

The global market for female-oriented health technology is both consumer-facing and under-served, making it ideally placed for roll-up investments while improving health outcomes.

Dr Michelle Tempest and **Alina Trabattoni** of Candesic, examine the enormous pool of untapped demand set to send FemTech on a journey of exponential growth



FemTech

an emerging market on course for major expansion

FemTech is poised to expand exponentially as an untapped pool of female health-related demand is recognised globally and addressed on a large scale through new technologies designed to improve womens' health. Cutting-edge healthcare software, hardware and tech-enabled ventures addressing females' biological needs span from more commonly-available fertility, pregnancy, childbirth, and menopause services, through general health, cancer, aging, and nursing care.

FemTech, the umbrella term coined in 2016 by period-tracking app Clue founder Ida Tin, is already one of the fastest-growing areas in the digital health universe. Increased awareness of its unexploited potential triggered a recent acceleration of start-up investments, a trend set to continue in the coming decade.

'There's rising awareness of differences between male and female health requirements, and demand from women who want to receive healthcare tailored to their own needs, not ones just blanket-tested on the whole population' said Amelia Armour, a principal at Amadeus Capital Partners, in a recent interview. Amadeus Capital has recently invested in Baby2Body, a digital maternal-health and fitness platform.

Yet despite women managing the majority of household income and making up about half the world's population, FemTech has traditionally been niche.

Proportionately few investors venture towards this demographic. This market inefficiency has been justified by the investment sector's male-dominated nature, coupled with a general lack of understanding and the shroud of confi-

dentiality characterising this particular value proposition.

'Venture capital community decision makers are nearly 90% men,' said Linda Greub, co-founder and managing partner of FemTech investment company Avestria Ventures, in an interview. It may be difficult for a man to exalt 'his new investment in an incontinence company or a vaginal atrophy solution, or a device for postpartum haemorrhaging.'

THE PLETHORA OF STEREOTYPES AND MISCONCEPTIONS SURROUNDING PRODUCTS TARGETING WOMEN'S HEALTH ARE AN OBSTACLE TO FEMTECH'S EXPANSION

FemTech investment annual figures over the past decade are still small, reaching £45m in 2012, £164m in 2014 and £168m in 2016 (Frost & Sullivan data, see Figure One).

'Issues like menopause, post-childbirth incontinence and declining sexuality after

menopause are side-lined and ignored by the traditional health sector, yet we have an established multi-billion dollar erectile dysfunction industry in place,' Tracy Warren, CEO of FemTech fund Astarte Ventures.

Crunching the numbers

Only a small portion of total demand is currently provided for, but this is where FemTech's growth potential lies. 'As part of our approach, we very intentionally look in areas considered 'taboo',' said Will Gibbs, early-stage health investor at Octopus Ventures.

'That's often where there is latent demand, which naturally creates opportunities for new start-ups.'

Octopus Ventures invested in Elvie, which recently raised an additional £31m in third-round private financing to further develop female hardware that includes wearable breast pumps and a smart pelvic floor exerciser. One in ten women will undergo vaginal prolapse surgery, the urinary incontinence pad market is valued at over £5.8bn by Octopus Analytics, or £14.6tn in female global annual consumer spending.

'We need to develop products and services that fulfil the requirements of women,' said Julien Payen, CEO of Lattice Medical, on the innovative reconstructive 3D-printed surgery start-up.

It's fundamental, says Payen, positioned within the £1.1bn breast implant market forecast to expand to £16.7bn by 2027, 'to develop products addressing the real unmet medical needs of women – and not simply reposition existing products for men to women.'

Hurdles to expansion

The plethora of stereotypes and misconceptions surrounding products specifically targeting women's health are an obstacle to FemTech's substantial expansion. Venture capital investment in women-run businesses funding in the US rose to £2.2bn in 2019 (see Figure Two), but this is equivalent to 2.8% of 2019 US start-up investment and is but a drop in the ocean.

The irony in these troubled Covid times is that women dominate keyworker jobs, making up over 60% of the health, care and education workforce that keeps the cogs churning during the pandemic.

While 80% of total medical and health-care professionals are female, most of them are nurses. Less than 40% are in management roles, only 4% are CEOs, and they hold only 21% of board seats in Fortune 500 healthcare companies.

Venture funds, meanwhile, are typically majority white and male. Female partners in digital health fund ventures total only 12.6%, and women closed only 14% of 2019 deals (Rock Health data).

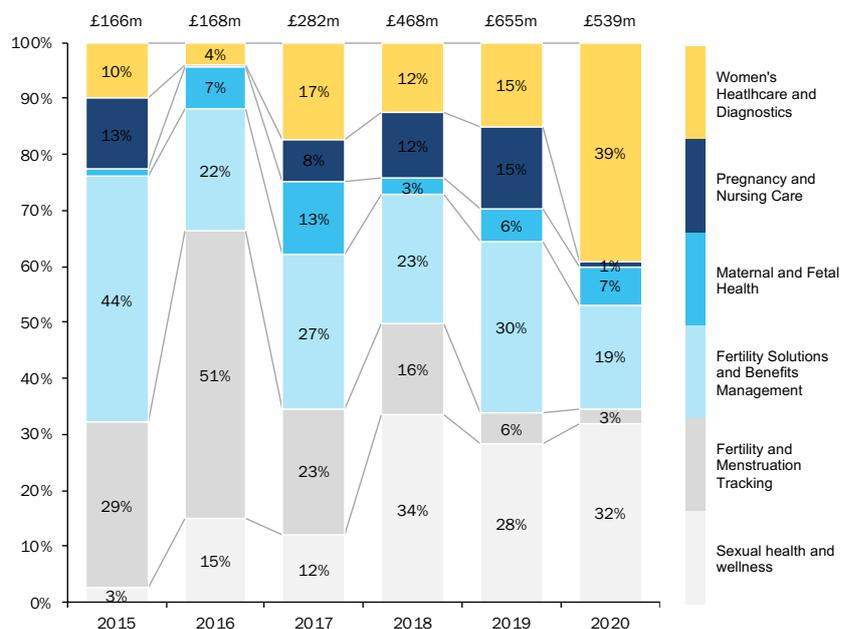
'There is no question that implicit bias exists,' said Elizabeth Bailey, managing director of FemTech fund Rhia Ventures, in an interview. 'One important way to change this is to have more women investors in decision-making roles.'

A gender gap also exists on another level, that of evolutionary bias in data and the systemic lack of it in relation to women. Life sciences research has been largely biased towards men, a practice dating back to 1977 when the United States Food and Drug Administration (FDA) banned most women of childbearing potential from clinical research trials, paving the way for the so-called 'gender data gap.'

This is amply documented in research including in Caroline Criado Perez's *Invisible Women: Exposing Data Bias in a World Designed for Men*.

For decades following the FDA-initiated practise, women were globally excluded from trials on the basis that their cyclical hormone fluctuations purportedly introduced unreliable variables, and as a way of de-risking damage to unexpected pregnancies. The practise, which largely continues today and results in trial data lakes used for developing drugs and dosages based on majority male physiological data, also impacts data used for

FIGURE ONE
SHARE OF FEMTECH INVESTMENT BY DIFFERENT SEGMENTS



SOURCE FROST & SULLIVAN DATA, CANDESCIC RESEARCH AND ANALYSIS

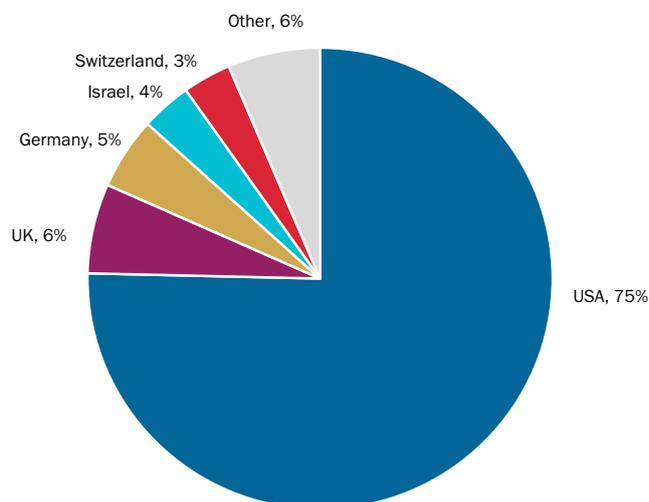
Outlook

To date, FemTech primarily focusses on pregnancy, maternal and sexual health. Fortified by burgeoning personalised AI technology, it will continue to expand into other domains including weight, disease and pain management, as well as general, mental, diabetes, cancer and heart health. Innovation tracking and wearable devices, and the leveraging of genomics and big data for regenerative medicine are all touted as hot new areas, with po-

Artificial Intelligence (AI) mining. The lack of diverse and unbiased data sets, crucial to ensuring healthcare solutions work for everybody, in turn widens the gender health gap.

'How do we account for the gender health gap? The problems lie in misdiagnosis, delays in treatment and a lower intervention rate,' said Nung Rudarakanchana, consultant vascular surgeon and Candestic expert.

FIGURE TWO
FEMTECH INVESTMENT BY COUNTRY, 2015-2020



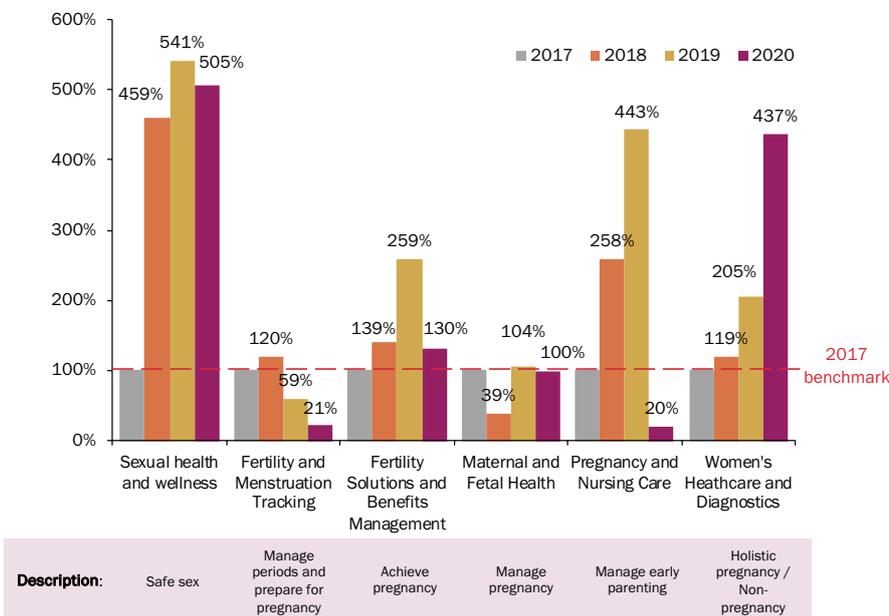
Of the companies analysed, the USA accounts for ~75% of femtech market investments

The overall femtech market is seeing a ~30% annual growth in investment

SOURCE CANDESCIC RESEARCH AND ANALYSIS

FIGURE THREE
RELATIVE GROWTH OF DIFFERENT FEMTECH SEGMENTS

FERTILITY SOLUTIONS AND HOLISTIC WOMEN'S HEALTHCARE ARE THE FASTEST GROWING MARKET FOR INVESTMENT



SOURCE CANDESIC RESEARCH AND ANALYSIS

tential growth including not just business to customer, diagnostic to customer but also business to business.

Among obvious but unserved female health spaces are those related to fertility and menopause, a condition over 1 billion women are expected to experience in 2025.

Veteran investor Armour of Amadeus Capital considers 'women experiencing the menopause to be an underserved market and one where we will see a significant growth in new products over the next few years.'

'We are very interested in businesses in the menopause space, where there is currently no category leader... It's really quite remarkable when you consider the scale of the challenge,' Octopus Ventures' Gibbs said.

No data set better illustrates FemTech's deep growth potential than comparing the 4% of healthcare R&D earmarked for female health to the estimated £364bn women spend annually on medical expenses.

Working women spend 29% more on healthcare than males and control four fifths of household medical and healthcare expenditure.

Women also make up the majority of

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caregivers, and are 75% more prone to use digital health tools than men – so it's a no brainer for the FemTech market to grow.

The pandemic

The pandemic has hurt many sectors, though uncertainty surrounding healthcare and venture capital investments is offset by opportunities abounding in new developments and innovation. Access to medical and healthcare information is being sought in different ways, with online searches for healthy living during the pandemic surging 850%, and healthy eating and exercise-related searches increasing 385% and 354% respectively, data from UK-based app assessor ORCHA show (see Figure Three).

The way people think about healthcare is changing and paves the way for sector disruption. The technology and AI focus provides potential to introduce change in FemTech at speeds unimaginable in a pre-Covid environment.

'The pandemic has forced long-awaited change,' Astarte Venture's Warren says in an interview. 'The result is a world of technological developments including telemedicine and remote monitoring. People want to engage on their own terms.'

Growth drivers for the sector include the growing expenditure on female healthcare estimated at over £364bn, the stratospheric growth of wearable devices and increasing female smartphone penetration. There is also increasing awareness of health services limitations for women in rural areas and a prolific hunger for female-specific scientific data to back industry claims, giving forward-looking investors a greenfield opportunity to tap into this exciting and potentially huge market.

'FemTech is experiencing a groundswell of interest. It's a viable commercial proposition, and also solves fundamental social problems whilst addressing huge overarching health costs,' said Sarah Kerruish chief strategy officer at Kheiron Medical (AI breast screening solution) in an interview. 'It's win-win-win.'

While the 'Land Girls' workforce that emerged during World War I and II saw their positions threatened by men returning from front lines, women of 2021 are here to stay. This dynamic clearly frames the future outcome of the sex shift that has occurred in the working prowess. The result is an opportunity for FemTech based products, VC investment and in the longer term for PE, IPOs and trade.