

UNEARTHING THE UNEXPECTED

A New Strategic Plan for Challenge Works



**CHALLENGE
WORKS**
a nesta enterprise

“WE CANNOT SOLVE OUR PROBLEMS WITH THE SAME THINKING WE USED WHEN WE CREATED THEM.”

Cover image: Courtesy NASA/JPL-Caltech.

CONTENTS

SECTION 1	03	Introducing Challenge Works
	06	The First Decade: Building a Legacy
SECTION 2	08	The Next Chapter: Unearthing the Unexpected
	09	Forward Together: Snapshots of the Possible
SECTION 3	12	Innovation in Context: Challenging the Mould
SECTION 4	16	Strategic Approach: How we Deliver
	18	How to get in touch

INTRODUCING CHALLENGE WORKS

A message from Tris Dyson
Executive Director,
Challenge Works

For a decade, Nesta Challenges has run more than 80 challenge prizes, distributed £84 million in funding and mobilised 12,000 innovators from around the world to take action.



Our prizes have not only unearthed unknown innovators and their extraordinary ideas that may have otherwise been overlooked, but we have refined and validated the challenge prize methodology as a way of catalysing real and positive change in the world.

10 years of discovery, 10 years of refining the process, 10 years of unearthing unexpected innovators: now, we're ready to do more.

Nesta Challenges is now **Challenge Works** – a fully-fledged social enterprise committed to continuing to pinpoint problems ripe for innovation; to enable the bravest and boldest innovators to thrive; and, to create timely breakthrough solutions where they are needed most. While we remain part of the Nesta family, as an established business we take forward a decade of knowledge, expertise and evidence of impact and apply it with even greater energy to solving the greatest challenges of our time.

From a concept developed by an engineer in a garden shed to manage the intermittency of renewable energy, to advancing medical diagnostic tests to help slow the spread of antimicrobial resistance and help to scale Africa's circular economy for plastics, our open innovation approach is having impact far beyond the lifetime of any one prize. Of course, none of these would have been possible without our partners – the UK Government, Innovate UK, the United Nations, the Government of Canada, The United States Agency for International Development (USAID), Amazon, Toyota Mobility Foundation, to name but a few.

“If you are a high-growth business – or even if you’re considering starting one – we’d recommend exploring taking part in a challenge prize. Even as an established business or a foundation, challenge prizes may be able to help address the issues you are trying to resolve.”

Caroline Plumb, Founder and Chief Executive of Fluidly.
Participant in Open Up Challenge, 2018

SO, WHY NOW AND WHY PRIZES?



The ways in which innovation is funded today – from government tenders to philanthropic grantmaking and corporate CSR initiatives – hasn’t changed since the post-war era. Typically, when a problem in need of a solution is identified, a tender is issued, companies share their proposals for fixing that problem and, ultimately, a contract is awarded.

This is an established process and, yet, all too often it doesn’t deliver the leaps in innovation that we need. This is because the process is based on a promise of delivery rather than on actual results. Moreover, the grants involved tend to go to big name incumbents – who seem a less risky bet – promising proposals that they know can be delivered to a fixed and itemised budget.

When it comes to investing taxpayers money, this cautious approach makes sense on paper (when the concern is accounting for itemised spend rather than for better outcomes) but it doesn’t enable real disruption or inspire new ways of thinking about old or stubborn problems.

This 1950s approach to grantmaking is freezing out unknown and untested start-ups and entrepreneurs, regardless of the quality of their ideas. Nimble small businesses with world changing ideas can’t catch a break and, yet, more than ever before, we need the unexpected and world-changing ideas that come from having as diverse a pool of talent.

Fortunately, we are starting to see some green shoots of change: stimulating and enabling innovation is an increasing priority for many governments and foundations are seeking better solutions that tackle the deep social issues compounded by the pandemic, that address climate change and boost economic recovery.

Challenge Works offers an alternative model for funders who want to take a bold, target-driven approach to innovation and who need better outcomes from their investments. With us, partners can go beyond traditional research and development (R&D) grants and instead embrace transformative methods that are able to bring together the best of public-sector strategic direction with private-sector ingenuity.

Importantly, together, we can shift the narrative of what’s possible at this time of compounding social, economic and environmental crises – celebrating and mobilising the doers, thinkers, makers, and startups that are ready and willing to take action, but need the support and structure to do it.

Now is the time to reinstate innovation as an engine of economic growth and social equity; our North Star even during this time of deep uncertainty. We know that innovative thinking improves everything from infrastructure and living standards to being a powerful driver of health and wellbeing. Our new strategic direction, grounded in five priorities, will guide us to answer this call and enable us to better amplify the power and impact of an innovation community that is larger, more coordinated, more international, and growing faster than ever.

Building on our legacy of impact with Nesta, empowered by our partnerships, and guided by our new strategic plan, we look forward to the next 10 years of action ahead.

12,823

innovator teams have engaged in solving key challenges set by Challenge Works, while 10.9 million people have engaged in the development of finalists’ solutions.

£77.9 MILLION

has been distributed to innovators and teams participating in challenge prizes, with £82.4 million total prize funds still to be won.



“The Inclusive Economy Partnership Challenge has had a big impact on [our company] Settle. We’ve been introduced to organisations we would never have thought to reach out to as a result of the programme – particularly in the private and public sector. As a result, we’ve formed a number of solid partnerships which will help us scale our operations across London.”

Rich Grahame, Settle, Inclusive Economy Partnership Financial Inclusion Challenge, 2017

THE FIRST DECADE: BUILDING A LEGACY



Ravi Gurumurthy
CEO, Nesta

In April 2012, Nesta and the UK Department for Business, Innovation & Skills (BIS) co-founded the Centre for Challenge Prizes with the mission of growing the challenge prize field through a centre of expertise, and to find, test and reward innovations that can first or most effectively demonstrate impact on the issues affecting our lives.

At the time of the launch, the then Minister of State for Universities and Science, David Willetts, heralded it as a groundbreaking new hub for expertise in designing and running challenge prizes to tackle social and technological challenges in the public interest.

And, though this was long before my time at Nesta, I can say: mission accomplished.

“For funders committed to social impact, working through Nesta Challenges’ design methodology helps to incentivise innovation while rewarding a diverse pool of collaborators.”

Tamara Rebanks, Director, Weston Family Foundation

Over the last 10 years, Nesta Challenges’ (rebranded in 2019) reach and reputation has extended far around the world, with the team running prizes across various fields, topics, and establishing strategic partnerships with the EU Commission, USAID, Bill & Melinda Gates Foundation, UNDP, the World Bank, and many, many others. Nesta Challenges has shown how challenge prizes deliver real and tangible outcomes in the form of products or services: from intelligent ultra-light carbon fibre wheelchairs designed to change the daily lives of people with lower-limb paralysis, to apps that unlock the power of open banking for consumers, and even platforms that make simulation-based surgical training accessible to practitioners worldwide.

4.5 MILLION

people across Africa utilised or benefited from the finalists’ solutions in the Fall Armyworm Tech Prize.

807 ENTRANTS

The 2020 Longitude Explorer Prize attracted 807 entrants – 55% of whom were girls, 30% identified as Black, Asian or minority ethnic, and 8% identified as having a disability.



Of course, over the years and true to their commitment to the principles of innovation, the team has also understandably perfected the art of understanding challenge prize design, the types of challenge prizes that best suit particular issues, leading to impactful delivery.

Now, with the wind in its sails, Challenge Works embarks on a new mission and a new direction. Our paths, like our history, will remain deeply interconnected but, with the world in urgent need for us to be thinking differently about catalysing innovation and R&D for the social good, the time for pursuing diverse strategies and pushing for change is needed now more than ever.

THE NEXT CHAPTER: UNEARTHING THE UNEXPECTED

Our mission is to unearth effective innovations and solve the problems that matter. We know that there are brilliant minds out there who – if given the right opportunity – can develop the solutions we need. Five strategic priorities will guide our work throughout 2022–2025:

These priorities will enable us to continue to reach our ambitious goals for growth and, most importantly, mobilise the global innovation community to take action, adapting and scaling challenge prizes to respond to the big issues of our time.

63,329

The six finalist innovators in the 2020 Rapid Recovery Challenge, set up in response to the COVID-19 pandemic, have helped 63,329 individuals with their solutions.

1 Put a laser focus on four priority areas – Climate Response, Resilient Society, Global Health, Technology Frontiers – where the opportunity is greatest, building on our strong track record in these sectors.

2 Deepen global reach and pursue larger, more ambitious challenges; working with top tier partners to scale breakthrough challenge prizes.

3 Champion the methodology of challenge prizes, catalysing a shift in mindsets away from the post-war grant and subsidy model so that R&D funding becomes truly outcome-based.

4 Nurture the capabilities of our expert team in order to improve impact, productivity and drive global growth.

5 Celebrate and expand our network of diverse and successful innovators, enabling the bravest and boldest innovators to thrive, take action and drive social impact and systems change.

FORWARD TOGETHER: SNAPSHOTS OF THE POSSIBLE

Radical thinking and collaboration are critical to enabling action and bringing about systemic change. Fortunately, challenge prizes are a tried and tested method of harnessing this energy and inspiring new and better approaches to stubborn problems.

For the next three years, we will focus our attention and resources on the opportunities in four priority areas ripe for action. These are also areas where we have a strong track record of impact:

1 **Climate Response:** Our challenge prizes will create innovations that help planet earth and its inhabitants tackle the climate crisis.

2 **Resilient Society:** Our challenge prizes will create innovations that help people participate fully in society by enabling them to access the services, opportunities and networks they need.

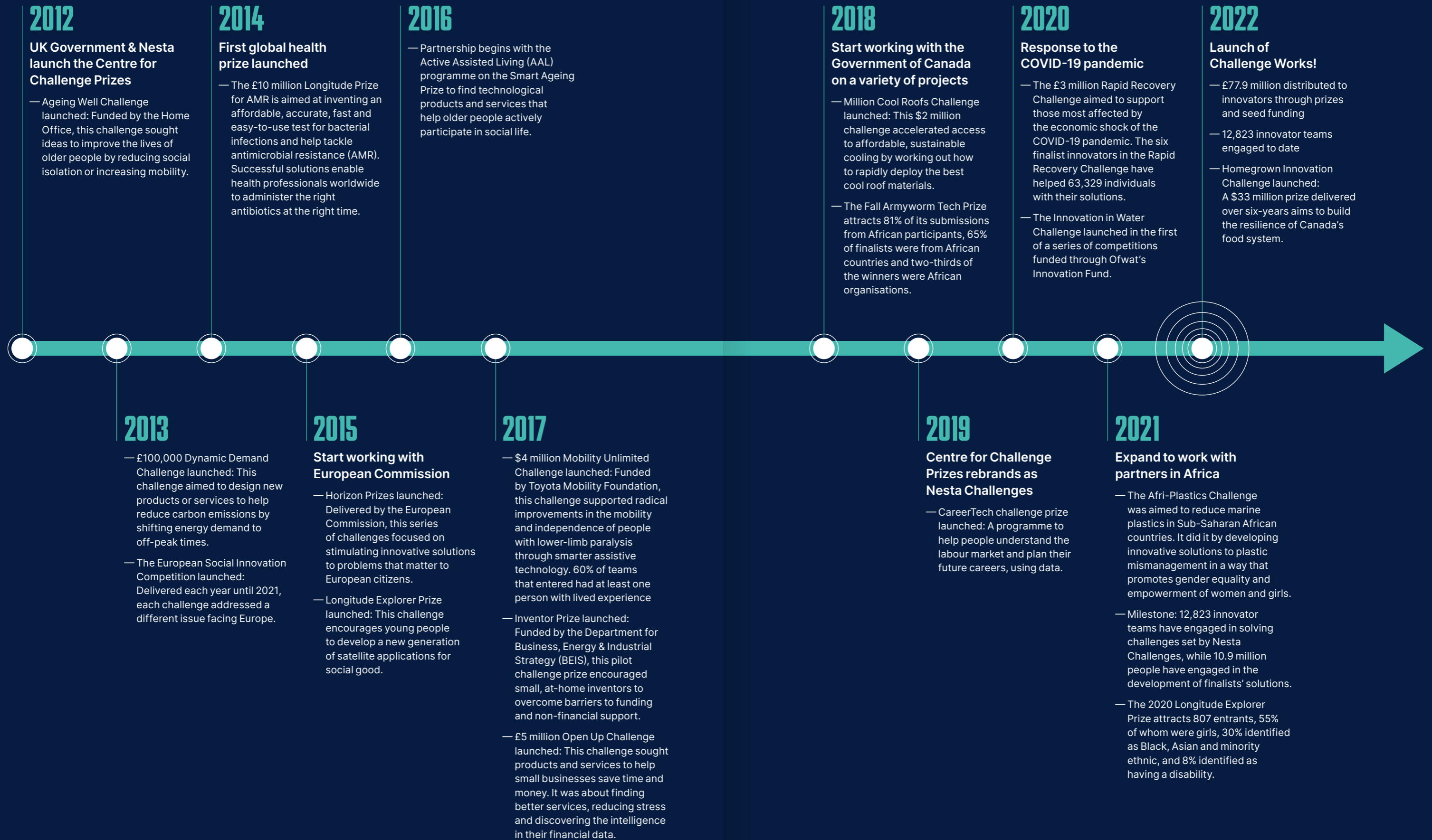
3 **Global Health:** Our challenge prizes will create innovations that enable people to prevent, diagnose and treat disease as well as mitigate chronic conditions.

4 **Technology Frontiers:** Our challenge prizes will create innovations that harness frontier science and technology and direct it toward socially useful goals.

“Thanks to the Longitude Prize, we will be able to start the development of a rapid diagnostic test, which will help to conserve the antibiotics we have and thus ensure they remain effective for as long as possible. Antimicrobial Resistance is one of the most important issues facing modern medicine in the world today and development of a rapid diagnostic has the potential to improve patient care on a global scale.”

Dame Sally Davies, 2014 (former Chief Medical Officer, UK)

CHALLENGE WORKS A DECADE OF MILESTONES



INNOVATION IN CONTEXT: CHALLENGING THE MOULD

How can we be sure innovation is being funded in the most impactful and effective way? How can we be sure the way governments are funding Research & Development (R&D) is useful and has social benefit? How do we make sure it has a return on investment for the taxpayers who may fund it? Are governments, philanthropies, grantmakers, and others committed to creating change being bold enough and taking the braver but riskier chances that only they can? Are we giving a fighting chance to all innovators, or are we locking some out of funding? Could we have better (or different) outcomes if we chose to operate differently? What is the role of philanthropic and private funding in bringing about local change? More diverse approaches to funding innovation, coupled with far more robust and rigorous evaluation of their strengths and weaknesses, could be a good place to start to answer these questions.



“The challenge gave us the opportunity to develop an existing idea into a credible product, understand what the business model would be, and gain funding. We’re excited to launch Community Energy Manager and deliver real projects on the ground.”

Matt Wood, Community Energy Manager co-founder, Energy and Environment Open Data Challenge, 2013

But, bringing to life a diversity of R&D approaches requires boldness from funders. At Challenge Works, we argue that an overabundance of caution and discomfort with risk is holding back funders from pursuing truly impactful strategies and unlocking the changes they want to see happen.

In the text that follows, we pull to the fore the main concerns we’ve heard about what holds innovation funders back from taking action and explain how the challenge prize methodology can work to de-risk the innovation process. In our Practice Guide, we explain how challenge prizes work. We also tackle more general misconceptions that surround challenge prizes, showcasing how they make you think about funding innovation in a new way – and help readers think about how a prize process might work for them.

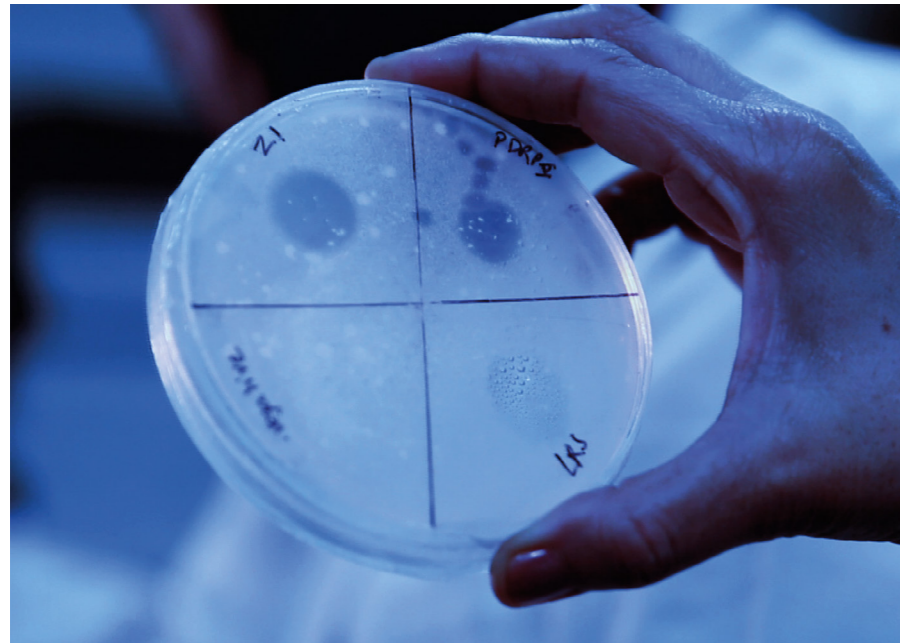
But the focus here is on what innovation funders and backers need to know now so that they can take action.

Unlike the traditional approach to grantmaking, the challenge prize methodology means that we do not specify how to solve a problem from the outset – rather, the process is designed so that multiple approaches and solutions to a problem can be developed, tried and tested, and ultimately brought into the market by the end of the prize process. Prize winners are chosen based on how closely they align with the criteria set: this does not mean that any of the other solutions to this point are not complete or defective – rather that they just didn’t match the final judging criteria set for this specific prize. In fact, while a prize may ultimately award a small number of winners, we find that the process benefits the cohort of teams that compete as semi-finalists and finalists and contributes to their success too. Often, in just a matter of months, the prize process unearths multiple solutions to a problem.

By enabling participants to start, literally, from the point of “I have an idea”, the process levels the playing field for innovators and entrepreneurs who are too often overlooked by traditional grant funding. Equally, by dismantling the barriers to entry, challenge prizes are much more open in every sense: open to start ups or innovators who have the skills but perhaps not the connections or guidance, open to more radical ideas and open to different approaches, technologies or methodologies.

“Since the CareerTech Challenge Prize concluded, we’ve facilitated over 15,000 conversations between coaches and customers. Through our approach to measuring impact using the UK Social Value Bank, we’ve now evidenced over £26M in social value across over 20 employment, wellbeing and financial outcomes that our customers have achieved.”

Dominic Atkinson, Co-Founder and CEO at Stay Nimble.
Participant in the CareerTech Challenge Prize, 2021



Through the Longitude Prize on AMR (antimicrobial resistance), for example, which is looking for a team of researchers to invent an affordable, accurate, fast and easy-to-use test for bacterial infections that will help slow the rise of antibiotic resistance, we’ve seen a range of commercial product prototypes be developed by participating teams of innovators from around the world since the challenge began in 2014. Similarly, the USD \$1 million Mobility Unlimited Challenge – won by Phoenix Instinct, founded by Andrew Slorance – resulted in the creation of an ultra-lightweight manual wheelchair made from carbon-fibre that uses smart sensors, enabling it to configure itself to what the user is doing and so remaining in sync with how the person moves.

Without the prize approach levelling the playing-field for unknown and untested innovators like Andrew, the Phoenix Instinct wheelchair may have remained just an idea on paper.

The granular ability to track progress is also a unique selling point of the method. Throughout the prize process, testing and validation checkpoints or “stage gates” at key intervals are set up. This not only means that innovators are encouraged and enabled to build prototypes, receive feedback, take more risks, iterate and respond to the evolving needs of end users and so on, but that the funder can assess how innovators are moving through the product/service development process and review what’s needed to ensure innovator success.

“The funding, recognition and increased profile that taking part brought us was the springboard that enabled us to convert an abstract idea into an active venture.”

Devrim Celal, CEO, KrakenFlex.
Participant in Dynamic Demand Challenge, 2013



Funders can weigh up whether the participants are on track, following best practice and, indeed, consider what other type of support – whether that’s additional seed-funding, recruitment, publicity efforts, or mentorship – may be needed to help get players over the line. Importantly, linking some or all funding to outcomes and supporting multiple innovators can mitigate risk while still giving innovators the space to truly innovate. Equally, with multiple entities supported to progress groundbreaking ideas, prizes have impact beyond their lifetime and participants use them as a platform for growth. KrakenFlex is one example – solving the challenge of intermittent renewable energy supplies. It began as an idea in a garden shed, and has developed into a service being rolled out by a national energy company.

It’s important to flag here too that we kick off all of our projects with an in-depth ‘discover and define research’ phase that creates a solid foundation for the work from the get-go. Through expert consultations (interviews and workshops), we develop a clear and comprehensive understanding of the problem, identify key issues, identify likely barriers well in advance, map out key players, and more. It’s equally critical to use this period to determine and define the prize outcome upfront effectively. That means setting a prize target that is demonstrably “better” than the current status quo but for which there are also credible solution pathways. With all this information in hand, we shape the prize to create appropriate staging and incentives for target groups of innovators and support the successful implementation of the prize to achieve impact.

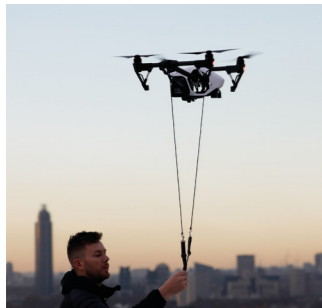
Back to investment: since a challenge prize only pays out for a solution after it is proven to work, it means judgement can be reserved by funders, further de-risking investment in unknown innovators and companies, and tapping into their potential that may have been missed otherwise. Importantly, especially for government funders, setting out a clear mission for a prize from the outset also legitimises working on the problem. They also generate evidence, raise the profile of an issue and – of course – showcase that solutions are possible.

We are in an uncertain time, with many great problems requiring urgent fixes, from climate change to ageing populations, from uncertainties around data to the economic impact of the COVID-19 pandemic, from global inequality to sustainable development. If we can set clear coherent goals or missions to sectors that need an innovation push; if a set of innovators working on problems would gain greater credibility through visibility, and/or where a sector would benefit from public demonstration of the value of the technology being produced in its name, challenge prizes have a role to play.

It’s time for funders to be bold.

STRATEGIC APPROACH: HOW WE DELIVER

Our challenge prize model focuses on solving problems by engaging with organisations, as funders and clients. To ensure that value and tangible impact are delivered, we adapt and pivot to stay relevant, and operate as a sustainable enterprise. We customise the shape, delivery and duration of each challenge prize to suit your objectives.



Because of the specific problem focus of challenge prizes, and therefore different designs, it can be difficult for someone thinking about running a challenge prize to visualise what it could look like. Therefore, we've created six challenge blueprints to help illustrate common (but certainly not definitive or all inclusive) challenge prize forms.

“The process of developing and launching our service in sprints was really helpful, and enabled us to get stuff done in a really short space of time, but then have time to reflect on it. Even though we didn't win, we did have a good experience, and it was an interesting process to go through.”

Amelia Lee from The Proud Trust.
Finalist in the Tech to Connect Challenge, 2020

1.

Breakthrough prizes — aiming to create transformative solutions to a difficult problem, breakthrough prizes usually have ambitious and tightly defined goals, are driving to a technological solution and require larger prize pots and longer timeframes. One example is the Longitude Prize.

2.

Scaling prizes — aiming to scale transformative innovations so that solutions achieve wider impact, scaling prizes are looking for innovations that enable innovators to scale faster and better and usually include quantitative thresholds that reward innovators who reach (sustainable) scale. One example is the Afri-Plastics Challenge.

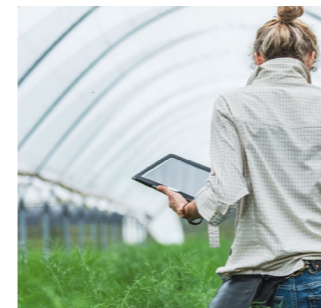
3.

Startup prizes — aiming to build capacity of early stage innovators and support their entry into the market, startup prizes focus on bringing new innovators and new ideas into a field and have an emphasis on building innovator capacity. One example is the Longitude Explorer Prize.



4.

Community-centred prizes — aiming to develop better solutions by bringing innovators and communities together, community-centred prizes are usually designed in response to communities being neglected or underserved by existing solutions. They have a particular emphasis on facilitating meaningful interactions and collaboration between innovators and the communities affected by the issue through co-creation, mentoring and events. One example is the Data Driven Farming Prize.



5.

Spotlight prize — aiming to shine a light on a neglected issue or problem, spotlight prizes focus on problems that suffer from a lack of awareness (and where that lack of awareness is a key barrier to innovation). They typically feature significant investment in public relations and communications. One example is the Mobility Unlimited Challenge.



6.

Testbed prize — aiming to stimulate innovation in support of policy or regulatory objectives, testbed prizes are typically used by governments and regulators with an interest in safely bringing new innovations and technologies to the market. These prizes may include providing safe testing environments – physical or virtual – in which innovators can experiment in a controlled fashion. One example is the Legal Access Challenge.

Many prizes take on components of each of these blueprints – we can help you mix and match features as best suits your objectives. Across all components of challenge prize design and delivery, Challenge Works works with partners in a number of bespoke ways, including full challenge design and delivery, partial challenge design and delivery, and advisory support.

ABOUT CHALLENGE WORKS

Challenge Works is the new name of Nesta Challenges. We are a social enterprise founded by the UK's innovation agency Nesta. For a decade, we have established ourselves as a global leader in the design and delivery of high-impact challenge prizes that incentivise cutting-edge innovation for social good. In the last 10 years, we have run more than 80 prizes, distributed £84 million in funding and engaged with 12,000 innovators.

The world finds itself at a critical juncture. Together, we face multiple compounding problems, but there is enormous opportunity to discover solutions and expand innovation frontiers. The impact of climate change is felt more harshly by the year, but innovation can mitigate this impact; the growth of chronic health conditions and the widening global inequity in access to healthcare can be reversed; an ever more complex, connected and digitally driven world poses a multiplicity of societal challenges but also makes rapid, positive, life-changing technological change possible – if harnessed and directed properly.

We believe no challenge is unsolvable. Challenge Works partners with organisations, charities and governments around the globe to unearth the entrepreneurs and their innovations that can solve the greatest challenges of our time.

Challenge prizes champion open innovation through competition. We specify a problem that needs solving, but not what the solution should be. We offer large cash incentives to encourage diverse innovators to apply their ingenuity to solving the problem. The most promising solutions are rewarded with seed funding and expert capacity building support, so that they can prove their impact and effectiveness. The first or best innovation to solve the problem wins. This approach levels the playing field for unknown and previously untested innovators so that the best ideas, no matter their origin, are brought to bear on the most difficult of global challenges.

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