



ACTING FOR CHANGE



THE TRINITY CHALLENGE ANNUAL REPORT & ACCOUNTS 2021

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ANNUAL REPORT & ACCOUNTS 2021

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CHAIR'S FOREWORD

The COVID-19 pandemic has demonstrated time after time how we need different data, larger data sets and new skills, including data engineers and mathematicians. We established The Trinity Challenge (TTC) to increase and pull innovation using data for health: neither limiting where the data comes from, nor where used.

We, the TTC collaboration, share a vision where improving and protecting health across the entire world does not just use data from the health sector, it goes much broader. Our challenge has showed how important the data sets generated and held by the private sector are: from behavioural to mobility, from weather to satellite and beyond.

We, TTC challenged the world to propose solutions that are scalable as global public goods for all to better predict and manage pandemics. A fantastic 340 applications came in from over 60 countries. Our amazing judging panel assessed these, resulting in eight winners of the cash prizes who are also receiving ongoing innovation support.

In this report, you can read the innovations that this inaugural TTC challenge is making happen. The TTC trustees and steering committee are all thrilled with the response and excited about how successful this challenge methodology has been.

I want to thank everyone who has made this inaugural TTC challenge a success, many of whom we name in this report: from donors to applicants and, of course, our thought partners, McKinsey & Company and our small and great secretariat team. I also join our prize winners in appreciating the mentoring support given by our Collaboration Partners to our prize winners.

Looking forward, I would love to run a challenge on data and Antimicrobial Resistance (AMR). If you are interested in AMR or other health and data challenges, please get in touch with me to talk through the full range of opportunities.

A big congratulations to all our prize winners. We know each one of you will make a difference to health across the globe.



Dame Sally C. Davies GCB DBE FRS FMedSci FRCP
Executive Chair

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WHO WE ARE AND WHY WE ARE HERE

Who We Are

The Trinity Challenge (TTC) is a charity that endeavours to solve complex global health problems through a programme of incentives and accelerated innovation.

Our Vision for Change

The vision and founding premise of The Trinity Challenge is that a smarter, more cross-sectoral approach to data & analytics is vital to building effective, affordable and scalable surveillance and response systems around the threat of infectious diseases.

We have sought to leverage the advances in data tools and technology in new ways that are more agile, more effective, less expensive and benefit more people and communities.

A key learning from the early phase of the pandemic is that where there was data, decision makers lacked access. And where there was access, we lacked interoperability and linkage.

Therefore, as a matter of priority, we looked to strengthen the data ecosystem, while protecting privacy of individuals, but sharing data for value. Working with a coalition of partners we aim to promote trusted, transparent and inclusive data tools that will achieve long term health and economic benefits for society at large.

The need to establish a network of communities, where interdisciplinary solutions have the power to shape our responses to health crises, enabling us to be better prepared for the next pandemic. By fostering collaboration, we want to see a world that is better equipped to deal with the impact of current and future pandemics, while simultaneously creating global goods for universal benefit. At the heart of this mission lies the belief that, where possible, the best ideas generally arise from the communities in which they are seeded, to ensure greater acceptance, and greater progress.

Our Mission (What We Do)

We are creating right incentives to develop solutions that leverage the power of data science, technology, machine learning, and artificial intelligence to increase disease surveillance and pandemic preparedness, and to inform and support policy and practical responses. We are facilitating the rapid development of tools that could help create a more equitable health landscape, to support access to healthcare for some of the world's most vulnerable populations. We work across siloed disciplines, bringing competitors together as collaborators.

The lack of access to data, the lack of interoperability between systems and in some cases, the absence of data, have all contributed to fragmented approaches and measures for dealing with the pandemic. Our deep understanding of the data ecosystem has enabled us to identify solutions that will plug the gaps in our data knowledge, to help us identify, respond to, and recover from the increasing incidences of zoonotic threats to human health.

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Our Purpose (Why We're Doing It)

The current Covid-19 pandemic has resulted in over 20 million excess deaths globally. It has not affected countries and communities equitably. Those living in impoverished conditions and with the most fragile health systems have borne the brunt of its effects and will do so in future health crises. COVID-19 has demonstrated how unprepared we were for a pandemic, and the impact on our socio-economic systems has underscored the need for collective action now, to be better prepared in the future.

The Trinity Challenge recognised the critical need to engineer a collision between data science, public health, and policy to better protect our populations and respond effectively to epidemic emergencies. More importantly, we are committed to finding solutions that could be applied to resource-constrained settings, and thus have a chance to create sustainable impact where it is most needed.

Our Achievements

We established a coalition & promoted cooperation

The scale and scope of our membership is unmatched, bringing together world-renowned organisations and institutions from the private, public, academic and non-profit sectors. By contributing their time, data and resources, our coalition has been able to catalyse and support the work of Challenge teams.

Across academia, private & public organisations and NGOs, The Trinity Challenge took shape in September 2020, to contribute to pandemic preparedness and response, thus helping to ensure we would never again have to suffer another pandemic of the magnitude of COVID-19.

There is broad agreement that the global response could have been better supported if data and access to it had been available and better. This highlighted the need for governments and health agencies to adopt a different and proactive stance in the fight against existing and emerging diseases.

The Trinity Challenge set out to be a key step in this process, and to empower scientists, clinicians, health agencies and frontline health workers, by providing them with data, analytics, and data tools to support their communities. We created a platform to provide the ideal conditions for unique ideas to be identified, launched, and succeed.

We created a prize fund

We successfully raised a prize fund of £5.7m to award the best ideas from across the globe.

We ran our inaugural global Challenge with carefully considered and defined categories that would address tough questions raised by the pandemic. This was structured so a truly international pool of talent could apply. We invited applications from anyone, anywhere, to submit proposals that fit one of three broad categories: to identify, respond to, or recover from pandemics.

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Guidelines for solutions

- They could focus on COVID-19 but should also be applicable to future health emergencies
- Collaboration between individuals, organisations, and institutions was strongly encouraged
- The solutions needed to demonstrate reasonable potential to achieve measurable impact within the next 3 years
- They should provide a public good that was globally accessible under fair, reasonable, and non-discriminatory terms

It was a call to action to the brightest minds to contribute novel solutions that would have a multilateral and multidisciplinary approach.

We received 340 applications from over 60 countries. This demonstrates clearly that our challenge resonated with an audience far beyond our expectation. It was proof not just of the need, but also of our global reach and the timeliness of our actions.



We offered more than just funding

We understand that funding alone does not guarantee success, and together with our coalition and our wider relational network, we have offered enhanced post-award and innovation support to our inaugural cohort of awardees. The combined experience of our coalition in nurturing and launching innovative solutions on a global scale is unparalleled, and The Trinity Challenge is a showcase of what public-private partnerships can offer.

We took decisive action, working to an accelerated timeline. So that in June 2021, within just nine months of our inception, The Trinity Challenge hosted a virtual, inaugural awards ceremony. With an international audience of nearly 500 people, we recognised the trailblazing work of research and technology teams in countries including Thailand, India and Kenya. In addition to funding, the winners had the opportunity to be mentored by TTC coalition members, enabling them to

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bring transformational ideas to fruition and to scale, to benefit the health of millions.

- By furthering the creation of health tools that are suited to low and middle-income countries, we are strengthening health systems, saving both lives and livelihoods.
- We are supporting cutting-edge research by enabling a sharing of supporting mechanisms and championing the outcomes of robust research and proven innovations.
- Through data science, using broader data looking to confront pandemic threats, in novel ways.

We uncovered unique and novel solutions using data, analytics & artificial intelligence, which are set to improve the health of communities around the world.

These are the winning solutions, most of whom are already making an impact in communities somewhere in the world.

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CHALLENGE WINNERS

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PODD: Participatory OneHealth Disease Detection

The PODD team were the Grand Prize winners at the Awards Ceremony in June 2021, receiving a financial award of £1.3m.

Based in Thailand, the PODD team have developed an app that can be used with an inexpensive Android phone and distributed these to farmers and livestock owners in parts of rural Thailand.

This turns them into disease detectives, allowing them to take photos of sick animals, which in turn connects them to local animal health agencies, who step in. Symptomatic animals are separated from the rest of the herd – thus saving livelihoods – while symptoms that appear in proximate humans can also be tracked for signs of zoonotic disease crossover. Their One Health approach is in perfect synergy with calls from international health agencies who, in the light of this pandemic, believe that tracking disease spillover from animals to humans is now of vital importance to prevent future health crises on the scale of the current one. Although COVID-19 was not part of their core solution, the PODD team has been supporting the Thai government's response



to the pandemic, by adapting their app to track available beds in hospitals for those who tested positive and were displaying symptoms.

The team is now working with neighbouring countries including Laos and Cambodia.

Post-Award Impact

With funding and mentoring support from The Trinity Challenge, the PODD Toolkit project officially kicked off on 11th October 2022 at Chiang Mai University, with the Thai Government Department of Livestock Development. Target international implementation communities were selected in Laos and Cambodia through a partnership with the Thai Department of Livestock Development and the corresponding agencies in these countries.

Myanmar is also a region of interest and PODD is looking to coordinate with local officials in cities on the Thai-Myanmar border.

These three countries have existing relationships with Thailand which makes it easier to gain local support for PODD projects. Expanding their solution to these countries will require hands-on support from team members. PODD has also established cross-organisational working committees devoted to each target country.

From the technical side of things, the chief architect for PODD is redesigning the system from the ground up and is assembling a team to oversee development of the Toolkit. Designing the system for other countries than Thailand has required a rethink of several components of PODD. The Trinity Challenge has also facilitated introductions between PODD and the India Health Fund.

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Benefits of participating in The Trinity Challenge:

“Applying to The Trinity Challenge forced us to define for a global audience, what PODD is and why it matters. As finalists, participating in the TTC review process compelled us to think of methods for expanding PODD outside Thailand, and ultimately led to the decision to focus on the PODD Toolkit as a model for international implementations. Once we were selected for the grand prize, both our existing network and new connections via the TTC coalition reached out to discuss future work together. We've had meetings with connections such as: Bluedot, Swiss Re, Amazon DDI, FasterCures, Healthmap, STOP Spillover, InSTEDD and more.”

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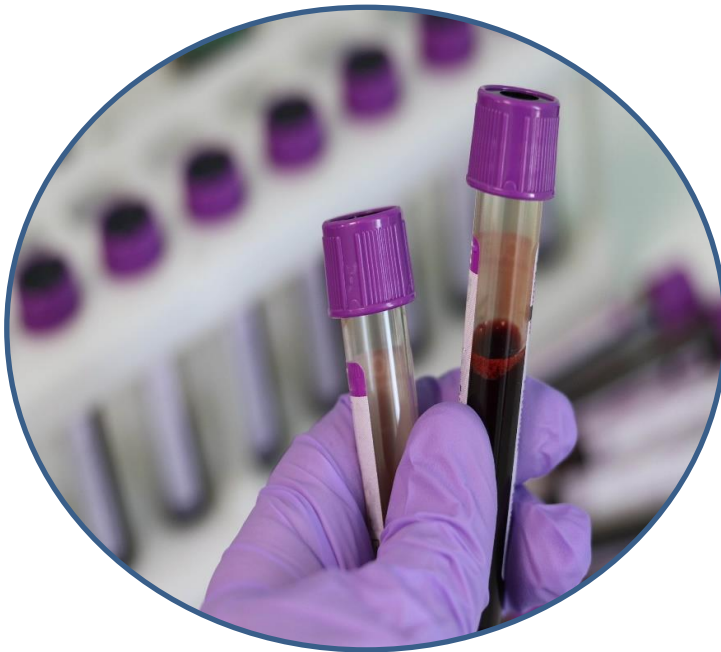
BLOOD COUNTS!

The Blood Counts team applied under the 'Identify' category and were awarded £1m as joint second prize winners.

When the COVID-19 pandemic began, the team identified that public health organisations needed globally accessible technologies for monitoring infectious disease outbreaks, including ones caused by novel pathogens. Detection needed to be rapid to deliver effective infection control. Any effective solution also needs to rely as little as possible on prior-knowledge and should function effectively in resource-poor settings, with limited on-site data analysis and storage requirements.

The team therefore looked to a routine medical practice – a blood test.

3.6 billion Complete Blood Counts (CBCs) are performed globally each year and are the starting point for diagnosing illness around the world. Around 70% of these are analysed using machines from the same Japanese company – Sysmex. After reporting of high-level summary results which clinicians use to diagnose and treat patients, the Rich CBC (R-CBC) laser measurement data held in the Sysmex 'black box' is usually discarded at a week.



With their solution at the proof-of-concept stage, The Blood Counts team suggested that these data points could be used to detect infectious disease outbreaks. In the initial phase, 'rescued' 2.8M R-CBC measurements performed on the Greater North-London and Cambridgeshire population (6M) were used. They developed machine-learning models which were able to detect the local SARS-CoV-2 outbreak in a pathogen-agnostic manner from this data.

The team also showed that their solution would work for other pathogens, including novel zoonoses, without prior knowledge of DNA/RNA sequence.

The blood test itself is cost-effective

even in low- and middle-income countries, and doesn't require new, or expensive technology. With a CBC test costing circa £1.10, scaling up to a globally accessible method for infectious disease surveillance and public health protection is eminently feasible.

The solution uses data that has already been paid for and returns additional value and importantly, the computational requirements for data analysis are small. Analysis and aggregation of this data at scale will bring other tangible benefits to society, with likely improved methods for disease detection, including heart attacks, stroke, autoimmune diseases and blood cell cancers.

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Benefits of Participating in The Trinity Challenge

The team has communicated a number of benefits arising out of their participation in The Trinity Challenge, including:

- Being able to grow the team from the core group
- Being able to develop their winning proposal for submission
- The ability to see the solution flourish - to go from a pilot study to something that can be validated and scaled up potentially to laboratories across the world, including many low- and middle-income countries.

“The Trinity challenge posed the questions – it set the Challenge, and...there were a lot of projects going on and lots of areas of investigation... having something like the Trinity Challenge brings it into focus...this is what we’re going to do... that was really useful.”

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THE SENTINEL FORECASTING SYSTEM

The Sentinel Forecasting team were joint 2nd prize winners with an award of £1m and applied to The Trinity Challenge under the 'Identify' category.

West Africa is a critical nexus of infection spillover from animals to man, as it contains some of the most biodiverse natural habitats on earth, one of the fastest growing human populations, rapidly degrading ecosystems, frequent disease outbreaks and overstretched public health systems with limited response capacities.



Image by BHossfeld on Pixabay

Examples include the rodent-borne disease Lassa fever, which is estimated to cause over 500,000 cases and 5,000 deaths across the region every year, particularly in Nigeria, and the Ebola outbreak of 2013-2016 which caused 28,616 cases, killing 11,310 people.

The majority of high consequence human diseases are animal-borne, either directly from vertebrates (zoonotic) or transmitted by animal vectors. Although the causes of such outbreaks have their roots in how humans interact with the environment, limited understanding of this area severely limits the ability of public health systems to predict and prevent future outbreaks, with severe global economic and health consequences that can overrun healthcare systems.

The Sentinel Forecasting System will be developed firstly for Lassa fever in Nigeria before expanding the geographic scope and disease system.

The team plan a powerful, freely available information platform that will support national and regional public health decision makers to continuously integrate surveillance data and forecast disease risk in real-time or near real-time.

By integrating this solution into the public health systems of Nigeria and other West African countries, officials will manage outbreaks more easily but also, by understanding present and future spillover risks, intervene to prevent or mitigate outbreaks on the ground. The solution will:

- Connect frontline healthcare workers, hospitals, laboratories, and public health institutions to ensure efficient coordination, robust data sharing, and real-time analytics for risk forecasting and rapid response.
- Empower the entire public health community – from frontline workers to national authorities – to deploy the Sentinel Forecasting System anywhere in West Africa and ultimately use this system to save lives and reduce economic losses.
- Leverage the Sentinel project to gain the latest information on pathogen genomics.

Post-Award Impact

The team's participation in The Trinity Challenge has attracted the interest of other organisations, and they are currently in talks to study the feasibility of using the Sentinel Forecasting system to look at Japanese encephalitis in India. The Trinity Challenge has also facilitated introductions to the India Health Fund.

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MEDSHR

MedShr Insights and Early Warning System (EWS) were joint 3rd prize winners at the Awards Ceremony in June 2021, winning an award of £480k. They applied to participate in the Challenge under the 'Identify' category, aiming to improve our understanding of infectious diseases and identify outbreaks early and potential future pandemics.

Low and middle-income countries can have limited resources and a fragile health infrastructure, which limit the ability to find timely, credible information to identify disease outbreaks in these regions.

MedShr was set up to improve healthcare and save lives, through peer-to-peer learning and shared knowledge. MedShr case discussions enable doctors and healthcare professionals (HCPs) to improve their practice and achieve better outcomes for their patients. The platform is available globally as an app or on the world wide web. This approach to lifelong learning through collaboration has been extended through new features and the MedShr Learning platform.

The system is also used as part of formal medical education, for example MedShr is currently supporting 40 free programmes for a range of doctors, dentists and healthcare practitioners (HCPs) in collaboration with



Health Education England.

The same principles also apply to MedShr Insights and their commitment to public good and global health impact can be seen through their provision of the Early Warning System on a not-for-profit basis, with the ambition of this being with no fees for partners in low and middle-income countries.

MedShr has increasing membership in such countries, especially across Africa, the Middle East and South Asia. This enables doctors and HCPs to engage with one another both locally and globally, and with educational content, to improve their practice; and in the process they provide real world data that underpins MedShr Insights and EWS.

At the time of their application to The Trinity Challenge, MedShr had over 1.5m doctors across 195 countries connected through its peer-to-peer learning platform. Their membership was increasing by approximately 30,000 new members every month, and the projected membership looked set to exceed 2 million before the end of 2022.

It is thus uniquely positioned to develop an early warning system for infectious and novel diseases by applying AI, Natural Language Processing (NLP), and social listening technology to its real-world medical data. There is also potential for it to expand to ingest scientific research, electronic medical records and social media for an even stronger surveillance system in the future.

Through their use of performance metrics, user feedback, engagement workshops, client and partner meetings as well as in-house and published research, MedShr gains an enhanced understanding of member and client needs. There is a widespread ongoing programme of multi-

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channel engagement to extend this consultation, and recent meetings with potential clients and partners such as the Institute of Health Metrics and Evaluation, McKinsey Consultants and Dr Evidence have included product profiling and prototype demonstrations.

Post-Award Impact

MedShr has been growing rapidly with over 40,000 new members every month, and they estimate that they will pass 2 million members globally in March 2022. There has been good progress with their AI-driven Insights commercial platform that leads into the EWS, and they have been working on geolocation and infectious disease identification.

MedShr's organic activity in peer-to-peer learning is being applied to particular HCP cohorts and/or geographies. For example, MedShr has extended their COVID and Global Health (GH) programmes, and are now educating members on Sickle Cell disease, maternal health and HIV, as well as malaria and tuberculosis.

In November 2021, MedShr entered into a for-profit agreement with a coalition member, Dr Evidence, to take their DocSearch technology used for searching scientific publications, to doctors in clinical practice. Although this part of MedShr's platform is behind a paywall, it demonstrates the leveraging power of the coalition.

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KHUSHI HEALTH

Khushi Health applied to The Trinity Challenge under the 'Respond' category and was joint 3rd prize winners, receiving £480k.

Khushi Health is a digital health platform that has been designed to:

- Empower community health workers (CHWs) with offline mobile health tools to screen, refer, and follow-up with COVID-19 symptoms, comorbidity, vaccine schedules, and adverse events
- Empower health officials with GIS-dashboards and automated communication platforms to deliver targeted, scalable responses.

Khushi Health operates in India, where during the early pandemic waves, the country's public health infrastructure was overburdened by cases in major city centres, and unable to provide hospital care. Although India does have a decentralised health workforce at the village level to serve 70% of its 1.3 billion people, there are limited tools available to, and used by community health workers to identify outbreaks, and for health officials to respond quickly, in a targeted manner, and at scale.



The Khushi Health solution was developed to digitally empower community health workers and governments to serve citizens at risk of COVID-19 (those with medical comorbidities, who lacked access to routine medicines, who were in a higher age group, and living primarily in rural Rajasthan – a state in North-West India).

The solution was designed with community health workers, and in alignment with government guidelines.

Over five years, the Khushi Health team have conducted user interviews, on the ground feasibility studies, and held extensive feedback sessions with end-users and government programme directors. Notably, the technology solutions

for health system strengthening were developed with the Government of India in mind as a key stakeholder and were provided to the central and state governments free of cost, to be used for public health, as 'global goods'.

The Artificial Intelligence algorithms are being built in collaboration with Google AI and the Singapore Management University as Open Source. These algorithms identify and predict health worker diligence as well as individual and community health outcomes. Khushi Health has also developed public facing dashboards to present current, anonymised, and aggregated scenarios from syndromic surveillance.

Post-Award Impact

Over the last six months, the team at Khushi Health/Baby has made significant progress. The platform has been expanded to support COVID-19 efforts through community-based tracking of COVID-19 vaccinations, antibody seroprevalence studies, and omicron forecasting.

Beyond COVID-19 tracking, the platform has been expanded laterally for vector-borne disease

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surveillance and a state-wide digital health census. Altogether, an additional 3 million beneficiaries have been screened in the least six months, and 3 million COVID-19 doses have been tracked, bringing the total reach to 17M beneficiaries impacted.

Khushi Health has now been given increasing responsibility as the Technical Support Partner to the Government of Rajasthan, supporting analytics initiatives to synthesise community-based datasets with state health insurance claims data to improve understanding of comorbidity spread in the population. State officials are now using Khushi Health's Community Health Integrated Platform dashboard to monitor multiple primary health care programmes.

They have published and implemented novel data quality metrics for their CHWs. Their work has been recently recognised as a PATH Primary Health Care Technology Challenge Winner, Google.org grantee, Patrick J. McGovern Foundation grantee, and as finalists for the UN World Food Programme's Digital Health Innovation Accelerator Programme.

Khushi Health's immediate goals include rolling out a multi-district version of their platform for longitudinal health tracking (expanding beyond digital health census and disease surveillance), with government-invested funds. They are also in the process of hiring new members and are hoping to open an office in Bengaluru (India), to support their growing non-profit technology and data science team.

Benefits of participating in The Trinity Challenge:

“Participating in The Trinity Challenge has unlocked catalytic financial capital, global exposure and recognition, and access to like-minded innovators and supporters operating in new geographies.

In particular, we are strengthening our collaborations with Google (specifically new collaborations with Google Health around an Android SDK for community health worker apps) and the Patrick J. McGovern Foundation to scale and enrichen our mobile health platform. We look forward to more directly collaborating with other TTC finalists in the coming year after achieving certain implementation milestones.”

The India Health Fund has also supported clinical innovations, mostly sensors and diagnostics. Recently they have also looked to support clinically-validated algorithms for radiology. Khushi Health is looking to explore synergies with how their supported platforms can integrate closely with their digital health ecosystem for community health workers.

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DISENDA: Disease Surveillance with Multi-modal Sensor Network & Data Analytics

DiSenDa were joint 3rd prize winners, awarded £480k, after applying to The Trinity Challenge in the 'Identify' category.

Their solution centred around a low-cost, multi-modal wireless sensor network, enabled by real-time data analytics, to track disease transmissions and outbreaks in human populations and environments. This early warning disease surveillance system would be piloted for COVID-19 surveillance in four low-income communities via a continuous monitoring of wastewater and air environments.



The DiSenDa team proposed a new early warning surveillance system for tracking disease outbreaks in vulnerable and underserved communities. It can help detect potential outbreaks before they spiral out of control and cost lives and livelihoods. Their sensor network can be deployed in remote areas with limited access to health services, enabling timely emergency response should an outbreak occur. More importantly, the sensors' wireless connectivity would allow for real-time transmission of results to data centres, enabling rapid tracking of infection spread and hotspots, and informed decisions for mitigation strategies by the local authorities.

The team has highly efficient protocols for sample collection and public data reporting. If successful, this project will deliver new sensor systems, which could have significant and meaningful impacts on pre-emptive outbreak mitigation and on regional economic development. More importantly, it will detect pathogens in the air and water up to a week before cases clinically present in humans.

Post-Award Impact

DiSenDa's work over the past few months has focused on improving/testing the sensitivity and specificity of their sensors. For the e-Nose (air) sensors, the sensors have been tested for the Alpha, Delta, and wild type SARS-CoV-2.

The team plans to develop new probes and conduct tests for the omicron in early 2022.

For the wastewater sensors, the team has developed a new, high-binding sticker-membrane for their bio-probes.

They have tested the sensor with the Alpha variant and a PhiX control, with very promising results. The team orders their custom-designed bio-probes for the Omicron and Delta variants and now will conduct further tests.

Through their other existing projects, the team is already connected with local (Massachusetts) companies who are able to help with manufacturing the devices. Their plan is to conduct a pilot in Massachusetts (Year 1-2) and 1 location in the Philippines (Y2/2.5-3). The partner in the Philippines is already affiliated with the wastewater treatment facility in which the sensors can be

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installed, but this overseas pilot is planned for later in the project phase (not in Y1).
The Team has also been connected with the India Health Fund, for exploratory talks.

Benefits of participating in The Trinity Challenge

The Trinity Challenge brought together two research groups led by Dr Sheree Pagsuyoin and Dr Nian Sun, that came together as DiSenDa.

“The description of the Challenge was very innovative...there were very different guidelines for a typical proposal that most of us from the university work with, so when we saw the description of The Trinity Challenge and we came together as a team, and defined what was our pitch for the project, it was giving us a different avenue to develop a project that was very needful for the public and public use.

And so, we were challenged to come up with a new design for our technology but also to be able to deploy it in a meaningful way that is useful for people, in a very rapid way too. So that's the first one.

The other one is that The Trinity Challenge has given us ...opportunities for new collaborations - like with Nian - so we are an established group at this point, and we are looking past COVID surveillance for our sensor network.... The Trinity Challenge has been connecting us with different possible opportunities for expanding our sensors and for using different applications. We are being advised by different experts from different fields including the commercialisation side like where can we use these sensors for in the future, can we use this for the detection of...let's say cholera, that was being mentioned, and that's a really old disease that maybe no one really looks at more carefully...but we have a lot of different inputs that The Trinity Challenge enabled.”

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LIVING GOODS: Supporting Digitally Enabled Community Health Workers to Strengthen Health Systems

The Living Goods team were joint 3rd prize winners, applying to The Trinity Challenge under the 'Recover' category, and receiving £480k.

Their approach was aimed at supporting resilient health systems by driving performance management of digitally empowered community health workers.

Living Goods has been working to ensure the provision of essential health services continuity through disruptions and lockdowns caused by COVID-19, by elevating its digital performance management systems for Community Health Workers (CHWs) to be more proactive and even predictive. This cost-effective approach to digitising and enhancing the performance of CHW networks is improving health outcomes at the community level and can be scaled in other environments facing similar challenges.

Their solution is aimed at tackling deaths from preventable diseases such as pneumonia, diarrhoea, and malaria. Globally, 6 million children die from these diseases, with approximately 3.1 million of these deaths occurring in Sub-Saharan Africa.

The COVID-19 pandemic has shown that interruptions in access to essential services puts children at greater risk of dying from these causes, due to the fractured health system in low and middle-income countries. Community health platforms are a proven channel to achieve universal access to primary health care, which strengthens the health system and ensures communities do not suffer from disproportionate health impacts during times of crisis. They keep healthcare affordable, while reducing unemployment and delivering a positive economic return. Currently, most CHW systems are not achieving the scale and quality needed to move the needle on health outcomes. To address this, Living Goods uses smart mobile

technology to save lives at scale particularly in resource constrained settings. 70% of their clients – largely women and children – live over 5km from the nearest health facility. Living Goods provide digital support CHWs to deliver care on call, making it easy for families to get the care they need.

This solution also impacts the lives of CHWs themselves. They improve the livelihood of their family and community, simultaneously gaining valuable skills and respect, which in turn enables them to get another job, or start a small business. Feedback from CHWs and beneficiaries is collected regularly and used to make operational and programmatic refinements. Living Goods' solution also serves the needs of governments, working closely with them to address their pressing health priorities and build their ownership of the CHW system. Data via dashboards and reports provide governments with actionable data to drive performance management. Importantly, Living Goods' digital solutions and innovations that are proven effective are open sourced and available for others to use and replicate.



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At the onset of pandemic, Living Goods made programmatic adjustments to protect CHWs and enable them to maintain essential health services during the pandemic. This included procuring PPE, providing free essential medicines for clients, and simplifying CHWs' compensation structure. As a result, Living Goods-supported CHWs reported record levels of motivation and performance, providing twice as many child treatments in 2020 as the previous year.

Post-Award Impact

Since the award, Living Goods has refined their approach to working with government through co-financing and technical assistance partnerships. They have made progress to ensure that governments have the digital capabilities and resources needed to strengthen their CHW networks and ultimately build more resilient primary health care which will in turn strengthen national health systems.

They have seen some improvements in health services at the community level particularly for those that are vulnerable. In August 2021, Kenya's Ministry of Health (MoH), Kisumu County government and Living Goods started to pilot the country's national community health digitisation programme, the Electronic Community Health Information System (eCHIS). The eCHIS pilot began with a deployment to nearly 200 upskilled and digitally-enabled CHWs. Modelled off the Smart Health app, the government's enhanced digital health solution now encompasses new operational features such as commodity tracking, community-based surveillance, data visualisation and validation. Existing features like household enrolment, service delivery, messaging, dashboards and automated integration into the Kenya Health Information System have also been enhanced to improve data quality and performance management.

In preparation for the eCHIS pilot, Living Goods provided support to the Ministry of Health-led stakeholder sensitisation and capacity building engagements at both the national and county levels. They supported a national forum to disseminate the community health digitisation strategy to key stakeholders. They also led alignment meetings to design system requirements and conducted user acceptance testing of the eCHIS prototype at national and county levels. With the Kenyan MoH reporting that only 6.7% of the national population was fully vaccinated before the end of 2021, CHWs still needed support to sustain community sensitisation and drive uptake, especially now that vaccines are more available.

Living Goods' newly deployed COVID-19 vaccine support workflow in Busia County is helping check completed referrals and track household vaccinations, building on the success of their approach to childhood vaccination tracking. Nearly two-thirds (1,311) of the CHWs being supported in Kenya have received at least one dose of the COVID-19 vaccine; this includes 88% of CHWs in Busia County, 92% in Kisumu, and 8% in Isiolo.

Benefits of participating in The Trinity Challenge:

"Our participation in The Trinity Challenge has... opened another avenue of connection with other winners and founding members of TTC.... We were able to connect with PharmAccess, and they agreed to connect us to some of their past funders because of our participation in The Trinity Challenge. We are proudly articulating our participation in TTC to our following current funders who are founding members of TTC: Bill & Melinda Gates Foundation, GlaxoSmithKline, Google, and Swiss Re and we are therefore deepening our connections with them and areas of overlap and interest. Swiss Re Foundation is a current funder for Living Goods and we have been able to engage other teams at Swiss Re to discuss using a tool that they have created with Palantir."

THE TRINITY CHALLENGE

VACCINELEDGER

VaccineLedger were joint 3rd prize winners and applied to The Trinity Challenge under the 'Recovery' category, receiving £480k.

According to a WHO report in 2018, one in three vaccines is wasted in supply chains – this is for routine immunizations. In the case of COVID-19 vaccine deliveries worldwide, this would have led to at least 6 billion vaccines being wasted in the two years 2021 and 2022, accounting for nearly US \$30bn in losses. Saving a fraction of these vaccines from going to waste means a greater number of vaccinated people, and the potential to end pandemics sooner.

Most traditional supply chain tools, however, that are used today operate in data silos and are incapable of providing continuous visibility of the products. They only collect data for a small segment of the supply chains, which is usually unusable by other stakeholders in the supply chains.



Image Torsten Simon/ Pixabay

The StaTwig/Vaccine Ledger team's solution was set up to demonstrate that a majority of these failures could be prevented with modern data tools, that provide continuous visibility of the condition of the vaccines while they are in storage or in-transit.

UNICEF and Gavi who help distribute nearly 80% of global vaccines by volume have supported this solution since 2018. UNICEF Venture Fund invested in the start-up twice so far and the team signed a Long Term Agreement (LTA) with UNICEF in September 2020. This solution also attracted the attention of UNICEF, whose Venture Fund invested in VaccineLedger's start-up twice, and with whom they signed a Long-Term Agreement in 2020.

This predated the team's application to participate in The Trinity Challenge. UNICEF also mentored the team to develop and deploy their

solution. They completed several pilots in different countries, which enabled them to collect data and gather feedback from on-the-ground immunization teams. This data and feedback helped VaccineLedger improve their product, which then was awarded joint third prize at The Trinity Challenge Awards in 2021.

Apart from UNICEF, VaccineLedger was already working with Central and two Indian State governments (Telangana and Maharashtra) to improve vaccine supply visibility in India. At the time of the Challenge, they were in the process of partnering with the Inter-American Development Bank (IADB) for deployment in Latin America.

StaTwig and its solution VaccineLedger had also been recognised by the Digital Public Good Alliance (DPGA), which is governed by an Interim Strategy Group consisting of: The Government of Sierra Leone; The Government of Norway; iSPIRT; and UNICEF.

THE TRINITY CHALLENGE

Post-Award Impact

The first of these projects is their solution for the Telangana State Government's Women and Child Welfare Department. COVID-19 has had a significant impact on both Women and Children that this department serves. Nearly 2.5 beneficiaries (pregnant and lactating women and children) depend on the state department for daily food supplies.

The supply chain currently has critical problems with visibility around procurement, distribution and delivery of these products and these were exacerbated during the COVID-19 outbreak. VaccineLedger is helping to solve these problems by customising their solution. "The Trinity Challenge funding is helping us cover the customisation and initial pilot costs to validate the solution."

Another new initiative is the deployment of their solution in Costa Rica. VaccineLedger has partnered with the Inter-American Development Bank (IDB) to set up a network of distributors and pharmacies in Costa Rica on VaccineLedger. The pilots for this have commenced and will lead to country-wide deployments by the end of the year. The plan is to scale this up to other Central American countries in the next couple of years and then to larger countries in Latin America.

This network will allow VaccineLedger to record the journey of every vial of vaccines or a strip/bottle of medicine that goes to the continent.

Benefits of participating in The Trinity Challenge:

"The Trinity Challenge has played an amazing role in the growth of our start-up so far. We have been able to take up two critical and highly impactful projects because of The Trinity Challenge."

COLLABORATIONS

THE TRINITY CHALLENGE

THE GLOBAL PANDEMIC DATA ALLIANCE (GPDA)

The Trinity Challenge was founded to contribute to the global fight against pandemics and COVID-19 and with a particular special emphasis on using the most up to date advances in data science, analytics, and Artificial Intelligence.

The absence of global frameworks that allow for safe, anonymised data sharing has led to a lack of access to data, the absence of interoperability and in some cases absence of credible data. Under the UK government's presidency of the G7, the Science Academies of the Group of Seven (S7) came together to participate in a Round Table discussion in April 2021, co-convened by The Trinity Challenge, and the Royal Society. The aim was to develop a state of data readiness to prepare for the next global health emergency.

The S7 reason that the G7 nations should work together to:

- adopt principle-based governance systems for securing safe sharing and use of data for health emergencies;
- build and implement the operational systems, infrastructures and technologies for a principle-based and privacy-preserving approach to equitable use of data for health emergencies; and to
- foster skills and capabilities at all levels – from the general public and health professionals to policy officials – needed for trusted and accurate use of data.

In September 2021, therefore, The Trinity Challenge became one of the co-founders of the Global Pandemic Data Alliance (GPDA), with a mandate from the government to develop a two-year implementation roadmap to address these challenges. The roadmap will lay out a plan to:

- convene a cross-sector, transdisciplinary community;
- develop a research agenda;
- build the right technology infrastructure, and
- upskill public health practitioners in support of better use of data for health emergencies.

The GPDA works closely with the World Health Organization (WHO), the Wellcome Trust, and other stakeholders, particularly, the current and future Presidencies from the G7 and the G20. The Trinity Challenge has therefore, been working as part of the GPDA, to build an open information infrastructure using emerging novel data and technology platforms, such as the CAIAC, System, and to build cohesive partnerships with others in this space, e.g., X-Prize, MIT Solve. The purpose is to achieve a dynamic repository of knowledge, data and tools, developed during COVID-19 for future access and research.

THE TRINITY CHALLENGE

December 2021 marked the end of the UK's Presidency of the G7, and the commencement of Germany's tenure. Actions agreed at this time included that:

- the GPDA would retain the involvement of UK parties (the Cabinet Office, the Royal Society, and the Department of Health & Social Care) in the GPDA, while also inviting German government representatives to join.
- the GPDA would invite additional members from other G7 and G20 countries – including those from the Global South - being careful not to make the number of members unmanageable.
- the rules and criteria for future engagement would be discussed in 2022.
- the Cabinet Office would reach out to their counterparts in the German government to introduce the GPDA.



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THE
ROYAL
SOCIETY



THE TRINITY CHALLENGE

LEGAL AND ADMINISTRATIVE INFORMATION

Registered and Principal Office: Master's Lodge, Trinity College, Cambridge, CB2 1TQ,
United Kingdom

Company Registration Number: 12756885

Charity Registration Number: 1191909

Trustees: **Dame Sally Davies** (Appointed 20th July 2020)
Sally Spensley (Appointed 27th September 2020)
Steve Davis (Appointed 24th August 2020)
Kathryn Lampard (Appointed 24th August 2020; Resigned
18th November 2021)
Ian Stanley (Appointed 26th January 2022)

Chief Executive Officer: **Hala Audi** (Appointed 1st December 2020; Resigned 31st
July 2021)

Auditors: Moore Kingston Smith LLP
9 Appold Street,, London, EC2A 2AP, United Kingdom

Bankers: Barclays Bank PLC
1 Churchill Place, London, E14 5HP, United Kingdom

THE TRINITY CHALLENGE

TRUSTEES' REPORT (INCORPORATING A STRATEGIC REPORT AND DIRECTORS' REPORT)

For the period July 2020 – December 2021

The Trustees (who are also Directors of The Trinity Challenge for company law purposes), have pleasure in submitting their Annual Report and audited financial statements of the company for the period ended 31 December 2021. This is the first period of accounting for the Charity.

STRUCTURE, GOVERNANCE AND MANAGEMENT

Legal Structure

The Trinity Challenge is registered in England and Wales as a private company limited by guarantee (Company Number: 12756885), and as a charity, registered with the Charity Commission for England and Wales (Charity Registration Number 1191909). The registered address and principal office is: The Master's Lodge, Trinity College, Cambridge, CB2 1TQ, United Kingdom.

The Trinity Challenge was incorporated on 20th July 2020 and is governed by its memorandum and articles of association. Copies of these are available at the Companies House website.

Board of Trustees

The trustees, who are also the directors for the purpose of company law, who served during the period, were:

- Dame Sally Davies (Appointed 20th July 2020)
- Sally Spensley (Appointed 27th September 2020)
- Steve Davis (Appointed 24th August 2020)
- Kathryn Lampard (Appointed 24th August 2020; Resigned 18th November 2021)
- Ian Stanley (Appointed 26th January 2022)

Trustees have been drawn from diverse backgrounds in business and professional life and bring a broad range of experience and skills to Board deliberations. The Trustees have been appointed in accordance with the provisions of the Articles of Association.

All Trustees familiarise themselves with their statutory responsibilities, their role as Board members, the governance framework within The Trinity Challenge, our work, and the risk environment. Ongoing training is arranged as and when a need is identified.

Between December 2020 and July 2021, the Board delegated executive authority to a Chief Executive Officer. Following the departure of the CEO in July 2021, the Chair has assumed an Executive Chair role. All other Trustees have acted in a non-executive capacity throughout the period.

Trustee roles are voluntary in nature and trustees receive no remuneration for their services.

Trustees may claim reimbursement for incidental expenses, although none were claimed during the period.

THE TRINITY CHALLENGE

Grant-Making Process

The Trinity Challenge awards prizes for projects promoting the best ideas that create public goods within the remit of each Challenge. These prizes are awarded as restricted grants, payable over a period of up to three years, depending on the successful implementation of each project. The grant-making process is governed by the Charity's Awards Policy, as reviewed from time to time by the Board. The remit of each Challenge, and the criteria for entry, are agreed and set before each Challenge is launched. Entries are shortlisted by a panel of reviewers, after which an independent Judging Committee makes recommendations to the Board on who should receive prizes. To ensure that the decision remains at arms-length from, and independent of, the Board, the Board restricts itself to either accepting or rejecting the Judging Committee's recommendation. The Board itself does not make any alterations to the Judging Committee's recommendation.

Once the Board has decided, each winner is subjected to The Trinity Challenge Due Diligence process, which is an integral part of our risk management processes. Key staff members for the project or study are vetted against sanctions and other financial risk lists. The policies of the lead organisation are checked against our safeguarding and financial control principles to ensure they are of adequate standard. The Trinity Challenge then weighs the risk of granting the prize finds to the lead organisation, and only when the Board is comfortable that risks are within its appetite, or that sufficient mitigations have been put in place to achieve this, is a grant confirmed.

Fundraising Activities

The Trinity Challenge's fundraising activities have been limited to institutional donors, corporations and trusts. We do not engage in fundraising from members of the public.

PUBLIC BENEFIT STATEMENT

Charity trustees have a duty to develop strategic plans to ensure that we provide public benefit and achieve our objectives as set out in our governing document. These objectives fall under the purposes defined by the Charities Act 2011. We have referred to the Charity Commission's general guidance on public benefit when reviewing our aims and objectives and in planning our activities. In particular, the trustees consider how planned activities will contribute to the aims and objectives they have set.

STRATEGIC REVIEW

Achievements in the Period

The Trinity Challenge successfully launched its first public Challenge, raising £5.7m of prize funds to address the urgent issue of responding to the next pandemic. Beyond the public challenge, we brought together a community of like-minded individuals and organisations, working together collaboratively to bring forward new solutions and new ways of thinking. More information on our winners' projects is included in the first half of this document.

Operationally, The Trinity Challenge successfully incorporated, and we obtained the funding we needed to underpin our operations to support the winners throughout the lifetime of their projects.

THE TRINITY CHALLENGE

Future Activities

The Trinity Challenge has found it difficult to raise funds for a second public Challenge. Whilst fundraising efforts continue for this, in the meantime The Trinity Challenge is focussing efforts on supporting the current set of winners, ensuring they receive a high level of support to maximise the impact of their projects.

Operationally, until further funds are obtained, The Trinity Challenge will be minimising indirect expenditure to ensure the Trinity Challenge has sufficient reserves to cover the oversight obligations for the length of our winners' projects.

The Trinity Challenge and the Trustees would like to thank all our donors, whether they gave funds, expertise, or both. Without them, TTC would not have been able to achieve these successes.

FINANCIAL REVIEW

The financial statements have been prepared in accordance with the accounting policies set out in notes to the accounts and comply with the charity's governing document, the Charities Act 2011 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland.

The financial outcome for the period is set out in the Statement of Financial Activities. There are no comparative figures included as this is the first set of statutory financial statements for the organisation.

Income

Total income during the period was £7.7m, comprised primarily of unrestricted donations and restricted grants from institutional or corporate donors. £0.5m of donations were gifts in kind.

Expenditure

Total expenditure during the period was £3.7m, of which £0.5m consisted of the use of gift in kind donations. £3.2m was spent on operating the public Prize Challenge, of which £2.6m was disbursed as grant payments for prize-winning projects. The Trinity Challenge work on Collaborations cost a further £0.3m. The Trinity Challenge spent £0.1m on fundraising efforts.

Reserves

Total reserves at the end of the period stood at £4.1m. £1.9m of this was made up of unspent restricted grants, which are to be used for future tranches of grant payments to prize winners. The Board has created a designated reserve for an additional £1.2m, to cover remaining grant payment tranches.

The Board also designated a second reserve of up to £0.8m, to provide innovation support to the prize-winning projects. A partner is currently being contracted to provide this.

The remaining £0.2m of reserves is unrestricted in nature. The Board believes this is adequate to cover the operational needs of the charity, as it monitors the use of its prize grant funds over the life of the prize winners' projects.

Investments

THE TRINITY CHALLENGE

The Trinity Challenge held no investments during the period.

PRINCIPAL RISKS AND UNCERTAINTIES

The major risks to which The Trinity Challenge is exposed are identified and reviewed by the Trustees as part of their normal risk review process.

Major risks include:

- 1) Insufficient funds to continue activities: Like all organisations, The Trinity Challenge is dependent on ongoing donor funding to achieve the organisational objectives. Indeed, the charity has found it difficult to secure funding for a second public challenge. However, The Trinity Challenge has mitigated this risk by minimising operational expenditure, ensuring the prize awards and other direct costs are covered by funds already received, and projecting forwards to ensure expected future costs are within current reserve levels.
- 2) Safeguarding or ethical issue: There is a risk that The Trinity Challenge funded project teams do not conduct themselves or carry out their project in an appropriate way. This could result in people being put at risk of harm or that ethics are not appropriately applied. As well as the inherent harm, the TTC name, or the names of TTC donors could be brought into disrepute. To mitigate this risk, The Trinity Challenge performed due diligence on prospective grantees and monitors projects on an ongoing basis to highlight potential risks and so that any allegations of incidents can be reported and investigated.
- 3) The Trinity Challenge fails to have the desired impact: There is a risk that our prize winner projects do not achieve their full potential. To this end, The Trinity Challenge is investing in bespoke innovation support for each project, over the life of their grants, so that TTC can help maximise this impact.

STAFF

The Trinity Challenge does not have any employees currently. TTC, however, recognises the commitment and quality of the staff work, and that of others TTC worked with, during the period. The major achievements are due to the dedication and belief of all these people.

TTC is an equal opportunities employer. TTC supports the principles of equal opportunities and diversity in employment and TTC is fully compliant with the provisions of the Equality Act 2010.

POLITICAL DONATIONS

The Trinity Challenge did not make any political donations during the period.

THE TRINITY CHALLENGE

POST BALANCE SHEET EVENTS

In the first quarter of 2022, the Trinity Challenge was unsuccessful in obtaining additional funding for a second public challenge. Whilst fundraising activities are ongoing, the Board decided that it was prudent to ensure the charity's operations run to a minimal state, whilst ensuring that the fiduciary obligations of the Trustees was maintained.

It is the Board's view that the reserves of the Trinity Challenge are such that it will continue to meet its financial obligations to pay prize winners' grants in full, along with all other expenditure commitments, throughout the life cycle of prize winners' grants, up to 2025. As such, this report and the accompanying accounts have been created on a going concern basis.

SERIOUS INCIDENTS

The Trinity Challenge was not affected by any Serious Incidents, either at the Charity or at TTC prize winners' projects, during the period.

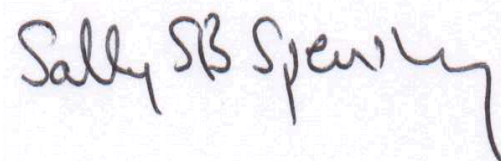
AUDITORS

Moore Kingston Smith LLP were appointed as auditors on 17th December 2021 and have noted their willingness to continue in office.

The Strategic Report and the Trustees Report are approved by order of the Board.



Dame Sally C. Davies
Executive Chair



Sally Spensley
Trustee

15 July 2022

THE TRINITY CHALLENGE

STATEMENT OF TRUSTEES' RESPONSIBILITIES: IN RESPECT OF THE STRATEGIC REPORT, THE TRUSTEES' ANNUAL REPORT AND FINANCIAL STATEMENTS.

The trustees are responsible for preparing the Trustees' Annual Report and the financial statements in accordance with applicable law and regulations.

Company and charity law requires the trustees to prepare financial statements for each financial year in accordance with UK Accounting Standards and applicable law (UK Generally Accepted Accounting Practice), including FRS 102, The Financial Reporting Standard applicable in the UK and Republic of Ireland.

Under company law the trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the charitable company and of the incoming resources and application of resources for that period. In preparing these financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- assess the charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the charitable company or to cease operations or have no realistic alternative but to do so.

The trustees are responsible for keeping adequate and proper accounting records that are sufficient to show and explain the charitable company's transactions and disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the charitable company and to prevent and detect fraud and other irregularities. The trustees are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation in the UK governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

In the case of each of the persons who were directors of the company at the date of approval of this directors' report that they confirm, that, so far as they are aware, there is no relevant audit information of which the company's auditors are unaware; and each director has taken all the steps that they ought to have taken as a director to make themselves aware of any relevant audit information and to establish that the company's auditors are aware of that information.

INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE TRINITY CHALLENGE

Opinion

We have audited the financial statements of The Trinity Challenge ('the company') for the period ended 31 December 2021 which comprise the Statement of Financial Activities, the Summary Income and Expenditure Account, the Balance Sheet, the Cash Flow Statement and notes to the financial statements, including significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including FRS 102 'The Financial Reporting Standard Applicable in the UK and Republic of Ireland' (United Kingdom Generally Accepted Accounting Practice).

In our opinion the financial statements:

- give a true and fair view of the state of the charitable company's affairs as at 31 December 2021 and of its incoming resources and application of resources, including its income and expenditure, for the period then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the audit of the financial statements section of our report. We are independent of the charitable company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the charitable company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the trustees with respect to going concern are described in the relevant sections of this report.

Other information

The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. The trustees are responsible for the other information contained within the annual report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

THE TRINITY CHALLENGE

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the trustees' annual report and strategic report for the financial period for which the financial statements are prepared is consistent with the financial statements; and
- the trustees' annual report and strategic report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the trustees' annual report.

We have nothing to report in respect of the following matters where the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit

Responsibilities of trustees

As explained more fully in the trustees' responsibilities statement set out on page 36, the trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the charitable company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the charitable company or to cease operations, or have no realistic alternative but to do so.

THE TRINITY CHALLENGE

Auditor's Responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs (UK) we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purposes of expressing an opinion on the effectiveness of the charitable company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the trustees.
- Conclude on the appropriateness of the trustees' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the charitable company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the charitable company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

THE TRINITY CHALLENGE

The objectives of our audit in respect of fraud, are; to identify and assess the risks of material misstatement of the financial statements due to fraud; to obtain sufficient appropriate audit evidence regarding the assessed risks of material misstatement due to fraud, through designing and implementing appropriate responses to those assessed risks; and to respond appropriately to instances of fraud or suspected fraud identified during the audit. However, the primary responsibility for the prevention and detection of fraud rests with both management and those charged with governance of the charitable company.

Our approach was as follows:

- We obtained an understanding of the legal and regulatory requirements applicable to the charitable company and considered that the most significant are the Companies Act 2006, the Charities Act 2011, the Charity SORP, and UK financial reporting standards as issued by the Financial Reporting Council
- We obtained an understanding of how the charitable company complies with these requirements by discussions with management and those charged with governance.
- We assessed the risk of material misstatement of the financial statements, including the risk of material misstatement due to fraud and how it might occur, by holding discussions with management and those charged with governance.
- We inquired of management and those charged with governance as to any known instances of non-compliance or suspected non-compliance with laws and regulations.
- Based on this understanding, we designed specific appropriate audit procedures to identify instances of non-compliance with laws and regulations. This included making enquiries of management and those charged with governance and obtaining additional corroborative evidence as required.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Use of our report

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to any party other than the charitable company and charitable company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Moore Kingston Smith LLP

Luke Holt (Senior Statutory Auditor)

for and on behalf of Moore Kingston Smith LLP, Statutory Auditor

18 July 2022

9 Appold Street
London
EC2A 2AP

FINANCIAL STATEMENTS

Statement of Financial Activities

(including income and expenditure account)

For the period 20 July 2020 to 31 December 2021

Period to 31 December 2021

	Notes	Unrestricted Funds	Designated Funds £	Restricted Funds £	Total Funds £
Income from:					
Donations	3	2,203,876	-	-	2,203,876
Charitable Activities	4	464,764	-	5,048,976	5,513,740
Interest		296	-	-	296
Total Income		<u>2,668,936</u>	<u>-</u>	<u>5,048,976</u>	<u>7,717,912</u>
Expenditure on:					
Raising Funds	5, 6	19,454	-	118,552	138,006
Charitable Activities	5, 6	503,826	-	3,025,447	3,529,273
Total Expenditure		<u>523,280</u>	<u>-</u>	<u>3,143,999</u>	<u>3,667,279</u>
Net Income for the Period		<u>2,145,656</u>	<u>-</u>	<u>1,904,977</u>	<u>4,050,633</u>
Net Movement in Funds					
Total Fund Brought Forward		-	-	-	-
Net Income		2,145,656	-	1,904,977	4,050,633
Movement in funds	9	(1,973,440)	1,979,378	(5,938)	-
Total Funds Carried Forward		<u>172,216</u>	<u>1,979,378</u>	<u>1,899,039</u>	<u>4,050,633</u>

The statement of financial activities includes all gains and losses recognised in the period.

THE TRINITY CHALLENGE

Balance Sheet

As at 31 December 2021

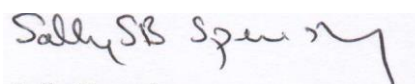
	Notes	31 December 2021 £
Fixed Assets	7	5,938
Current Assets		
Cash at bank and in hand		4,472,969
Creditors: amounts falling due within one year	8	(428,274)
Net assets		<u>4,050,633</u>
The funds of the charity:		
Unrestricted funds	10	172,216
Designated Funds		1,979,378
Restricted income funds		<u>1,899,039</u>
Total Funds		<u>4,050,633</u>

The accompanying notes form part of the financial statements.

On behalf of the board



Dame Sally C. Davies



Sally Spensley
Trustee

15 July 2022

THE TRINITY CHALLENGE

Cash Flow Statement

For the period 20 July 2020 to 31 December 2021

	Notes	Period to 31 December 2021 £
Cash flows from operating activities		
Net cash provided by operating activities	11	<u>4,480,716</u>
Cash flows from investing activities		
Interest		296
Purchase of fixed assets		(9,276)
Disposal of fixed assets		1,233
		<u>(7,747)</u>
Change in cash and cash equivalents in the reporting period		<u>4,472,969</u>
Cash and cash equivalents at the beginning of the reporting period		-
Cash and cash equivalents at the end of the reporting period		<u>4,472,969</u>

Notes to the Financial Statements

1. Accounting Policies

1.1. Charity information

The Trinity Challenge is a private company limited by guarantee incorporated in England and Wales. It was registered with the Charity Commission for England & Wales on 20 July 2020 (Charity Registration Number 1191909). The registered office is Master's Lodge, Trinity College, Cambridge CB2 1TQ.

1.2. Accounting conventions

The accounts have been prepared in accordance with "Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102)" (published October 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

The accounts are prepared for the period 20 July 2020 to 31 December 2021. This first accounting period was extended on 6 July 2021 from 31 July 2021 to 31 December 2021.

The Trinity Challenge meets the definition of a public benefit entity under FRS 102.

The financial statements have been prepared in sterling which is the functional currency of the charity.

The accounts have been prepared under the historical cost convention.

The principal accounting policies adopted are set out below.

1.3. Post balance sheet events and going concern

After the year end a decision was taken not to initiate further prize challenges due to limited new funds. However, at the time of approving the financial statements the trustees have a reasonable expectation that the charity has adequate resources to continue in operational existence for the existing prize challenge for the next three years. Thus, the trustees continue to adopt the going concern basis of accounting in preparing the financial statements.

1.4. Charitable funds

Following the requirements of the Charities SORP (FRS 102) all the funds of The Trinity Challenge have been analysed between the different types of fund.

Unrestricted funds are available for use at the discretion of the trustees in furtherance of their charitable objectives unless the funds have been designated for other purposes.

Designated funds comprise unrestricted funds which have been voluntarily set aside at the discretion of the trustees for specific purposes. The purpose and use of the current designated fund is for payment of future prize money and innovation support for prize winners.

Restricted funds are subject to specific conditions by donors as to how they may be used. One of the restricted funds is for overall management of The Trinity Challenge. The restriction on the remainder of the restricted funds is that at least 90% of funds will be spent on prize money.

1.5. Grant income

Income is recognised when the charity is legally entitled to it and it is probable that the income will be received.

THE TRINITY CHALLENGE

1.6. Expenditure

All expenditure is recognised on an accruals basis.

Expenditure on raising funds is that incurred in seeking grant income or donations.

Expenditure on charitable activities is any that relates directly to fulfilling the charitable objectives of The Trinity Challenge.

Support costs such as general and financial management, governance and IT are allocated to fund raising and charitable activities in proportion to the direct expenditure on those activities.

Value added tax is not recoverable by the charity, and as such is included in the relevant costs in the Statement of financial activities.

1.7. Gifts in kind

The Trinity Challenge received significant gifts in kind which have been valued in the accounts at the value of the gift to the charity. These gifts in kind were for legal, marketing, consulting & technology services.

1.8. Tangible assets

Computers are depreciated on a straight-line basis over 3 years, for assets over £500.

2. Critical accounting estimates and judgements

In the application of The Trinity Challenge's accounting policies, which are described in Note 1, the trustees are required to make judgements, estimates and assumptions about the value of income and expenditure.

The trustees do not consider there are any critical judgements or sources of estimation uncertainty requiring disclosure with the exception of gifts in kind. In line with the guidance in Charities SORP (FRS 102) all gifts in kind have been valued at the value of the gift to the charity.

THE TRINITY CHALLENGE

3. Income from donations

Period to 31 December 2021

	Unrestricted Funds £	Restricted Funds £	Total Funds £
			-
Donations	1,680,596	-	1,680,596
Gift in kind	523,280	-	523,280
Total	<u>2,203,876</u>	<u>-</u>	<u>2,203,876</u>

4. Income from charitable activities

Period to 31 December 2021

	Unrestricted Funds £	Restricted Funds £	Total Funds £
Grant Income	<u>464,764</u>	<u>5,048,976</u>	<u>5,513,740</u>

THE TRINITY CHALLENGE

5. Expenditure

	Period to 31 December 2021				
	Unrestricted £	Restricted £	Total Costs £	Support Costs Allocation £	Total Costs £
Charitable Activities					
The Prize Challenge	184,414	2,807,683	2,992,096	197,989	3,190,085
Collaborations	184,414	46,197	230,610	108,578	339,188
	<u>368,827</u>	<u>2,853,879</u>	<u>3,222,706</u>	<u>306,567</u>	<u>3,529,273</u>
Allocated support costs	134,999	171,568	306,567		
Charitable activities including support costs	<u>503,826</u>	<u>3,025,447</u>	<u>3,529,273</u>		
Raising Funds	0	93,829	93,829	44,177	138,006
Allocated support costs	19,454	24,723	44,177		
Raising funds including support costs	<u>19,454</u>	<u>118,552</u>	<u>138,006</u>		
Total support costs	<u>154,453</u>	<u>196,291</u>		<u>350,744</u>	
Total expenditure	<u>523,280</u>	<u>3,143,999</u>			<u>3,667,279</u>

The Prize Challenge costs of £3,190,085 include £2,571 583 paid in prizes to the challenge winners

THE TRINITY CHALLENGE

6. Analysis of support costs

Period to 31 December 2021

	£
Governance	133,864
General Management	110,724
Finance & IT	106,156
Total support costs	<u>350,744</u>

7. Tangible fixed assets

	31 December 2021	
	Computers	Total
	£	£
Cost at 20 July 2020	-	-
Additions	9,276	9,276
Disposals	(1,233)	(1,233)
Depreciation	(2,105)	(2,105)
As at 31 December 2021	<u>5,938</u>	<u>5,938</u>

8. Creditors: Amounts falling due within one year

	31 December 2021
	£
Prizes	384,622
Trade creditors	26,811
Accruals	16,841
Total Creditors	<u>428,274</u>

THE TRINITY CHALLENGE

9. Analysis of movement between funds

	Unrestricted £	Designated £	Restricted £	Total £
Total Fund Brought Forward at 20 July 2020	-	-	-	-
Net Income	2,145,656	-	1,904,977	4,050,633
Fixed asset transfer	5,938	-	(5,938)	-
Transfer to designated funds	(1,979,378)	1,979,378	-	-
Total Funds Carried Forward at 31 December 2021	<u>172,216</u>	<u>1,979,378</u>	<u>1,899,039</u>	<u>4,050,633</u>

£1,979,378 of unrestricted funds have been designated for future expenditure on awarded prizes and innovation support.

10. Analysis of net assets between funds

	As at 31 December 2021			
	Unrestricted £	Designated £	Restricted £	Total £
Fixed assets	5,938	-	-	5,938
Cash at bank and in hand	166,278	1,979,378	2,327,313	4,472,969
Creditors: amounts falling due within one year	-	-	(428,274)	(428,274)
Total funds at 31 December 2021	<u>172,216</u>	<u>1,979,378</u>	<u>1,899,039</u>	<u>4,050,633</u>

11. Reconciliation of net income to net cash flow from operating activities

	£
Net income	4,050,633
Adjustments for:	
Increase in creditors	428,274
Interest	(296)
Depreciation	2,105
Net cash provided by operating activities	<u>4,480,716</u>

THE TRINITY CHALLENGE

12. Financial commitments

Of the prize fund of £5.7million, a total of £2,571,583 has been paid to winners in 2021. The table below shows the charity's commitment to prize winners to provide further prize funds subject to them fulfilling their contractual obligations.

	£
Within one year	1,781,849
In years two to five	1,346,568
Total	<u>3,128,417</u>

13. Auditor's remuneration

Period to 31 December 2021

	£
Audit of financial statements	<u>10,740</u>

14. Employee costs

Period to 31 December 2021

	£
Salary	30,000
Employer's National Insurance	-
Pension Contributions	775
Total employment costs	<u>30,775</u>

The average headcount during the period was 0.4.

No employee received more than £60,000 in remuneration during the period.

15. Trustees

None of the trustees received any remuneration or expenses during the period.

16. Taxation

The Trinity Challenge is a registered charity and as such is not liable in the United Kingdom to income tax or corporation tax on charitable activities.

17. Post Balance Sheet Events

In the first quarter of 2022, the Trinity Challenge was unsuccessful in obtaining additional funding for a second public challenge. Whilst fundraising activities are ongoing, the Board decided that it was prudent to ensure the charity's operations run to a minimal state, whilst ensuring that the fiduciary obligations of the Trustees was maintained.

It is the Board's view that the reserves of the Trinity Challenge are such that it will continue to meet its financial obligations to pay prize winners' grants in full, along with all other expenditure commitments, throughout the life cycle of prize winners' grants, up to 2025. As such, these accounts and the accompanying report have been created on a going concern basis.