’s mission includes ensuring more opportunities for funding and capacity building are established for our communities in the years ahead.

With access to capital at the forefront of founders’ minds, NGLCC connects Certified LGBTBE firms to gain access to opportunities within our network of LGBTQ+ investors. Among those in our investor work network are the Pride Fund, which works to support LGBTQ+ entrepreneurs through VC funding, and Gaingels, which co-invests alongside VC firms to support up-and-coming LGBTQ+-led companies.

We’ve seen an influx of small businesses from a wide range of industries, including FinTech firms, apply for certification, which encourages our other Certified LGBTBE and corporate stakeholders to use diverse businesses for procurement opportunities in their own supply chains.

A company’s status as a diverse supplier – whether LGBTQ+, minority, woman-owned, veteran-led or operated by a person with a disability – can serve as a key entry point to corporate supply chains. While a company’s value proposition, competitive bid and market niche are what ultimately wins a contract, supplier diversity provides an opportunity for diverse-led firms. Corporations share requests for proposal (RFPs) with us to find and match qualified suppliers that could meet the demands of their company’s supply chain.

As the COVID-19 pandemic has had a major impact on businesses, NGLCC has created virtual programmes, including MatchMaker, which offers 15-minute, one-on-one sessions for companies to meet with and pitch to procurement teams, and Sip & Pitch Friday, which allows FinTechs and entrepreneurs to pitch their products and services, and often results in investment, contracts and consumer reach.

We can never forget that our community includes women, communities of colour, people with disabilities, immigrants, veterans and so many other entrepreneurial communities who need us to stand in solidarity for a stronger and more inclusive small business economy on the other side of this outbreak and in the years to follow.



Alicia Greene
NGLCC Director of Supplier Diversity

alicia-greene-4b332240



Sabrina Kent
NGLCC Senior Vice President

sabrina-g-kent

www.nglcc.org

@NGLCC

Funding female founders is now more important than ever

Female Innovators Lab

By  BARCLAYS and  anthemis

Over the past six months, the world has seen a transformation in the way we interact with each other, the way we live and the way we work.

With many VC firms doubling down on investing in existing portfolio companies and founders balancing work and home life, the effects of COVID-19 have further heightened the need to drive capital to female founders.

According to PitchBook, from mid-March, when COVID-19 concerns started to grow, until mid-July, the total number of US deals of at least \$500,000 was down 17.5% year-on-year, with angel and seed deals down 45.1% and Series A deals down 55.5%. With only 2.8% of VC funding going to female founders' and VCs investing in their existing portfolio companies, the gender funding gap continues to widen for female founders.

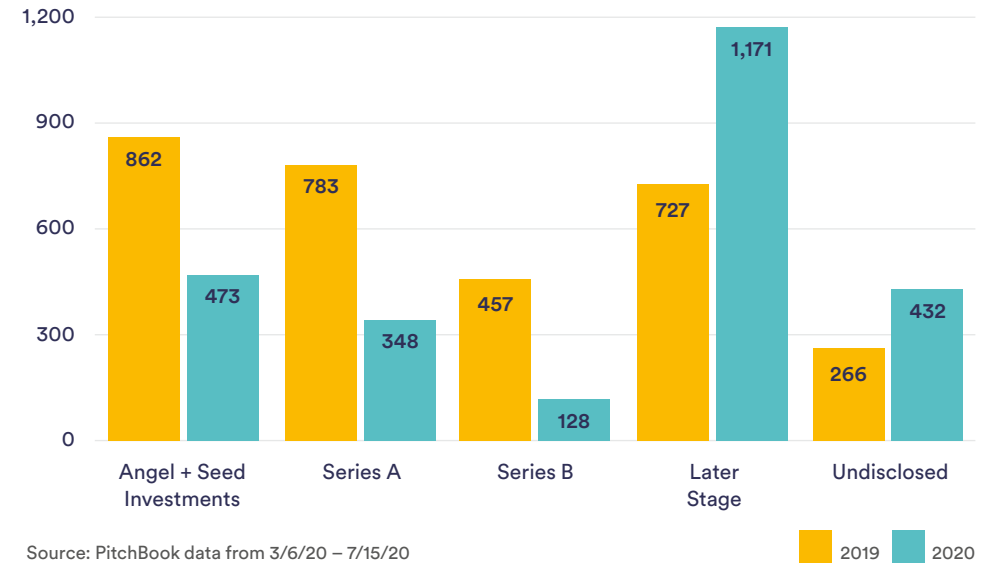
One of the areas in which women have been disproportionately impacted during this pandemic has been child care. There are approximately 74.0 million children under the age of 18 in the US alone. Balancing working from home, school closures and the requisite education needs within the confines of the home has been difficult for everyone. Researchers from University College London's Institute of Education in the UK

surveyed 3,500 families and found that mothers were 47% more likely than fathers to have either lost their job permanently or quit, and 14% more likely to have been furloughed. Mothers are also far more likely to be interrupted during paid working hours than fathers. Almost half (47%) of mothers' hours spent doing paid work is split between that and other activities such as child care, compared with under one-third (30%) of fathers' paid working hours.

Raising capital as a founder is challenging no matter what the economic backdrop looks like, but the current environment is serving as a perfect headwind that female founders have to battle against in order to raise capital. Contributors to this effect include:

- The unprecedented nature of lockdowns
- The ramifications for home life
- The stereotypical gender norms that have ensued
- VCs focusing only on existing portfolio companies

Early stage VC funding decreasing in COVID-19



In September 2019, Anthemis partnered with Barclays to launch the Female Innovators Lab with the aim of supporting female entrepreneurial talent in the financial services sector and its agencies. The Lab allows us to directly address this headwind that female founders are facing by providing them with an initial investment and matching them with the resources and mentorship required to bring a business concept to market. Additionally, as a VC committed to diversity, equity and inclusion, we have focused on building more opportunities to connect female founders and investors. In June, Anthemis, in collaboration with Ladies Who Launch and Diversity VC, hosted four hours of Female Founder Office Hours in an attempt to demystify the fundraising process. Investors from 40+ funds came together to connect with female founders, resulting in more than 180+ investor-founder meetings.

While a lot of people are discussing COVID-19 as a societal accelerant for technological disruption and digital adoption, we're working to accelerate gender and racial equity through our collective efforts in funding diverse founders.

If you're a FinTech female founder interested in learning more about the Female Innovators Lab, please feel free to contact me directly to start the conversation.



Elizabeth Davis
Investment Associate,
Anthemis

 [elizabeth-davis-0028b82b](https://www.linkedin.com/in/elizabeth-davis-0028b82b)

More resources to help female founders thrive

Decoding bias in AI

As Artificial Intelligence (AI) continues to complement and replace processes across financial services (and other industries), one must step back to consider the ethics that are encoded in AI algorithms. Bias in AI has the potential to amplify social injustice issues and inequality present in society and erode trust between humans and machines. Only when we begin considering diversity and allowing for it in algorithmic models (and in the framework of computer ethics) can we begin decoding bias in AI.

de
coding
bias

Distribution of AI companies across the Rise ecosystem

Asset management	1
Cybersecurity	1
Data management	4
Market research	1
Operations	7
Predictive analysis	4
Retail banking	1
SMEs	1
Wealth management	2

What is algorithmic bias?

A recently published AI Barometer, by the Centre of Data Ethics and Innovation (CDEI, part of the UK Government's Department for Digital, Culture, Media & Sport), highlights bias in financial decisions as the biggest risk arising from the use of data-driven technology. Understanding bias and addressing it is therefore key to designing responsible Artificial Intelligence (AI) systems.

Wikipedia describes algorithmic bias as 'systematic and repeatable errors that create unfair outcomes, such as privileging one arbitrary group of users over others'. I find it more relevant to think about algorithmic bias in terms of the impact on different groups of customers and suggest that, rather than a series of errors, bias is an indicator of an algorithm's degree of fairness.

There are numerous examples of algorithmic bias in the news, from facial analysis systems not being able to recognise dark skin, to translation services assigning gender to professions based on societal stereotypes. However, there are few examples in the area of financial services.

One relevant case is the 2019 mortgage lending study by Berkeley's Haas School of Business. Following a review of US mortgages approved between 2008 and 2015, the study found that 'both online and face-to-face lenders charge higher interest rates to African American and Latino borrowers, earning 11 to 17 percent higher profits on such loans'. This highlights how algorithmic bias can mimic the bias in manual processes carried out by humans, and can potentially amplify it as the algorithm is deployed at scale.

Where does bias originate and how can we address it?

Bias can creep in at any point in the development process. The sample data set used to train the algorithm or the wider data itself could be biased. There could be historical or societal bias intrinsic to the data (as in the mortgage lending case). Or the scientists and developers may be biased.

Awareness of the multiple sources of bias is the first step to mitigating the risk of delivering unfair outcomes. If the data input has biases, the algorithm will learn these and amplify them. An algorithm trained on data from customers previously accepted for credit could develop predictors for future credit decisions from a biased sample, thereby perpetuating the bias in the future.

Developing a culture of frequent testing to collect data in an unbiased and systematic way will help mitigate the risk. It's important to continuously augment data sources, diversifying the inputs, to reduce the reliance on a small number of characteristics.

Validating algorithms regularly, both in testing and in live production environments, is also important. This helps to ensure that any drift in performance – any deviation between live and expected outcomes – is tracked so interventions can be made as soon as possible.

Early identification of bias is made easier if the teams developing the algorithms are diverse in their thinking. Diverse teams with a range of backgrounds and experiences are in a better position to assess the impact of biased algorithms on potential outcomes, and recognise patterns and risks unique to their different experiences.

Technology and regulation both play a part

Global trends in the regulatory consultations and frameworks for AI highlight the close link between fairness and bias, on the one hand, and transparency and 'explainability', on the other. For example, the European Commission, the Monetary Authority of Singapore, the Financial Conduct Authority and the Information Commissioner's Office have all issued guidance that includes principles of fairness, bias, explainability and accountability.

A number of tools measure bias and the trustworthiness of algorithms. Some are open source, such as IBM's AI Fairness 360. Others are commercial products, such as Cortex Certifai, by CognitiveScale. Other tools focus on auditability and explainability. These include Alibi, an open-source Python library for ML model inspection and interpretation, from Rise member Seldon. In 2020, Alibi earned Seldon a CogX Best Innovation in Explainable AI award.

At the same time, there are considerable efforts across academia to develop toolkits that help identify bias and provide algorithmic transparency and explainability.

As the AI Horizontal and Conception X lead in Barclays Ventures, I've come across a number of different teams researching this area. Conception X (@conceptionxtech), of which Barclays Ventures is a foundation partner, is a not-for-profit company set up to turn deep tech PhD students into entrepreneurs and their theses into value propositions. Some examples:

- Holistic.ai is working on an approach to making AI systems regulatory-compliant and audit-ready
- Etiq.ai is helping teams identify and mitigate, at an early stage, negative biases in machine learning models

In summary, while there are tools available that can help, the need for an ethics-by-design approach and to have diversity integrated into processes and culture are key. These strategies will help improve our ability to mitigate the negative impact of algorithmic bias on business outcomes.



Ana Perales
AI Horizontal and
Conception X Lead,
Barclays Ventures

[in](#) ana-perales-49abba3
[t](#) @PeralesAB

More about AI at Barclays

Case study: Smarter Human

Smarter Human offers a SaaS solution for companies to help make their use of AI and machine learning ethical and comply with regulation.



The company

In a world where Artificial Intelligence is transforming financial services, Smarter Human is the risk diagnostic and monitoring solution that helps companies understand and monitor the risks, biases and unintended

consequences arising from their use of AI, allowing the benefits of AI to be realised ethically without disadvantaging vulnerable customers.

The proposition

Accessing credit, getting shortlisted for a new job, having qualifications graded: these are just some of the life-changing decisions which are now being made by machines rather than people.

Smarter Human helps businesses realise these opportunities by helping them make risk-based, defensible decisions about their use of machine learning in advance of clear rules being established in legal and regulatory frameworks.

Unfortunately, there have already been many cases where the algorithms making these decisions are subject to bias. The individuals impacted by algorithmic bias are often from minority groups, leading to the danger that they're disadvantaged on a mass scale.

The technology platform lets teams diagnose the bias in their machine learning applications by reviewing their data sets, algorithms and monitoring the decision making outcomes.

Machine learning technologies are not inherently biased and, if executed correctly, they offer businesses the chance to pursue increased revenue opportunities and access new operating models.



Key features

Governance and oversight over machine learning applications:

- Have visibility of your machine learning applications all in one place
- Demonstrate effective oversight to management, audit and regulators
- Get updates on regulations relating to algorithmic decision-making

Risk assessment and monitoring for machine learning applications:

- Assess risk step-by-step when launching machine learning applications
- Classify risks using our Artificial Intelligence Risk Taxonomy
- Monitor how risks are materialising for live applications

Explore and track unintended consequences of machine-based decision-making:

- Generate and explore unintended consequences scenarios
- Select and monitor highest-risk unintended consequences
- Identify if unintended consequences emerge and take action



Review and monitor algorithmic biases:

- Identify biases relevant to your data set
- Monitor outcomes of applications against potential biases
- Visualise algorithmic biases

Working with Barclays

Smarter Human was part of the 2019 London Barclays Accelerator, powered by Techstars. The programme helped the company develop and prioritise product features and platform choices based on user feedback from development and risk teams across Barclays.

www.smarter-human.com

 smarter-human
 @smarter_human

The team



Francesca Gomez
CEO,
Smarter Human



Sebastien Ben M'Barek
CTO,
Smarter Human

Rise ecosystem insights

rise

Created by
BARCLAYS

New York

- \$691m in VC investments¹
- 33 VC deals¹
- Top VC deals¹:
Trumid – \$200m
Melio Payments – \$144m
Alloy – \$40m
- 24 Rise events²
- 342 Event attendees²

London

- \$1.3 bn in VC investments¹
- 51 VC deals¹
- Top VC deals¹:
Revolut – \$500m
Thought Machine – \$125m
Quantexa – \$65m
- 34 Rise events²
- 549 Event attendees²

Mumbai

- \$70m in VC investments¹
- 6 VC deals¹
- Top VC deals¹:
Acko – \$60m
Eduvanz Financing – \$5m
goDutch – \$1.7m
- 24 Rise events²
- 885 Event attendees²

INNOVATE
FINANCE

Sources:

1: Innovate Finance via PitchBook. Q3 data, not reviewed or approved by PitchBook analysts, and not limited to Rise ecosystem companies. 2: Q3 data

From our Rise sites

Rise London

In August, we were thrilled to announce that we were once again able to open the doors of Rise London to our members. It's great to be back with the community and, although the 'new normal' makes the way we work a little more challenging, we're creative innovators so adapting to change is what we do best.



One of the biggest challenges for any startup entrepreneur is creating an effective network that helps them and their companies grow, and this has been made all the more difficult in recent times. That's where Rise comes in: we've created a vibrant and eclectic community made up of entrepreneurs, academics, techies, thought leaders and marketing pros. It's a rich environment where everyone can feed off the energy and ideas of each other. We often see our members and partners forge partnerships that are created organically through both in-person and virtual connections at Rise London.

Our members reap the benefits of a wide range of skills and experiences within the ecosystem, but FinTech and the financial services industry in general have a lot to learn about promoting other kinds of diversity. It's widely known that minority groups are under-represented in the industry. How can we change this and why is that so important?



Clare Whitehead
and Magdalena Krön
Rise London

 @clarewhite200

 magdalenakron
 @MyKron

It's not enough just to advocate for equality within the industry for its own sake, it's also vital for society. By ensuring that our industry is diverse and inclusive in its makeup, we also serve that society better. For example, encouraging kids to take an interest in STEM subjects is a great start. That's why one of our favourite events of the year is the Rise Hack with Stemettes. Each year, Stemettes, led by the inspirational Anne-Marie Imafidon, join us at Rise for a two-day hackathon where 60 young girls ideate, build and present a functional FinTech product. Their creativity blows our minds! We applaud Stemettes, who are building a diverse pipeline of tech talent in the UK, for doing a really great job.

In order for FinTech products to be truly inclusive and serve society in its widest sense, the sector must become more diverse. We must embrace individual differences – be it ethnicity, gender, sexuality, social status, age, disability or religion – and provide a platform for minority groups to grow. By encouraging more diversity in FinTech, we will all be better equipped to drive innovation within banking and create practices and services that best serve everyone in our world.

Meet founder...

Kevin Barrow

Kevin is the founder and CEO of Mark Labs. His professional background covers several domains that range from law to sustainable finance and consulting. His passion, however, has always remained the same: creating a positive impact through systems change.

Mark Labs is seeking to change the purpose of the dollar. Whereas money has historically served as a medium of exchange, a store of value, or a measure of wealth, it can now be used as an instrument for creating positive social and environmental change at scale.

The biggest barrier to Environmental Social Governance (ESG) and impact investing, however, is data. This is the premise on which Kevin founded Mark Labs. As part of the Rise community, Mark Labs is combating this challenge by developing and deploying an ESG and impact analytics platform for the sustainable investment industry. Mark Labs' mission is to unlock the full potential of capital through data analytics and artificial intelligence.

Kevin Barrow
Founder and CEO,
Mark Labs

 mark-labs

 @marklabs_



MARK LABS
OPTIMIZING IMPACT



Rise Mumbai



The world has now embraced working in a virtual environment, and we at Rise Mumbai have been instrumental in facilitating a smooth transition to this new normal for our colleagues, our FinTechs and our clients.

For example, take our collaboration with the Barclays India team in launching our new Tech Talk series of events that keep Rise members and Barclays colleagues abreast of changes in the current operating environment. We pride ourselves on being a thought leader in the innovation and emerging technologies space: this series brings together expert speakers from Barclays and the Rise Mumbai ecosystem to discuss emerging trends and how companies are transforming and driving their innovation agenda.

To provide a platform to virtually connect key stakeholders in the FinTech ecosystem, Rise Mumbai is collaborating with its partner, the Indian Chamber of Commerce to showcase the Rise Mumbai ecosystem. At a recent FinTechConnect event, Rise members presented their innovative solutions that use emerging technologies (such as blockchain and AI/ML) to a group of 75+ key FinTech influencers, senior bankers from the Indian banking ecosystem, key Barclays clients and senior tech leaders and corporate and wealth bankers from Barclays. From time to time, we're also highlighting members' solutions that have responded specifically to the challenges of COVID-19.



Lincy Therattil
Rise Mumbai

 lincy-therattil-9010157
 @LTherattil

1. mckinsey.com
2. deloitte.com

Meet founder...

Nadia Sood



Nadia is the Global CEO and Founder of CreditEnable, which she likes to describe as "Uber meets Credit Karma", a managed marketplace for SME credit where borrowers and lenders can find their perfect match at the click of a button.

A serial entrepreneur, investor and tech enthusiast, Nadia is a champion of small-and medium-sized businesses, especially those founded by women. She envisions a future where every SME is able to access affordable finance at the click of a button when they need to grow.

Nadia brings passion and vision every day to her work, where she leads a fantastic team of bright purpose-driven people who are determined to make a difference.

Nadia holds a Bachelor's in Foreign Service from Georgetown University and a Masters in International Affairs from Columbia University. She has been featured in Forbes as a tech entrepreneur to watch, is a regular contributor to international media such as the BBC and is also a published author.

Nadia Sood
Global CEO and Founder,
CreditEnable

 nadiasood
 @nadiasood

About CreditEnable

CreditEnable is a multi-award-winning credit insights and technology company that applies proprietary data analytics, and AI to build solutions to the world's biggest financial challenges.



Rise New York

Supporting inclusion is at the heart of any ecosystem, and in a place like New York, diversity is around every corner and built into the foundation of the city. The lack of diversity in financial services is no secret, and neither is the disparity among investment for diverse founders. At Rise New York, we recognise the added challenges that our diverse founders face during COVID-19 and have leaned into supporting them through our virtual offerings and mentoring opportunities, and through our efforts in building the community.

This year marked the 50th anniversary of the first Pride March in New York City, commemorating the Stonewall Riots of 1969. At Rise New York, we invited Barclays Director of Corporate Communications and Lead of the LGBTQ+ workplace network, as well as an SVP at the National LGBT Chamber of Commerce (NGLCC), for a discussion on the 'Challenges, successes and tips in cultivating an inclusive workplace'. The conversation explored intersectionality with the Black community and the history of the Stonewall Riots that were led by Black and Brown gender non-conforming and trans women, and other members of the LGBTQ+ community. The depth and positive feedback from this event led us to develop a new event series that we call Rise Impact. Every two months,



Alexandra Gheorghe
Rise New York

 gheorghealexandra
 @theAlexGheorghe

Rise will host an event addressing the need for social impact, whether that's impact investing, supporting STEM in early education or other topics.

We constantly look at the founders and companies in our Rise New York ecosystem for inspiration and feedback on our initiatives. We have a number of venture capital companies that are investing in LGBTQ+ and female founders. Plum Alley invests in advanced technology and healthcare companies that are specifically focused on early-stage STEM businesses with at least one female founder. For our diverse founder (opposite), we chose to feature David Beatty, whose company Gaingels hosted their annual summit at Rise in partnership with Barclays.

Rise New York re-opened its doors to members in September, so we look forward to welcoming back our community and continuing to drive FinTech towards more diversity and inclusion.

Meet founder...

David Beatty

When not skiing, singing, playing Catan or being quarantined, David is one of the founders of Gaingels, now one of the largest venture investment syndicates in the world when ranked by annual-run-rate of investment.

Having started as an angel group to invest in LGBT entrepreneurs, Gaingels has evolved its focus to co-investing along leading venture funds in companies that embrace LGBT leadership. From \$3M Seed rounds through \$200M late growth rounds and everything in between, Gaingels members have now invested over \$80 million in over 130 companies. Their portfolio ranges from consumer to FinTech to biotech to spacetech and includes numerous household names such as Varo, Masterclass, Madison Reed, Eight Sleep and Parsley Health.

David grew up in Ireland, attended the university of life for four years before moving to London as a headhunter. After being transferred to the US, he started his first company in 1993 to sell enterprise messaging solutions. Since then, David has started nine companies, the most recent being Gaingels and Mathison.

David Beatty
Co-Founder,
Gaingels

 dvbeatty

gaingels.com

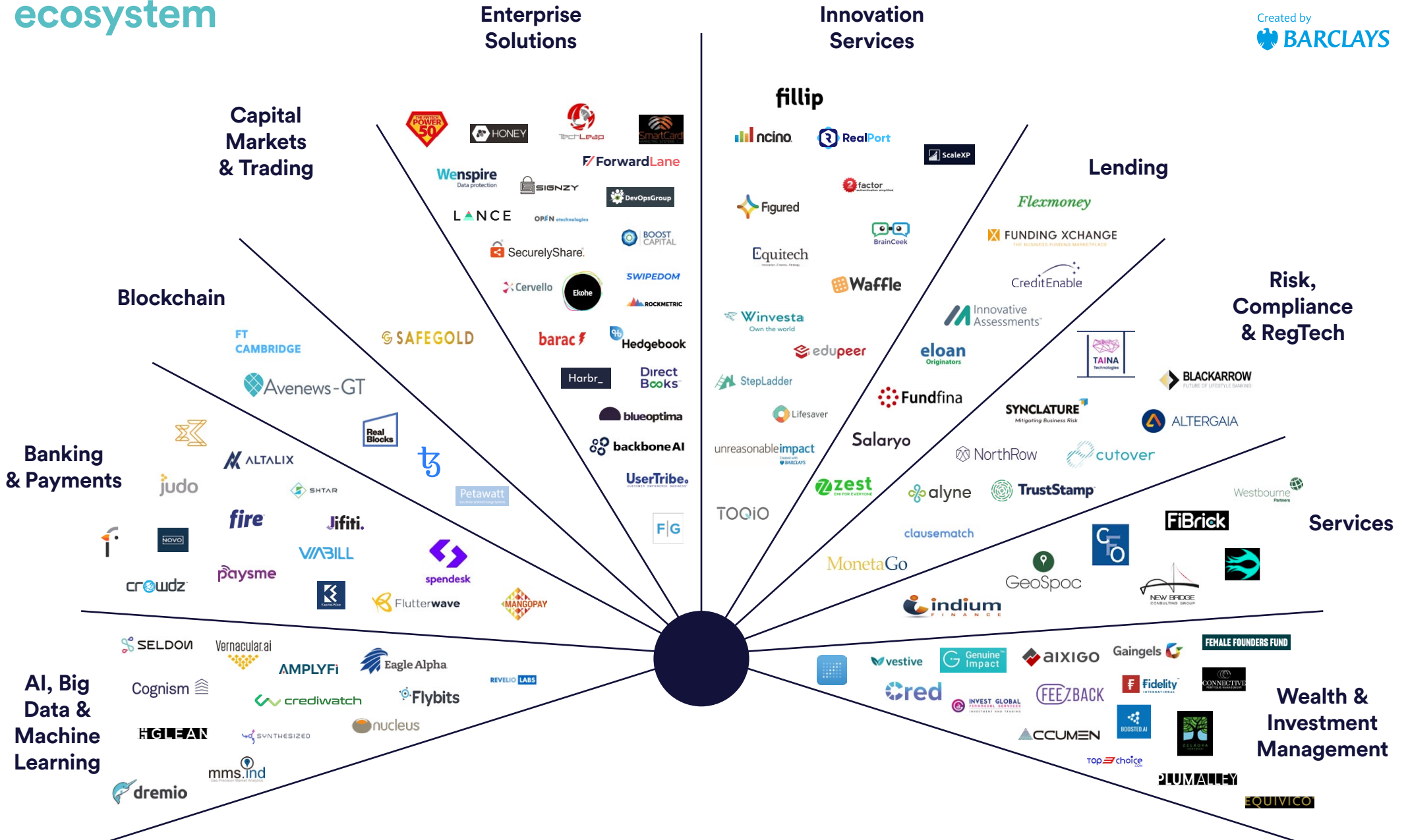
David can generally be found in the second floor cafe in Rise New York or at his desk on the third floor corralling his team into diligently focusing on process so Gaingels can continue its rampant growth.

David lives in NYC with his partner Ryan.

Gaingels 



Rise global ecosystem



This infographic shows companies resident at our Rise sites. The information is accurate at the time of publication.

rise

Created by



About Rise, created by Barclays

Rise, created by Barclays, is a global community of the world's top innovators working together to create the future of financial services. With a diverse network of FinTech talent, one of the world's leading accelerator programmes and workspaces based in the main FinTech hubs of the world, Rise is an exclusive place for FinTech companies to connect, create and scale together with Barclays.

To join our community, or keep in touch with the latest from Rise, visit or follow us on:

 rise.barclays

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