The SatSure Newsletter

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FOREWORD

As we are going through some unprecedented times for humanity, with COVID-19 having brought the entire world to a standstill. This issue of TSNL tries to focus on topics that are relevant to the impact on the Agriculture sector, the resiliency that is needed globally to recover, and how this one event can accelerate innovation in the agriculture markets and finance domain. I would like to thank the contributing authors for giving us their time to express their views amidst these chaotic times within their respective organizations.

Our first article is an interview with Mr Shubhang Shankar. He is the Managing Director of Syngenta Ventures - the corporate venture capital (VC) team of Syngenta and one of the first VC teams dedicated to agriculture. He shares his thoughts on the COVID-19 impact on the agriculture sector and more broadly, AgTech startups and their investment plans. With portfolio companies such as Ninjacart, Planet, and Precision Hawk, to name a few, he brings in a unique global perspective of the AgTech ecosystem.

The second article is by Mr Dhruva Rajan, Founder and CEO of Geospoc, an Indo-US spatial analytics company. They have scaled to more than 60 people with clients across the continents without any VC funding. He shares his journey as an entrepreneur and how he built Geospoc leaving his comfortable job with ESRI in the U.K.

Our third article is an interview with Mr Albert Boogaard, Head of Innovation at Rabo Foundation, who has been working with financial services and AgTech firms in the developing world for the past decade. He shares his rich experience in managing innovation in Agriculture Finance and the common pitfalls that firms face. I believe his insights on alternate data for financing smallholder farmers will be beneficial for FinTech firms who are looking to use the COVID-19 impact for fueling growth in new and unexplored markets.

And the last article is by Sarvesh Kurane, my colleague, who handles the Value Engineering Department at SatSure. He talks about the need for Open Innovation in AgTech and how SatSure is planning to contribute to the ecosystem based on the idea of collaborations.

Challenging times require us to think differently and act together. The road to recovery from here would be tough and uneven. However, we believe that technology's role will further increase in creating a more inclusive world as people everywhere come to terms with how fragile human life is in front of forces of nature. With these words, I wish everyone a good reading of this issue!

Prateep Basu

Prateep Basu
Founder, CEO
SatSure

A Dialogue on the AgTech Ecosystem

Shubhang Shankar, Managing Director,
Syngenta Ventures

Q & A

1

Can you please share with our readers about Syngenta Ventures work with AgTech companies and its investment thesis?

Ans. As a Corporate Venture Capital unit, we believe that our association with a company goes far beyond contributing capital. We try to open up our organization and in-house expertise, our relationships with farmers and the overall agriculture value chain so that our portfolio companies can test hypotheses, gain real-world feedback on their products and refine their offerings at a faster pace than they would be able to do otherwise.

Our investment thesis is quite simple – we are interested in companies that solve big problems for farmers globally – either through technological innovation or business model innovation. Syngenta was one of the first Ag companies to setup a corporate VC unit and our management remains committed to supporting external innovation to solve challenges for the food and agriculture system

2

At Syngenta Ventures, you have a diversified portfolio of companies – from Earth observation to biotech, precision Ag, and e-commerce. Which among these areas excite you the most moving forward?

Ans. I think the thesis behind all of these sectors remains intact, given the lead times involved in the injection of technology in farming, the impact of many of these still lays ahead in the future.

I would say that there are some emerging theses that excite me for the coming decade – the first would be robotics in response to the dramatic declines in farm labour availability globally, the second would be Fintech in agriculture, where technology should allow far sharper individual farm and farmer level credit risk assessment and lending/insurance offers that plug one of the largest financing gaps in the global economic system.

3 The AgTech industry funding hasn't been evenly spread geographically over the past decade. What factors in your opinion could have contributed to such 'bias' and as a follow-up to this question, how do you think VCs and entrepreneurs in the EU, Middle-east & Africa and Asian regions respond to such market behaviour?

Ans. More than any bias, I think AgTech has followed the strength of the general tech and venture capital landscape. The US is the clear leader in R&D spend, in technological development and has large scale capitalized agriculture which has historically been open to technological innovation to drive yields and returns. In particular, most technologies have not been developed for 'Ag', they have been developed for other sectors and have then been transplanted into agriculture. This is not a surprise – the famous Haber process to develop cheap fertilizers was initially developed to provide cheap ammonia for large scale development of explosives!

I think over the past few years, there is a clear 'democratization' of technology and VC funding as far as agriculture goes. The share of VC funds that are going into US AgTech declines every year. I don't think funds or entrepreneurs have to do anything beyond what any startup or VC aims to typically do – attack big problems in big markets. Entrepreneurs need to focus on building a business – if you've got the customer traction and have a clear value

proposition that is resonating with farmers, the optimist in me says the funding will come. What I would advise is to perhaps learn from the experience that AgTech startups have made in other geographies – don't chase valuation bubbles, don't dilute focus and try and get on board investors that will help you in the long run

4

While there has been a lot of buzz around technology in agriculture, visibly not all have been successful. In your opinion, which tech trends have provided real value to agribusinesses and farmers and which ones do in your opinion have failed?

Ans. Failure is the unavoidable twin of innovation, so if many technologies or startups have failed in AgTech, that is in keeping with the experience of almost every other sector. I think what we have learned from a decade of observing AgTech innovation is that technology by itself can never be a successful business or an investible proposition. There is a famous survey of startup founders on the reasons for

failure and the number 1 cause mentioned is the lack of a market.

Technology does what it is supposed to – the question is can it do it at an attractive enough cost, in real-world conditions, for a big enough problem that incentivizes customers to pay. I think the experience in Ag over the last decade conforms to those findings – let's take for example imagery, especially drones. There was a belief 4 years ago that drones would be omnipresent over every farm in the world and they would drive step changes in productivity and profitability. However, all those projections have had to be drastically revised downwards as it became clear that the drone deluge wasn't happening. What businesses learned is that selling expensive imagery to farmers in a commodity down cycle was much harder than they envisaged. More importantly, translating imagery into an ROI for farmers was tedious and tenuous.

I think it's clear that any technology that doesn't yield a clear P&L impact for a farmer will find it hard to scale and succeed. And this is something that all AgTech companies are struggling with – leave out e-commerce and there are almost no companies that have meaningful revenues – AgTech so far has been technology-led, to succeed it needs to become market-driven

While evaluating AgTech companies, most investors claim to face challenges in testing and validating the business model. Are there any best practices in doing so that you could share from your experience at Syngenta Ventures?

Ans. I think it's hard to share best practices in an industry where the base case assumption is that 70% of your portfolio will not return the money invested. In my 3 years of doing Venture Capital for Syngenta, I have come to believe that a successful investment combines a great team, a great product, and a big market. Individual investing styles are biased towards one of these vertices – some investors invest in the 'jockey' and not the 'horse', some will invest in the tech and some will invest in the largest available market.

In our team, we have a good mix of all these investment styles which I think keeps us all honest and forces us to confront our blind spots. My own personal view is that technology can remain underutilized for decades if the underlying market conditions are not right – so I tend to really focus on customer traction, customer feedback. That's certainly not the 'house style' as far as Syngenta Ventures goes, so if you ask my colleagues, they will have a different answer to this question

6

What are some of the near term and long term impacts which you expect on the AgTech industry and the larger Agriculture sector due to the COVID-19 pandemic?

Ans. In the near-term, the restrictions related to social distancing have forced teams to work from home and the impact varies by type of company. However the impact varies by type of startup for example in the Biotech sector, where lab operations are critical, companies have had to improvise. So things will be a bit difficult in certain segments of the AgTech industry and new initiatives like shifts and distribution of work could become the new normal, like in corporate organizations.

There are many startups in major markets that have been prioritized growth over profitability – these startups could really suffer if the business environment deteriorates for the coming months, which would put pressure on their cash reserves or necessitate cash injections in an environment where funding is not easily available. Very high cash burn AgTech companies, especially in the U.S., might take a heavy hit and quite a few startups can fold as well. But perhaps this could also be an opportunity for AgTechs to pivot to being more market-driven than being technology-driven. Such a shift could finally help us see more democratization and solving big questions for big markets.

It is, however, difficult to answer for the Agriculture sector as a whole, since the demand side for the food sector is quite inelastic.. The bigger worry is on the supply side, in case the global commodity trade gets impacted. Even more critically, the availability of labour would be a major challenge in the near term. Seasonal and migrant labour availability is being impacted due to travel restrictions and this can lead to a lot of losses on the produce side. Farmers in the US/ EU are still going out and doing planting as far as row crops go, but the major worry would be on the harvest side for fruits and vegetables especially.

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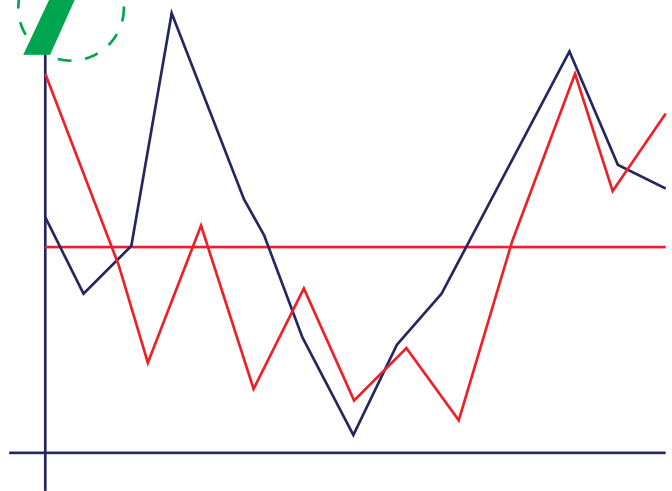
What would be the expected response of the VC industry to such impact on the AgriTech industry? Do you see a geographical context around the impact?

The impact on funding and financing could be quite significant for AgTech. Like any period of uncertainty, investors could go into standby mode. Two kinds of startups that could be impacted strongly are early stage startups looking for investments (due to events getting cancelled. Major avenues for investors and startups to get to know each other) and large scale startups ($100 million+) as it becomes difficult for them to raise further capital in the current state. People are already talking about V, U shaped depression or a crash, hence the impact of COVID-19 could be drastic in a systemic sense. Right now, the prognostications from experts are mixed –

some expect an epochal crash while others expect a quick recovery.

In general, I think AgTech startups will be forced to pivot away from being 'technology-driven' to 'business problem' driven and funds will follow that trajectory. After every crisis, new opportunities pop up, e.g.,

the entire Fintech industry is a prime example, which arose after the global economic recession from 2008-11. In that period, lending became restricted so we had payday lenders come up, which provided credit during those times when getting access to credit from traditional large banks was difficult.

I believe e-commerce in agriculture could see an upside now since the Ag trade is still very much paper and human dependent.

As returns in developed markets start drying up, new markets will be a target. Startup valuations in the U.S. have been incredibly high for the past 5 years, and this is driving eastward expansion of VCs - Indian AgTech firms could be potential beneficiaries. The heuristics become very simple - find huge

markets and see who is doing what is interesting. VCs have a natural tendency to keep looking for new markets and new opportunities, such as those coming up in Africa - which is by far the most nascent AgTech and VC market. It might take a bit more time for it to grow and become attractive like India or China. But I do see startups coming there, maybe driven by Kenya and Rwanda, where the ecosystem is very mature currently. It might be sometime before one has AgTech focused VC funds in Africa since there is not much depth yet in that market and hence multi-sector VCs are the norm. Also, the entrepreneurial class in Africa is pretty restricted, hence we see many companies being run by expats from the US, EU. Which is why from a VC perspective, Africa will be more about business model innovation than tech innovation.

So, there will definitely be a geographical impact for startups, with large Agri markets like India, China, Indonesia which were not attracting funding in the early 2010s, could see more investments from global VC firms. So as AgTech expands into newer markets, I believe capital will follow.

Building and Scaling a Bootstrapped GeoSpatial Startup in India
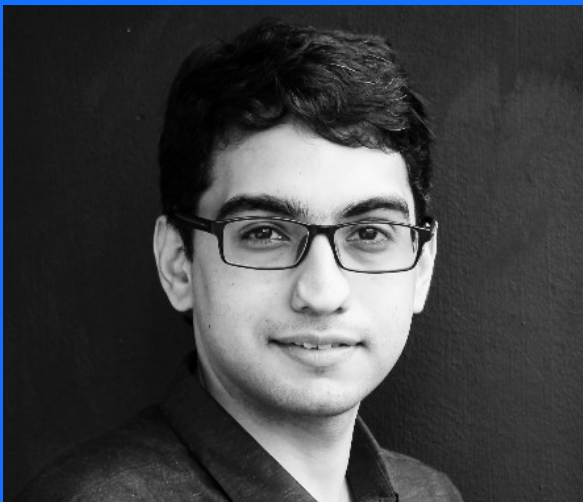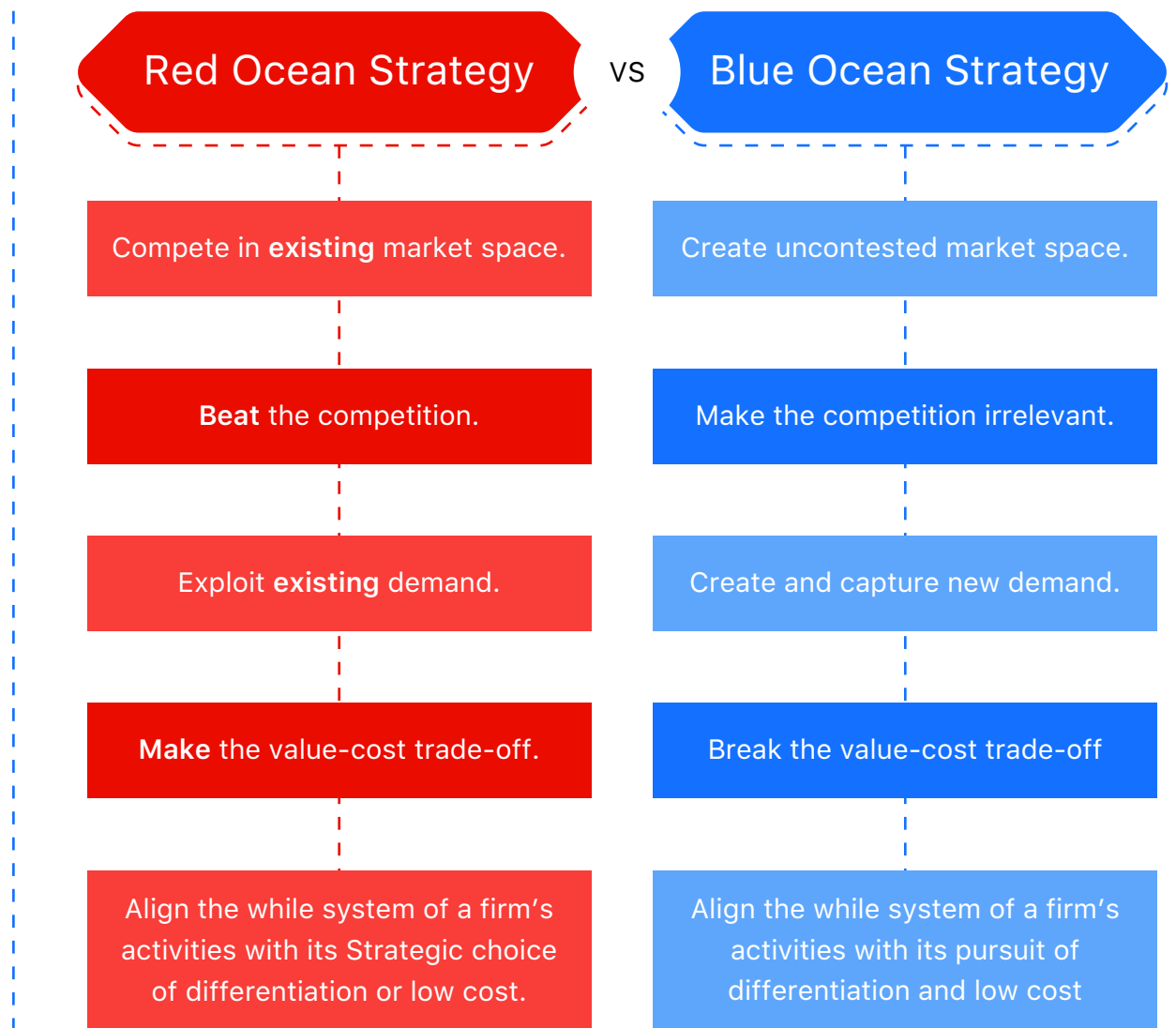

Dhruva Rajan, CEO
at GeoSpoc

Back in 2012 whilst I was still at EsriUK, the Govt. of India released its "Government of India Planning Commission Twelfth Five Year Plan 2012–17". The interesting thing about this plan was that there was a separate section dedicated to GIS and the creation of a national spatial data infrastructure. This was a surprise (a pleasant one!) because I never expected the Indian government to come up with a plan to include GIS at such scale. Over the next few years, I watched as the government made significant investments in making strides toward GIS being used centrally by the government and its machinery.

This prompted my move to India in 2015 to try and use this momentum to build and scale a geospatial company based in India. It was a bold move, but I felt that was timed right given the focus on GIS at the senior government levels. At the time, I remember thinking that it was quite an exciting time and potentially 'pathbreaking' opportunities would present themselves (100 Smart Cities, Digital India etc. were all part of this thinking)

Fast forward to 2017, and despite a lot of discussions and meetings, we had done nothing with the Government in India.
I personally had met several IAS officers, planning departments, even GIS cells at various government entities across India. **The overwhelming feeling I was left with, was that of disappointment and dejection because while the government objective around a unified Spatial Data Infrastructure was a great one, the actual implementation on the ground was not happening. Bureaucracy was continuing its old habits of moving quite lethargically, payment timelines were long and the usual difficulties in 'navigating' a deal still existed.**

All of this then meant quite a challenge. Given that the largest market segment of GIS adoption was the government (and related entities) and we had just chosen not to go after that market – we had to do something radical to just survive! I vividly remember conversations at GIS conferences, where people would look at me quizzically when I mentioned the things that we don't do:

- Surveying
- Digitization
- Government Work

Red Ocean Strategy	vs	Blue Ocean Strategy
Compete in **existing** market space.		Create uncontested market space.
Beat the competition.		Make the competition irrelevant.
Exploit **existing** demand.		Create and capture new demand.
Make the value-cost trade-off.		Break the value-cost trade-off
Align the while system of a firm's activities with its Strategic choice of differentiation or low cost.		Align the while system of a firm's activities with its pursuit of differentiation and low cost

Source: https://www.blueoceanstrategy.com/what-is-blue-ocean-strategy/

So the next question I got was – "then what is it that you do? Are you able to survive?"

I can emphatically say that the answer is Yes! We have been able to not just survive, but thrive! **By focusing on generating value for our commercial markets customers, we've been able to enable some of the largest enterprises in India to utilize geospatial in ways they had never imagined before. This is often referred to as the 'Blue Ocean Strategy' – which also an amazing book to read for all business leaders and entrepreneurs.**

The other interesting aspect of our success is that all our growth has come from the customer (meaning we are totally bootstrapped). This has multiple benefits. It means that we are totally focused on solving their problems (as opposed to bending to the will of investors), whilst also being cautious about where we

spend money. This twin approach has meant that we are not only growing but also generating profit.

One other key factor in the startup ecosystem in India that helped us was collaboration. **Being able to work with other startups in adjacent technologies/ecosystems also helped us to grow and scale. Our wonderful partnership with SatSure is just one example of the positive 'sum of the parts' that the collaboration delivered to our customers.**

As an ending note, in today's COVID-19 situation, I think everyone in the world has seen the power of GeoSpatial. Maps are everywhere you look (newspapers, TV channels, social media etc.) – this is an exciting time to be in the mapping industry and my hope is that this positive impact that Geospatial has had on combating a pandemic is remembered by everyone and applied in day to day life post our recovery. For our part, we're actively helping the local and federal government in combating the virus spread through mapping and tracking services.

Geospatial is here to stay and will only continue to grow in implementation.
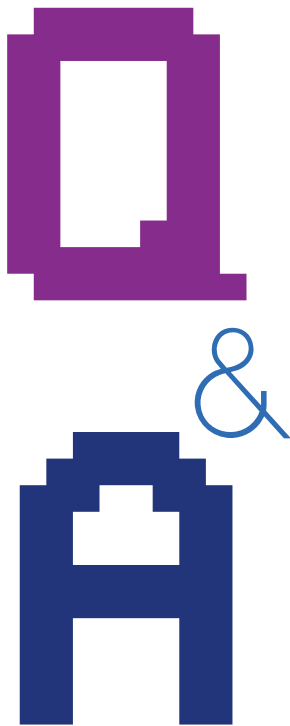
Evolving the Alternate Data for Agriculture Lending

Albert Boogaard, Head of Innovation at Rabo Foundation

1.

What are the major factors driving the global enthusiasm currently about lending to smallholder farmers (Alternative Data Perspective)?

The major driver is that there is a need for improvement in the way we finance farms, as only **15-20% of the actual need for finance** is satisfied currently. There can be different use cases around this need that are driving such interest globally, like increasing the efficiency of the value chain, reducing the losses at the farm or increasing its productivity for which finance is an essential component. **The stagnation in agriculture finance is due to high transaction and operational costs, and then there exist credit risk costs which further make it difficult to scale up.** Alternate datasets have a big role to play in addressing all of these. And there are external factors adding to the enthusiasm in this space such as advances in Artificial Intelligence and cloud computing, which makes data crunching easier. However, they are also going through the peak of the 'Hype cycle' currently, with the expectations being more than actual deliveries. Many companies end up playing by the buzzwords and not understanding the user needs and interaction of technology with users. Fortunately, many of them do which leads to important advancements.

Gartner Hype Cycle For Emerging Technologies, 2019
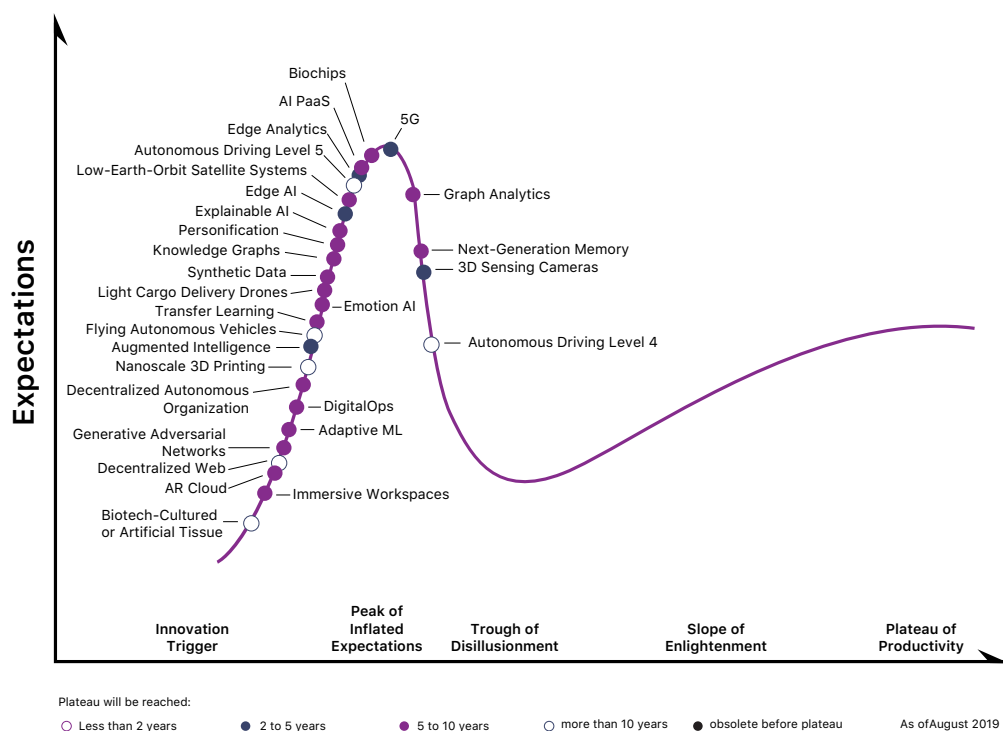
Source: 5 Trends Appear on the Gartner Hype Cycle for Emerging Technologies, 2019, Kasey Panetta (https://www.gartner.com/)

www.satsure.co
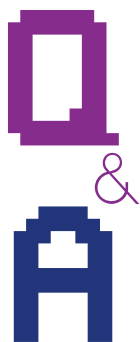
2. What role does Rabo Foundation play in this budding ecosystem of microfinance companies, VCs and AgTech startup

Rabo Foundation is providing support to financial services in developing countries by providing loans and its internal knowledge of lending in agriculture. Our experience in building financial products for farmers using both alternative and traditional data is also something we provide to our partners, both small and large banks and MFIs, along with the network of Rabo Bank. We try to lay the right foundation for a digital banking future for smallholder farmers and see promoting self-sufficiency as an effective tool for aid and social assistance, both domestically and abroad.

3. The aspect of credit scoring using alternative datasets has been talked about a lot for addressing the financing gap amongst smallholder farmers. Are there any success stories that you could share, which you believe is scalable across geographies?

There are definitely success stories of using alternate data-based credit scoring, such as in Kenya where mobile recharge data is being used by the financial industry. However, there is no fully integrated satellite-based credit scoring product yet. A lot of experiments and validation has been done by us till date, and we have found the pilots using soil moisture data to be very relevant. In general, we focused on anomaly detection in these datasets and found strong variations both in time and between farmers which makes this type of data useful for credit monitoring. Further agronomic interpretations
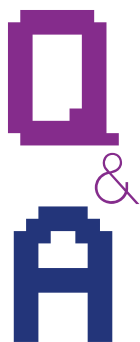
can be a challenge as this requires substantial crop-specific crop and local knowledge.

While there is a lot of satellite imagery available today, that too with the right frequency of observations, a fully integrated satellite product is still not available because a lot of testing and validation needs to be done by the startups and the banks/MFIs jointly. **We have found that many larger banks want a complete and ready-made solution and do not want to be a part of testing, leaving the startups to look for anchor tenant MFI or NBFC clients who have a digital strategy from early stages of building their books.**

The data analytics done using these alternate datasets have a lot of value for the financial services from the digital process point of view and help do farmer segmentation, beyond the credit scoring use-case. They can also help in reaching to farmers through text messages and IVR. We have seen fully integrated satellite-based alternate data systems only in agriculture insurance till data, but not banking and the time is ripe for it now.

4. In your experience, how does satellite imagery-based datasets perform for alternative credit scoring? And what are some of the key elements that financial services firms should be mindful of while evaluating proposals from AgTech companies for using such data?.

The key elements are as follows: first, define the specific use case, then ask the right questions to the right parties for getting the right answers. This is a process where the end-user should be in the lead, involving all its internal stakeholders. This process goes for both the AgTechs and the FinTechs. I have seen a lot of confusion, 'MFI asks A and tech provides a B solution and only halfway both parties become aware of the delivery mismatch'. Especially when satellite imagery is being used for the purpose of credit scoring, the obvious advantage of generating historical datasets on the performance of the farmer's farm should be backed by the limitations around the spatial and temporal resolution of the underlying imagery since it defines the output reliability.

When a satellite-based alternate data system is integrated into the existing lending operations, testing with existing customer data can be easily done before expanding the system to new farmers, whose credit will be defined by the score generated by such a system. The sample testing can then be categorized into a subset of professional farmers, or mechanised and smallholders, etc., basis which the selection of the necessary satellite images and the remote sensing indices to be used for the scoring can be determined. The value of doing such an elaborate exercise will be that alternate datasets like satellite imagery's utility will be beyond just credit scoring.
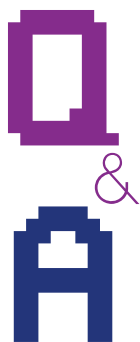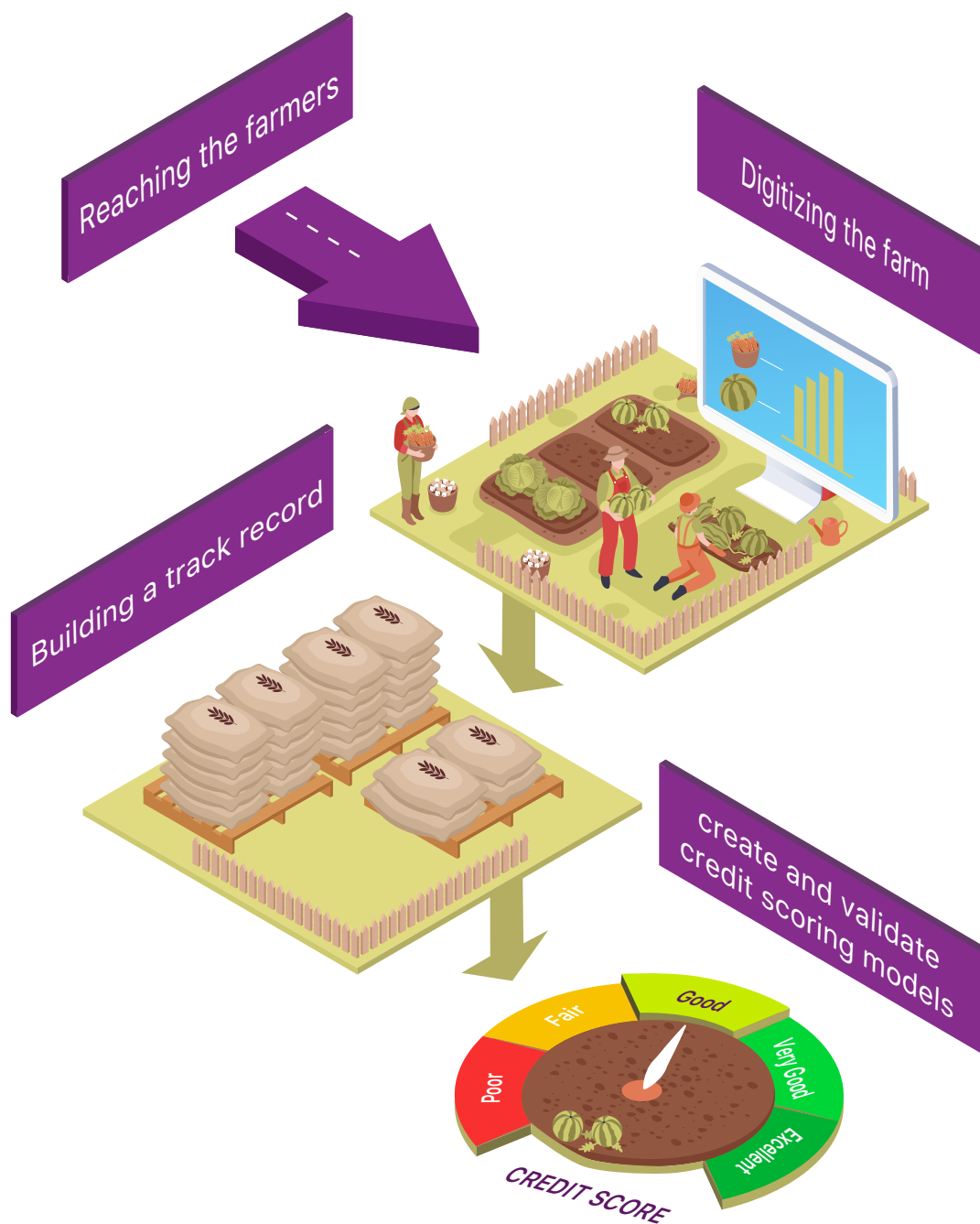
Take the case of financing a staple crop vs financing some vegetable crop. The agronomic factors defining the farm risk are different for these use cases and in all probability, the acreage and the farm sizes will be different. One may need to select commercial high-resolution satellite imagery and a multitude of remote vsensing indices for analyzing the vegetable farm whereas a Sentinel-2 or Landsat-8 dataset with NDVI time-series profile might be sufficient for the staple crop farm. The farm condition assessment has complex technical and business model trade-offs such as the acceptable model accuracy for defining acceptable defaults, and the cost-benefit of its generation in the first place.
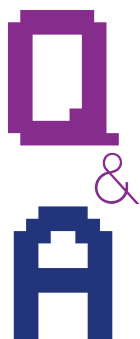
5. **Where do you see an inflexion point for the adoption of alternative data sets for credit underwriting, and what effort needs to be taken by the industry to move towards It?**

I believe that staying realistic in applications that alternate data can address to solve the farm credit gap issue is the basis of such an inflexion point. The next step would be successfully combining the credit scoring knowledge part with financial product design. And to achieve that, reaching the farmers, digitizing the farm and building a track record to create and validate credit scoring models is a must which needs the collaboration between banks/MFIs and the Ag/FinTechs to understand and draw the boundaries around questions like what is possible and what is needed. There is a gap between the stakeholders' knowledge here. One also needs to keep the definitions around the data products uniform, then only it can be used for providing financial services.
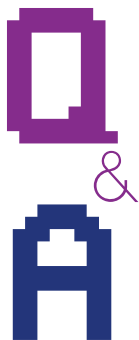
The inflexion point we are talking about will come around for tight value chains. Ag/FinTechs can bring such an inflexion point by offering modular and easy to use products to smaller organisations such as MFIs because they are more open to collaboration unlike large banks, who have a lot of other priorities and often do not have much interest or time in the agile co-development process that is required. Many larger banks will wait and watch and see how smaller MFIs and AgFintechs work, before taking any step towards large scale implementation.

Reaching the farmers

Digitizing the farm

Building a track record

create and validate credit scoring models

Poor • Fair • Good • Very Good • Excellent

CREDIT SCORE

6. An argument against too much digitization at the farm for loan monitoring and business operations, especially in the Asian and African context, is that it can lead to dilution of the good features of traditional lending mechanisms like social engagement and community support that have yielded good repayment behaviour. What is your opinion on this challenge?

In general, access to institutional finance is limited in traditional settings and people resort to informal credit, which can be pretty expensive. That has been the cultural setting globally, with community structures defining the repayment behaviour. I think offering more formal credit systems with digital tools could complement and improve these existing cultural settings. For instance, the digitisation of informal credit and savings groups helps them to become more efficient as well as building up a digital track record that can help them to attract more formal credit.

7. Based on the experience of alternate credit scoring for agricultural lending by developed countries, what are some of the best practices and features that MFIs and Startups in developing economies can learn?

Again, I would reiterate that defining a specific problem is the first and most important practice because a general solution will not work for developing credit scoring using alternate datasets. And the design of the solution should address the groups and individuals that will be using it so that its features are well defined. It can, for instance, create an insight that credit scoring is not top priority but that reducing credit monitoring costs is much more important. Or the discovery of more commercial use cases around service improvement to specific client segments.

Data quality and availability is an important point as well. It makes sense to look at data from the perspective of technical accuracy, analytical predictiveness and costs versus benefits. Important for banks and MFIs for making such programs successful is to start realistic as per the data available with the Ag/Fintech and assess both internal as well as vendor capability in a 360-degree manner. Especially roles and functionalities need to be assessed when working with external parties. A financial institution should always think twice before externalising critical scoring knowledge and be able to reflect on the outcome of the models. Employees at different levels should be able to understand why a model predicts a certain outcome and should feel motivated to contribute to improving these models. That is why we recommend to be careful with black-box models and especially, in the beginning, use them in parallel with transparent models that everybody understands.

An Open Innovation Platform
for Agricultural Ecosystem:

SatSure SPARTA

# Sarvesh Kurane
AVP- Value Engineering at SatSure

"**N**ecessity is the mother of invention", the origin of this proverb is debatable. Some attribute it to the Greek Philosopher Plato (it appears in the dialogue Republic). The idea behind this proverb can extend to necessity being the mother of not just invention, but also innovation. While discovery is the process of finding something that already exists, for the first time, invention is creating a totally new product or a process.

Roughly around 12,000 years ago, our hunter-gatherer ancestors invented farming. The consequences of this invention have been unparalleled in human history. We started settling, and the energy which usually was used for moving around, got focused on other activities, which possibly led to an intellectual revolution.

Since my article shall be talking about Open Innovation, I will elaborate a bit on innovation and then discuss open innovation in later parts. Innovation is enhancing an existing product, service or a process. One of the best examples would be innovation on the production floor of a manufacturing unity, an assembly line. This innovation by Henry Ford is a reminder of how a simple innovation gave the industrial revolution a new direction leading to an explosion of manufacturing goods.

All the above examples are milestones in human history and show the importance of bringing something '''new' in the world.

Innovations: The Wheels of Progress
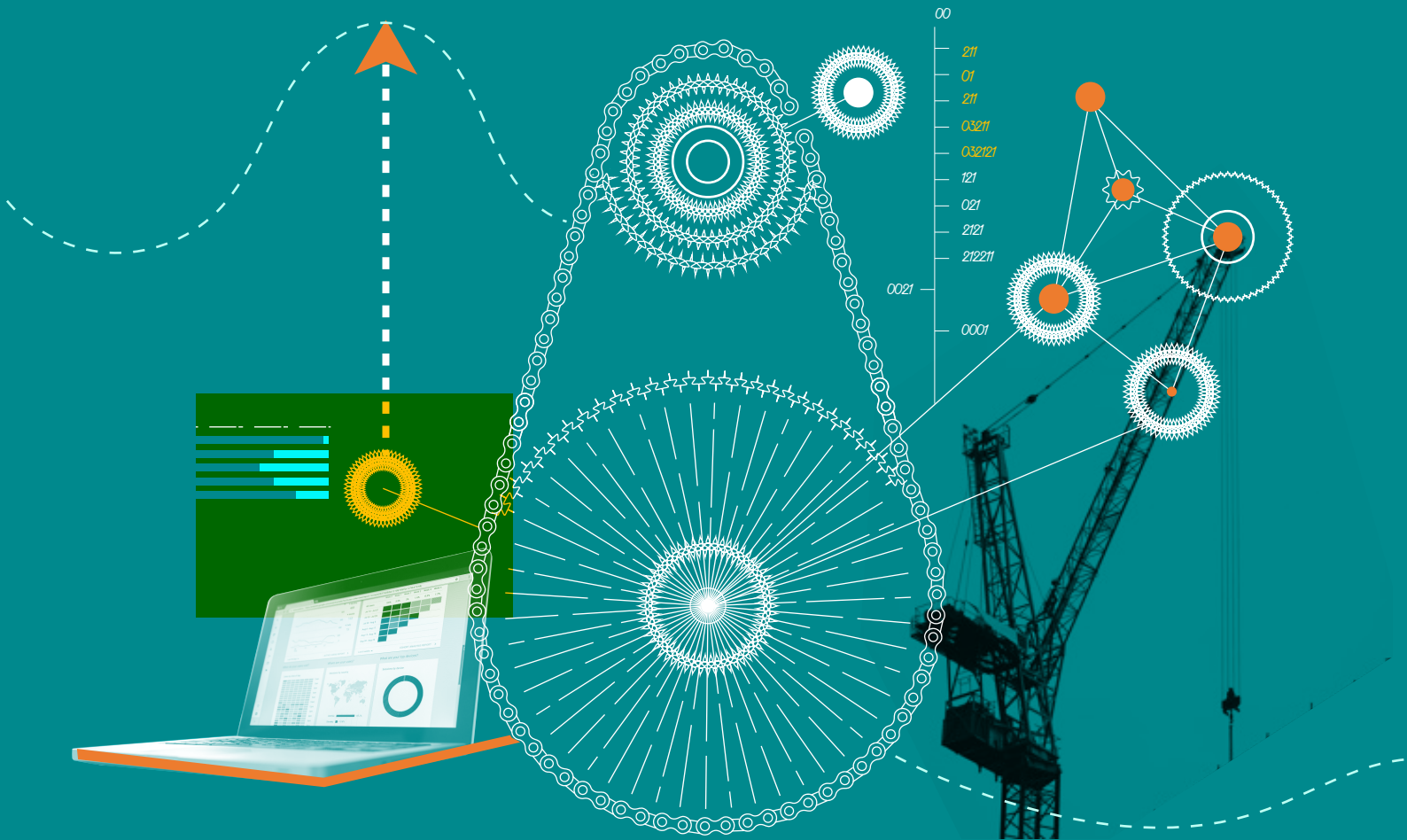
Innovation plays an essential role in the progress of an individual and society as a collective. It brings social and behavioural changes in the masses. This usually is a response of adaptation, which is required whenever an innovation makes its way into any product or a process. Just looking around we can realise that a lot of products are possibly an output of an innovative process or idea.

What Is Disruptive Innovation?

Disruptive innovation, in general, leads to the creation of new markets and new value networks.

Wikipedia is an excellent example of disruptive innovation. Before Wikipedia, we had traditional, physical encyclopaedias, which required hired experts and printing costs. Wikipedia, on the other hand, is digital and is driven by volunteer experts. The disruption lies here in two facts, one is the volume of data available, and the second most important factor is the collaborative efforts of experts from different domains volunteering to create value to the product.

This disruptive innovation brought an end to the print production of 'Encyclopaedia 'Britannica', after 244 years in 2012.

New Era: Open Innovation in Technology

The term 'Open 'Innovation' was first coined by Henry Chesbrough, who currently is an adjunct professor and faculty director of the Center for Open Innovation, Haas School of Business at the University of California. The term is used to promote the exchange of ideas for technology innovation in 'today's age of information technology and data boom. It refers to a scenario, where an organisation's internal experts and external experts, not a part of the organisation, collaborate to solve a problem or create a solution.

The underlying philosophy of the open-source movement is the open-source community on the other hand is, where developers and coders voluntarily create products while keeping the source codes open. Thus, any individual can access and modify these codes. Open source allows even the small organisations access to free software, thus balancing the competition on a global scale.

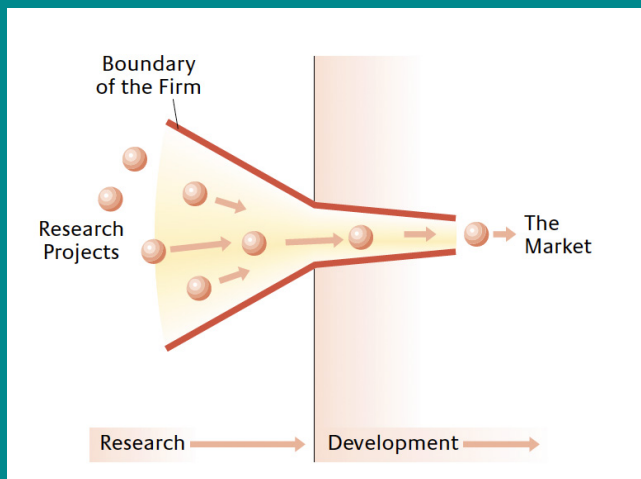| Open Source	Open Innovation
The term open source refers to something People can modify and share because is publicly Accessible.	Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovative, respectively
Today , however, "open source" designates a broader set of values what we call "the open source way."	[This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology

Source: https://opensource.com/
Open Innovation Definitions by Henry Chesbrough

Traditionally, technology companies in the latter half of 1900, focused on closed innovation. That means that the existing internal staff works on innovations within the organisation. It was all going well until the internet came into the picture and led to the data boom globally. The open-source grew exponentially in the internet era. It is straightforward. With a closed innovation model, an organisation has access to only experts within its company. This way, it is potentially losing out on the expertise of a huge population outside the organisation.

Close innovation

Open innovation

Source: https://sloanreview.mit.edu/article/the-era-of-open-innovation/
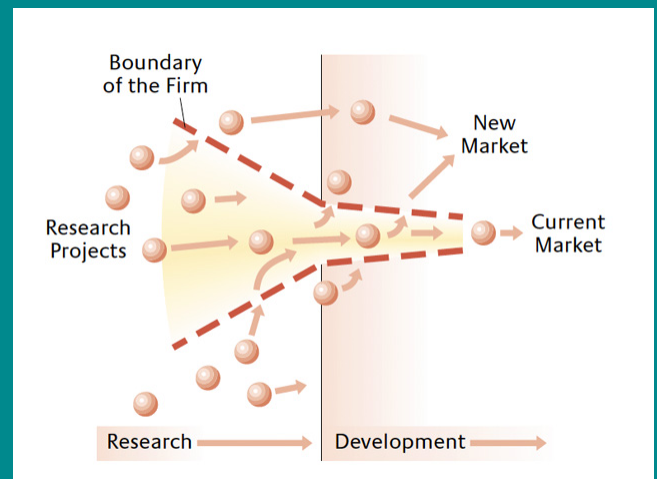
▶ In closed innovation, a company generates, develops and commercializes its own ideas

▶ Restricted scope for ecosystem innovation

▶ Exchange of internal and external expertise, ideas and innovations

▶ Porous boundary (represented by a dashed line), enabling innovation to move more easily between the two

▶ Wild scope for ecosystem innovation

Need for Open Innovation for Agriculture

To understand the importance of open innovation in agriculture, we need to understand the importance of agriculture, and 'it's a role to tackle food security in times of climate change.

Today, nearly 80% of the global population lives in less developed countries of Africa, Latin America and Asia. These countries have very poor data infrastructure. Every decision about agriculture, policy-oriented, credit access, insurance or selling of Agri inputs, needs access to good quality information of agricultural parameters. Usually, organisations rely on public data sets, which don't provide the required granularity of information, or on data collected through surveys and field staff. The accuracies of a few of these data points are questionable since they lack a robust scientific approach to data collection.

In India alone, more than 400+ AgTech startups are working to solve some problems of the agricultural value chain. Beyond startups, there are small and large organisations involved in the value chain like lenders, insurers, academicians, researchers, policymakers, traders etc.

All the organisations in the value chain today are, to a certain extent are working in silos, utilising their internal expertise, to solve problems. There is a lack of inter and intra domain expertise exchange in the AgCommunity. This lack of a collaborative open innovation platform, a platform where people with expertise from different sectors coming together to solve a genuine local or global problem, is limiting co-innovation opportunities.
An Open Innovation Platform thus will help solve two important problems in the Agricultural Sector.

1. Access to data: Organisations and individuals can share the data and information they possess and are willing to share with the community for the common good, and something which may not be proprietary or revenue impacting for organisations

2. Co-innovation opportunities for innovative solutions to problems

Take the current COVID-19 scenario. We are all in the midst of a global crisis with many countries experiencing a lockdown. The agricultural markets are collapsing due to limited access to trading markets, buyer-seller gaps. Everyone is working remotely and forced to stay indoors. In such a situation, an open innovation platform can play an important role, where different stakeholders like Agri input firms, lenders, farmers, traders, logistics providers, buyers and suppliers come together to create a common solution to tackle two important problems here, food security and demand-supply gaps.

| Organization and start ups working in silos | Limited co-innovation opportunities | Absence of universal platform to collaborate | Lack of reliable information and data integrity |

SatSure SPARTA: Road Towards Open Innovation

SatSure will be launching its Open Innovation Platform, SatSure SPARTA, soon. While we are trying to launch it in April 2020, the COVID-19 lockdown has affected the plan. We still hope to achieve our target of launch.
The idea behind the platform is democratisation in the area of agriculture, build a community, where amateurs and experts volunteer to come together and achieve a common objective, solving problems in agriculture.
The platform shall have some key features, shown below:

1. Access to basic agricultural information up to a certain administrative unit level

2. Executed and suggestive use cases for the agricultural value chain

3. The option of uploading problem statements (Both functional and technical problems)

4. A platform for people to join and collaborate to solve a problem statement

5. Ability to upload solutions and solved use cases

6. Solutions open for the community to access

SatSure plans to adopt a few principles from the Collective Impact Framework to achieve the objective of building an Agricultural and AgTech community. 'Collective impact' was first used in an article in Stanford Social Innovation Review (SSIR) in 2011.

According to the Wikipedia page on Collective Impact, there are five conditions which an initiative should account for when they plan to use the collective impact framework:

Common Agenda:

The agenda is set with an objective of meeting the target of solving a problem. This is approached through a 4-step process:

1. Having a common vision

2. Alignment and common understanding of the problem statement to be solved

3. Consensus on the approach to the solution

4. Consensus on the plan of action

Shared Measurement System:

The success of any solution depends on the agreement between engaging parties on the criteria for success. This is usually depending on key indicators or milestones pre-decided for a project. Thus, the engaging individuals and parties should have a consensus on the methods and parameters of measurement of success of a project.

Mutually Reinforcing Activities:

This collaborative engagement is dependent on different stakeholders, from different organisations and sectors. They enable a successful implementation plan that requires creating a mutually reinforcing plan of action.

Continuous Communication:

The time duration for which the stakeholders engage can vary depending on the complexity of the problem statement. Since the participants can be strangers, in the beginning, a cohesive environment can be built with trust, knowledge sharing and learning, and adaptation. This shall take time and requires frequent communications.

Backbone Organisation:

The backbone staff acts as an independent staff which plays six roles for the success of the initiative:

1.   Guide the vision and strategy

2.   Support aligned activity

3.   Establish shared measured practices

4.   Build public will

5.   Advance policy

6.   Mobilise funding

COMMON AGENDA

MUTUALLY REINFORCING ACTIVITES

BACKBONE SUPPORT

SHARED MEASUREMENT

CONTINUOUS COMMUNICATION
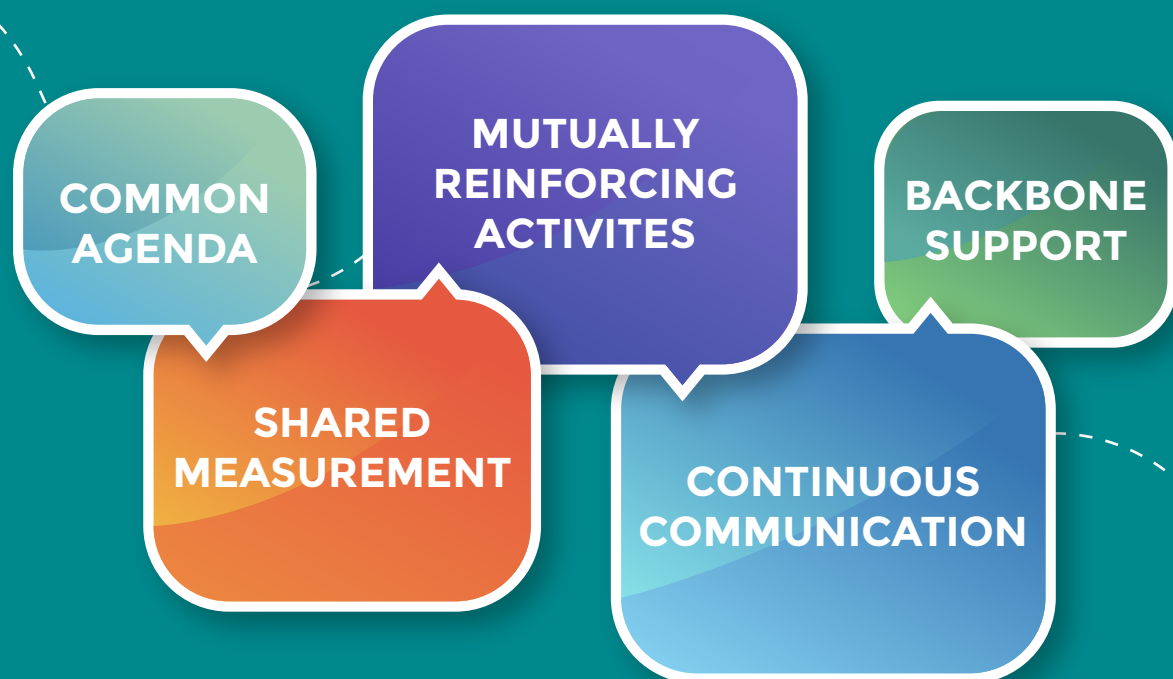
As of now, we are not establishing a backbone organisation and all the six acts, which shall be running independently. The platform will be hosted and supported by SatSure, while contributors are free to contribute to the community.

We plan to launch SatSure in phases. The community we are trying to target are:

1. SatSure partners and startups involved in the Agriculture Value Chain

2. Data scientists and analysts

3. Agri Input professions

4. Banking, insurance, and financial services professionals

5. Developers

6. Policymakers and Multilateral Organisations

7. Academicians and Researchers

8. Essentially anyone willing to collaborate with individuals and organisations and contribute a solution for the open innovation platform

The solutions will be open to the public. Thus anyone can use it, modify it, or improve on it and reshare it on the platform for the larger ecosystem to test and use.

The first phase of the launch will provide people access to sub- district level agriculture data, a limited set which SatSure as a For-Profit organisation can afford as a free source for the community. Additional datasets can be made available as either free or at a cost, depending on the volume of data and case to case basis. Through the platform, we would like to utilise the expertise of the ecosystem and encourage people to help create a robust repository of open solutions for everyone in the AgEcosystem to access.

As an ending note, I feel collective efforts shall enable the democratisation of ideas and solutions for the agricultural ecosystem. Co- innovation for the public and by the public shall help take them to farmers and communities in need.
If you are interested to know more about SatSure SPARTA and would like to be a part of the Beta Testing Phase and the community in general, drop us an email at info@satsure.co with Subject as 'SatSure 'SPARTA'. Stay tuned on our social media handles for more updates.

References:

Collective Impact By John Kania & Mark Kramer, Winter 2011, Stanford Social Innovation Review
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