



Review Article

Grants, Funding, Awards and Recognition in Healthcare Innovation

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ABSTRACT

For an idea to be validated, prototyped and tested, adequate financial planning plays a major role in the long journey of the idea from the brains to the market. There are various ways of getting funds for the startup. The founders usually start with their own money from their savings or some borrowings from family and friends which is called bootstrapping and is very common and crucial, akin to doctors starting their own clinics and small nursing homes. As they start to grow, large funds are needed in the early stage to set the foot firm with the help of an angel investor/seed investor which is like starting a full-fledged hospital. The Venture capitalist comes in at a stage when the idea is proven and started with operations, early-stage customers and has a major potential to expand, just like when more branches of hospitals are planned. Private equity companies and investment banks are those who are keen to invest in companies who have proved themselves beyond doubt with strong leadership in the market and are looking for a major return on investment by making the company bigger, which is like planning a pan India network of the hospital chain. These investments happen multiple times or rounds at various stages of the company usually termed series A to series D or E and ultimately leading to the Initial Public Offering when it goes public from private holding. This funding journey is a well-planned effort quite specific to the investment stage, investor type, and their preferences. The recognition of the startups and their ideas plays a major role in them reaching to market and access to funding opportunities. The funding and national recognition from various govt. and private agencies such as BIRAC, FICCI, NASSCOM, Wellcome trust, and Villgro and international agencies such as CAMTech, Bill and Melinda gates foundation, Grand Challenges Canada, Stanford, and Harvard gives the much needed attention from the potential investors and is a major advantage which should be utilized well. Social media recognition plays a major role in recent times which has the potential to make an innovation “viral” and reach millions of customers and make relevant investors and govt. agencies notice, which can be a huge breakthrough for the company if the innovation has a social impact. We would like to make this article more practical, experiential, and contextual for better connect with pediatrician colleagues.

Keywords: Pitching, Healthcare grants, Healthcare Innovation funding, Healthcare innovation awards

PITCHING

Before dwelling about the grants, a brief about the most important tool of pitching the idea in the right way to the right person which gets the fund/grant approved. Having a brilliant idea is the first important step, the next is pitching^[1] which is, to be able to present the idea and the business plan in a very effective way to the investor with all the essential aspects they are interested in, to help them decide to invest in your company. There are various types of pitching, of which the two of these are quite interesting:

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Twitter/Twit pitch

Twitter/Twit pitch is to explain what you do in a tweet size byte (less than 280 characters/letters) like A new technology based healthcare company pitching: “we are the uber of healthcare, trying to solve the access in a very affordable way, all sitting at home via smartphones”.

Elevator pitch

Elevator pitch means, to be able to explain about the problem you are solving, how innovative is your solution, the potential in market and the opportunity for the investor, all in under 1 min which is usually the time you get to pitch to an investor in case there is a chance meeting them while in an elevator. These are just to create curiosity for further discussions where you present the more detailed business pitch/investor pitch and seal the deals.

GRANTS

A grant^[2] is an award, usually financial, given by one entity (typically a company, foundation, or government) to an individual or a company to facilitate a goal, or help company for the purpose for which grant is announced. For example: During the initial times of COVID pandemic, many govt. agencies announced grants for solutions targeted towards managing COVID diagnosis, affordable ventilators, monitoring of disease, etc. The biggest advantage is that there is no need to pay back the grant but it needs to be accounted for so that it's used for the intended purpose. But grants do not come easy. Writing a grant proposal itself is an art and you need to make sure you understand well about the purpose of the grant and alignment with the objectives of the grant and your company. Understanding the crucial factors that the agency is keen on and the impact your solution can create on the field are very important. In India, there are various government and private grant funding available specific for medical devices and healthcare related initiatives. Another way to get a grant is to participate in Hackathon^[3] which is an event where people come together to solve problems. In health-care themed Hackathons there are people from diverse backgrounds of medical, engineering, design, business, etc., meet, with the healthcare experts pitching their pain points and the audience with varied expertise in different domains trying to understand the problem. They form teams with the clinician and brainstorm further to develop a proof-of-concept solution over the next 24 h or 48 h or a weeks' time and present it to the forum. The best problem to solve based on the impact it can create gets the prize in the form of a grant and other support. Ex: I (Dr. Gunda Srinivas) happen to participate in a multicity, pan India CAMTech 2016 Jugaadathon/Hackathon where I pitched about the problem of unsafe hand ambu-bagging practices in resource limited settings due to shortage of ventilators which I have witnessed in many healthcare setups. We created a team

and developed a working prototype in 48 hrs and presented it to jury, for which our team was awarded national prize for an affordable, automated Ambu device solution. This device could be used as a standby ventilator instead of unsafe prolonged hand ambu bagging when there is non-availability of ventilators.^[4]

A word about Incubators, these are organizations that support startups at their initial stages when they possess only an idea to bring to the marketplace, but no business model and support them to transition from innovative idea to reality. They typically provide the space to work, other support services such as connectivity, maintenance, and common facilities such as labs, makerspace, and workshops which can be used by all the startups being incubated there. The idea is to remove all possible hurdles and help the startups work and focus on their core idea and take it forward. This is like a doctor getting trained during the PG course.

Few examples of govt. and private grant schemes and incubators.^[5] Many of them provide grant and incubation together.

Biotechnology Ignition Grant (BIG) scheme

Biotechnology Research Assistance Council (BIRAC) offers the BIG grant of up to INR 50,00,000/- for individuals or companies (not older than 3 years) for idea to proof of concept (PoC) generation stage.

AMTZ

Andhra Pradesh MedTech Zone Limited^[6] (popularly known as AMTZ) is an enterprise under the Government of Andhra Pradesh, a 270 Acre zone, dedicated for Medical Device Manufacturing. AMTZ envisions to put India on the global map of high-end medical equipment production and make Funding and Awards in Healthcare Innovation. products affordable and accessible not only for India but for the world at large. They also provide incubation support to the startups.

Healthcare Technology Innovation Centre (HTIC)

HTIC^[7] is part of IIT Madras – HTIC MedTech Incubator. The focus is to foster and stimulate MedTech innovators, aspiring entrepreneurs, and early-stage start-ups.

Startup India platform

Startup India^[8] Hub is a one-stop platform for all stakeholders in the Startup ecosystem to interact amongst each other, exchange knowledge, and form successful partnerships in a highly dynamic environment. Startup India learning Program is an extensive 4-week free online entrepreneurship program to help entrepreneurs get their ideas and ventures to the next level through structured learning.

Centre for Cellular and Molecular Platforms (C-CAMP)

C-CAMP^[9] is an initiative supported by the Department of Biotechnology, Govt. of India is an enabler or catalyst of cutting-edge research and innovation in the life sciences since 2009. They facilitate Bioscience Research and Entrepreneurship by providing Research, Development, Training and Services in state-of-the-art Technology Platforms. They provide grant funding and incubation support very specific to healthcare innovations. An example of a startup being incubated here working on neonatal solution: Sensivision, developing a comprehensive HIE management system with treatment, diagnosis and prognostication integrated on a single device. The product is currently in the final stages of prototyping.

NASSCOM Centre of Excellence for Internet of Things(IoT) and Artificial Intelligence(AI)

Centre of Excellence for IoT is a Digital India initiative led by Ministry of Electronics and Information Technology and NASSCOM.^[10] It is the largest existing innovation platform for enabling IoT revolution through connected devices using emerging technologies such as Sensors, Big Data, Analytics, AI/Machine Learning, Augmented Reality/Virtual Reality and Robotics. Interesting examples of healthcare startups they are incubating are Cradlewise which is a start-up who have innovated an intelligent cradle which can soothe and bounce gently like the mother does while putting the baby to sleep and host of other features such as motion detection, remote monitoring, and music to help baby sleep well and the parents as well. Another interesting startup being incubated here is Doxper which is an intelligent prescription system with a smart pen and coded paper which can digitize the prescription as it is being written without need for using computer or mobile to type into it. All the records can be accessed through mobile app with the physician. The prescription paper is kept by the patients.

InnAccel

InnAccel^[11] is another healthtech incubator based in Bangalore with myself (Dr. Jagdish Chaturvedi) having led as clinical director has co-invented 17 medical devices which are in various stages of development. Among them is an innovative CPAP device for neonates - SAANS which is a portable, infrastructure-independent, neonatal CPAP for short-term breathing support in RDS mainly during transport or as standby device. Another example is that of a Nasal foreign body extractor Noxeno which is a simple to use device and can be used by any pediatrician or physician with no training to extract nasal foreign bodies mainly in the anterior nasal cavity.

Tata social alpha, IKP eden, excubator, villgrow, and Unitus Seed Fund are few other Indian based incubators and grant providers.

CAMTech Innovation award, Bill and Melinda Gates foundation, and Grand Challenges Canada are international incubators and provide grants in significant amount.

FUNDING

“Funding”^[12,13] refers to the money required to start and run a business. It is a financial investment in a company for product development, manufacturing, expansion, sales and marketing, office spaces, and inventory which is just like when we plan to start off a clinic or a hospital and list out the overall expenses. There are multiple sources of funding available for startups. However, the source of funding largely depends on the stage of the startup as depicted in [Figure 1].

Broadly there are three types of funds that can finance the company namely, Grants (as discussed earlier), Debt which are like loans and need to be returned back in stipulated time and Equity which means to give off a partial ownership of the company in return of the funds. In equity, there is no need to return the investment, the ownership value of the shares increases overtime due to the company’s progress and fetches returns to the investors. Villgro, Avishkar, Unitus seed fund, Healthquad, etc., are specific healthcare focused investment firms.

Bootstrapping/Self-financing (Few lakhs)

It is relying on your own savings, borrowed from family or friends and initial revenue to operate and expand without any external investments. This is the first recourse or plan A. for most entrepreneurs as there is no pressure to pay back the funds or dilute control of your startup.

Angel Investor (25 Lakhs to 10 crores)

Angel investor is an individual with considerable wealth who assists new and small startups in the initial phase by providing them required funding or capital in return for a partial ownership in the company. They also bring in some relevant expertise, connects, and their network to make things happen fast. Ultimately, they gain only when the company gains.

Venture Capital(VC) (2 crores to 20 crores and can go upto 100 crores)

These are professionally managed investment funds that invest exclusively in high-growth startups. Each VC fund has its own investment thesis – preferred sectors, stage of startup, and funding amount – which should align with your startup.

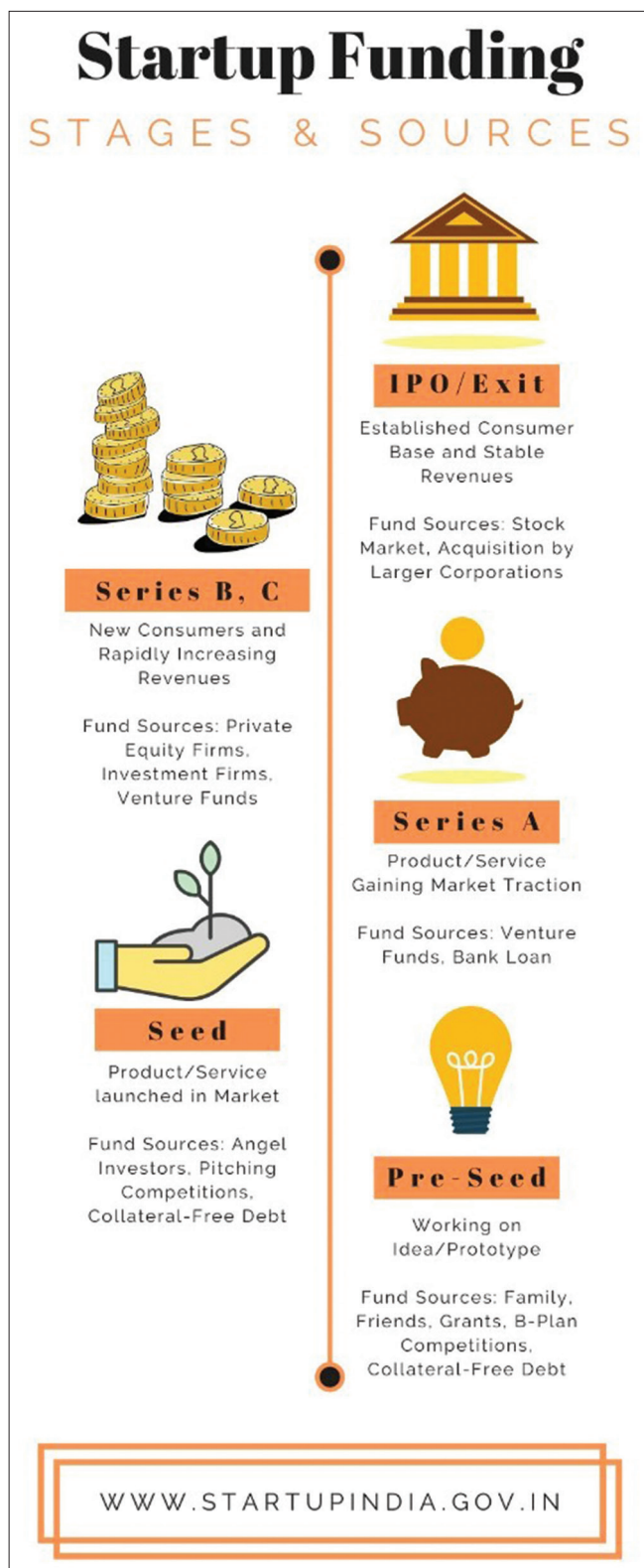


Figure 1: Various stages of a startup and funding sources.

Vcs take startup equity in return for their investments and actively engage in mentorship of their investee startups.

Private Equity (100 cores onwards)

Private Equity (and investment banks) is designed for relatively mature companies that are beyond the “will this idea work?” phase and are onto the “how big can this possibly become in future?” phase. They operate massive funds that are more focused on smaller multiples than angel investors or venture capitalists, but more guaranteed returns because there is less risk involved in funding an already successful company.

STAGES OF STARTUPS

The above said type of investors come in at a specific stage of a startup as mentioned below, and the corresponding funding round is named in Series A, B, C, D, E.etc. A very buzz word among startups and dream of any startup is to be an Unicorn which means the valuation (current worth of an asset or a company) of a company has crossed \$1 billion. Ex: There are 37 Indian Unicorns till now: ^[14] Flipkart, Swiggy, Zomato, Ola, Byju, Bigbasket, Oyo, etc.

Ideation/pre-seed Stage

This is the stage where you, the entrepreneur, has an idea and are working on bringing it to life. At this stage, the amount of funds needed is usually small. Bootstrapping and grant funding are the usual sources at this stage.

Validation stage/Seed stage

This is the stage where your startup has a prototype ready and you need to validate the potential demand for your startup’s product/service. This is called conducting a “PoC,” (Proof of Concept) after which comes the big market launch. Common funding sources utilized by startups in this stage are Incubators, govt. loan schemes, Angel investors or crowd funding. Very recently govt of India announced a 1000 crores seed fund for startups in the country. Hence, the opportunities are huge to be utilized well.

Early Traction/Series A stage

This is the stage where your startup’s products or services have been launched in the market. Key performance indicators such as customer base, revenue, and app downloads become important at this stage. Funds are raised at this stage to further grow user base, product offerings, expand to new geographies, etc. Common funding sources utilized by startups in this stage are: Venture capital funds, Banks, and Venture debt funds.

Scaling/Series B and above stage

At this stage, the startup is experiencing a fast rate of market growth and increasing revenues. Common funding sources

utilized by startups in this stage are: Venture Capital and Private Equity firms.

Initial Public Offering (IPO)

IPO refers to the event where a startup lists on the stock market for the 1st time and leads the company in market from being private to public. Ex: Zomato, a food delivery startup which was founded in 2008 had around 21 rounds of funding till now and raised more than 2 billion \$ with a recent IPO to raise another 1.5 billion \$ with the company's total valuation at more than 8 billion \$ now !.

AWARDS AND RECOGNITION

Awards are a very important way of being recognized, which can bring in more awards and most importantly it motivates the team to achieve further. It brings various connects and reach to potential investors. Healthcare domain has off late become an exclusive domain of some investor firms.

HOW TO LEVERAGE THE AWARDS?

The most important aspect is that, when applying for awards, it has to be done at a specific stage where your solution has already been largely tested and making an impact. This helps because when it reaches more people, most of the questions are already answered and can impress upon the bigger investors. Awards mean the founders and core team coming into limelight and they all need to talk in alignment at various forums. Good number of investors might line up if the solution is disruptive and you need to assess the investors well for alignment with their intentions and company's vision/mission before going ahead with any of them.

THE AGE OF SOCIAL MEDIA RECOGNITION

In this new age of social media, a lot can be leveraged if you have a social media strategy to connect with people who will have potential investors as well. The way a startup portrays the award along with their uniqueness of solution can create quite a buzz and go "viral" over the social media especially if the solution connects with the mass and has potential to disrupt and is out of the box. Few examples are: Aum device, a silicone based voice prosthesis, innovated by an onco surgeon Dr. Vishal Rao from Bengaluru, that can help patients affected with throat cancer to regain voice.^[15] It costs less than one hundred rupees and has been widely circulated, talked about over various social media platforms!

Another aspect is a good network among peers has a significant impact. In a study on social networking site LinkedIn, published in a journal,^[16] it was found that:

- Founder connections are positively correlated with

annual funds raised by a company. Social connectedness of founders is the best predictor of funds raised.

- The predictive validity or accuracy of the founders' social connectedness cue is 69% accuracy which is substantial compared to other investment decision-making models.

CONCLUSION

Irrespective of what problem you are solving, access to funding and building a very able core team is important. Appropriate funding and recognition at the right time can change the fate of the startup.

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Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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