From Technology Transfer To Open IPR

“The traditional models to release the research finding from many institutions like Universities, are in most of the cases badly outdated and broken. Leading a big portion of the research to be under utilized as part of feeding new research based innovations.“

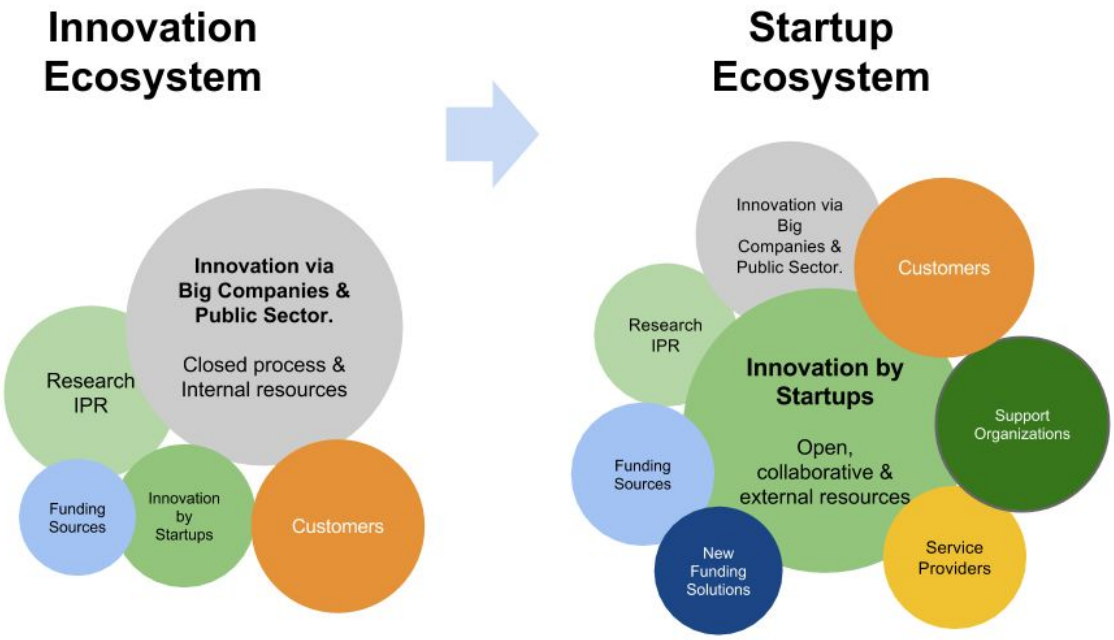
Background

The current research based IPR release models (Technology Transfer or TT) or these functions iterative improvements are based on traditional innovation funnel models, that themselves are broken from many parts, not the least - the access to innovation funding sources and most specifically access to risk finance from the private sector and even more specifically the traditional Venture Capital model, that is broken in many ways, like poor ROI and being structurally difficult to scale or for fund to be flexible.

Megatrends in progress

How ever, many parts of the innovation process and funnel problems have been identified and new models have been emerging to tackle some of the main issues. Few of the validated models include the Startup Accelerator concept combined with specially designed matching risk finance instruments. Another, more broader disruptive model for the funding side is the crowdfunding concept, with a big number of it’s variations, from donate, reward model based to equity and loan based models and further on to hybrids and vertical specific models of these, that also connect to different states of the innovation via startup stages lifecycle.

Another big megatrend impacting innovation in general, is the big transition that is expanding or transitioning the innovation ecosystem towards startup ecosystem model. This means that where traditionally a big portion of the research based innovation have been moving from research lab, institution etc. to innovation via large corporations or public sector and the new ventures (ie. Startups), have been a smaller part - to direction where innovation volume and success via old models (Corporate & public sector) is shrinking compared the innovation via new companies & startups. This can also be validated from the statistics of where new jobs are being created and where new unemployment is coming from.



From past

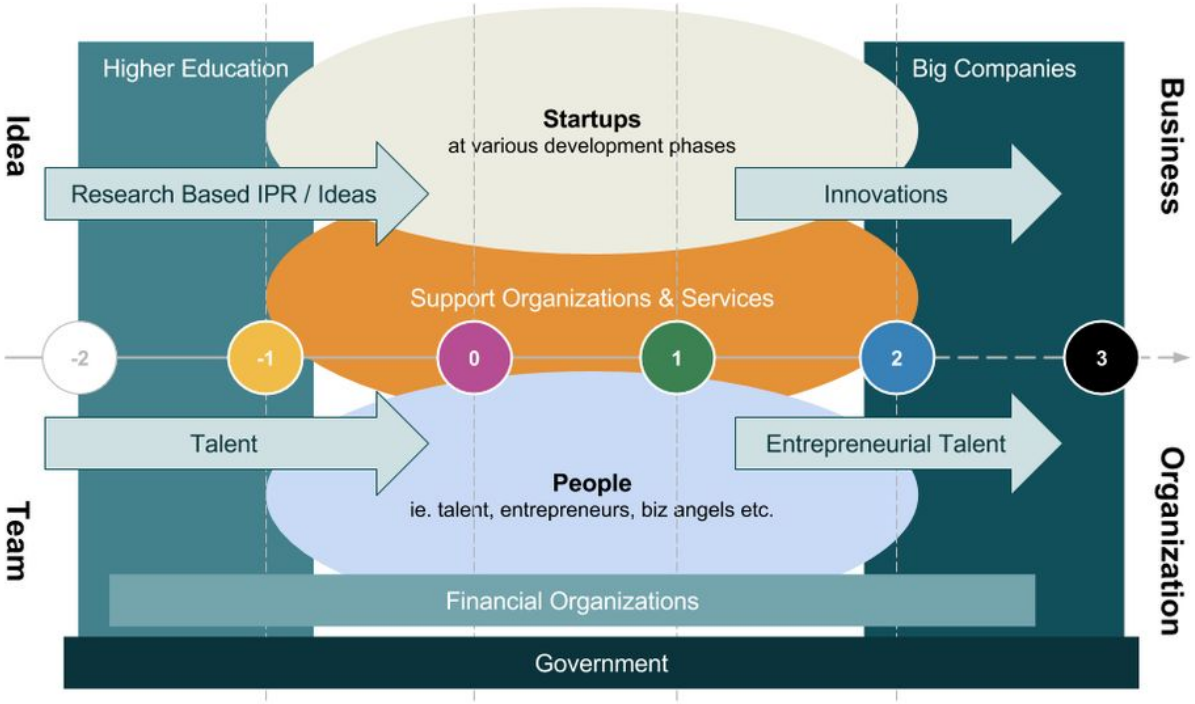
- simple linear world
- closed, expensive and less creative pressure or freedom
- dependency on “hosts & gatekeepers”
- about ideas, invention and research by big companies creating most actual innovations (mainly due cost factors)
- old models are already working “at their best level” and are difficult to significantly improve, so markets seek for "next level" solutions
- minimal innovation impact achieved by outsider strategies and methods (customer development)
- Innovation requires for someone to take initiative with commitment to make it happen

Today and future

- nonlinear, globally networked world
- free & cheap technology, platforms, infra & go to market channels
- innovation via startups fast, flexible, highly motivated, cost effective, supported by private and public parties
- innovation process is more open and more exposed to true market validation
- smart big companies are moving towards open innovation
- working together and acquiring most potential startup and talent
- startups are “outsourced innovation” for big companies, just like app developers are for software platforms (iOS, Android etc.)
- Startups and innovative SME's are biggest job creators

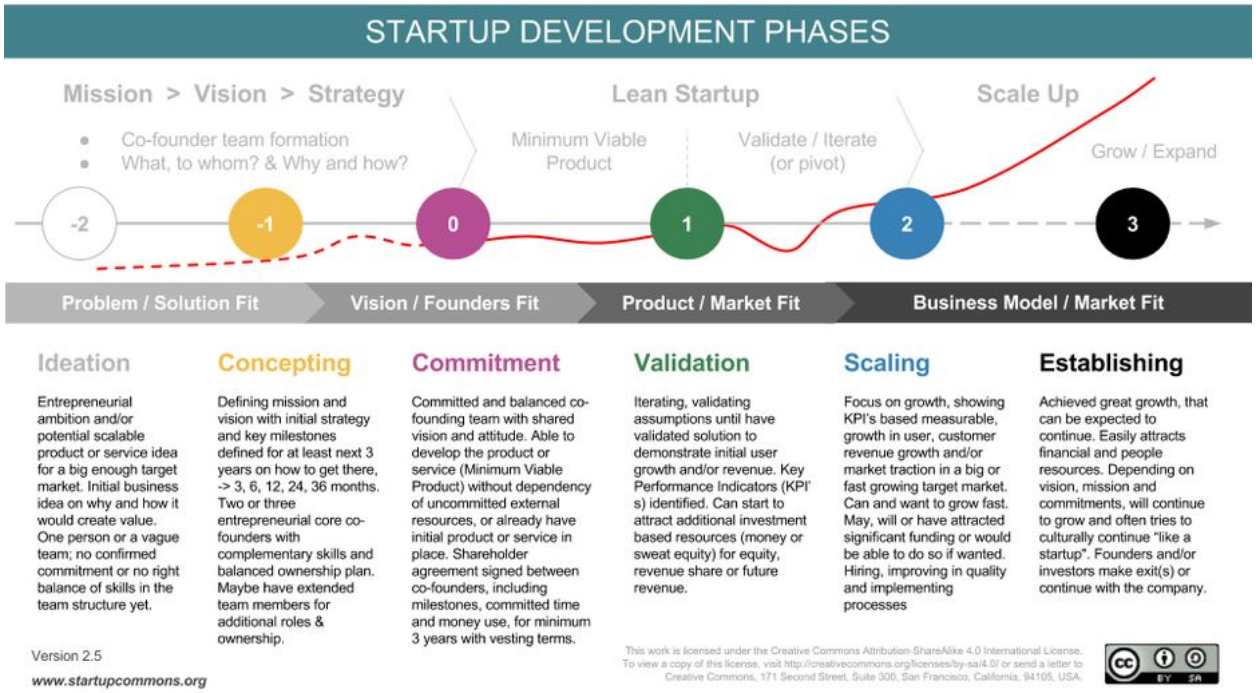
This transition of innovation moving from old “closed” and complex innovation ecosystem to more transparent visible open innovation and to more entrepreneurship driven startup ecosystem, are also the reasons that new funding instruments connected with entrepreneurship like accelerators and fintech driven digital models like crowdfunding have emerged and continue to be innovated, as the old funding models are not transparent, scalable, flexible and market driven enough for the speed and variations of innovation happening via Startup Ecosystems.

From economic perspective, dynamic startup ecosystems breed new startups that create 2/3 of new jobs, attract international talent and foreign direct investments. However, in most places in the world the traditional technology transfer models are not properly connected (if at all) with startup friendly models and terms with related facilitation, to feed research based IP to ignite new innovation and startup teams, or to enhance the existing innovations or potential innovations. In many places the exiting TT terms are actually even holding back many startups from forming.



For these reasons it is important to understand startups and startup ecosystem and the difference between startup and innovation ecosystems in general, and use tools like startup development phases to map out key functions, activities and players in the ecosystem, to know in what stages of the innovation process by startups, the different organizations and services can focus to support, as well as to identify existing startups at their various development phases, in their own progress.

It is also important to break silos between research and innovation, build connectivity and measure all connecting activities in the ecosystem as a whole, to make sure that improvement efforts impact can clearly be measured and validated to help bring focus on those activities and models that work the best and to limit or remove the effort to those that are not producing value. As the network connectivity within and between the ecosystems is the single most important contributor to growth.



Important things to consider

While there already are great new, more scalable funding and accelerator models in use to accelerate innovation and ability to handle higher volume of innovation via startups, and those models are being iteratively developed and also new models being invented and tested all the time, there is still quite little focus and new models being tested at the research IPR release TT functions, that should actually support these megatrends and transition from traditional innovation ecosystem model to innovation via startups ecosystem model. Where most of the IPR release processes and format are still based on the old models in both, when releasing to corporations or to new ventures (ie startups). In case of releasing to startups, is due the release models and agreements are based on the traditional venture building model where Venture

Capital funding and their needs are the ultimate driver for the terms of the IPR release models and agreements.

However, since the traditional venture building and funding models themselves are already proven to not be sufficient and scalable enough for the growing needs of new ventures, being validated by all the new models being created to fix this problems along with big major focus by governments to focus on improving their innovation output and related processes, with various new programs and instruments - more radical and new approaches need to be designed, implemented and tested at the research & IPR release models, processes and agreements as well.

In addition to other reasons, it's also a known, that those people who actually do and are most interested on the research part of the overall innovation process, are usually not the most motivated or potential people to become the entrepreneurs in form of new startup venture or being the commercialization experts in the large companies, also validating that new "IPR transfer" based models are required.

Some statistics

From statistical point of view a big majority of the research based IPR with innovation potential, that already have significant financial and labor time investment in them is not reaching the most relevant and active innovators (startups) and remain almost completely unused or tested for their innovation potential (some claim even as much as 95%), while at the same time also the small part of IPR that are released to validation that is mainly closed, highly protected and locked from other use - in some cases for very long time. It's not uncommon that from research where IPR transfer is done, it's only done for few potential innovation tracks or in worst case just on a single one where the acquirer of the rights could even want to try prevent from new competitive innovation from emerging. Mainly due the traditional models have been designed based on the understandable needs of the venture capital model or large corporation business interests to protect their investment made to acquire the IPR's. Also a big portion of these released IPR's also fail in the market validation, due the nature of high risks of innovation in general, regardless of the channels used (corporate, startups or public sector). Where the average failure rate can be as high as 2/3.

Based on these statistics, the real success rate of validated innovation emerging from research based IPR can be considered to be extremely low compared to potential, so it's clear that traditional models are not optimal for societal and economic development at large. At the same time, by being able to improve this ratio, there is a significant opportunity to fuel new innovation and economic growth via new IPR release models combined with improved visibility, global &

open accessibility and true integration with startup ecosystems. This calls for new thinking and much more radical approach to research based IPR release models.

Accelerating innovation

Innovation does not happen by itself, but require a committed and skilled people to make them happen. Potential innovation is surrounded by “volume of unknown factors”, and as such only models designed to work with this reality, should be applied and new ones developed and iterated. The core method of dealing with “unknown” is the **“implement > test > measure > learn”** -based validation cycle. In case of startups there is a methodology build around this cycle called “lean startup”, that have been broadly documented, in use globally, refined for improvements and variations created, along with variety of tools created and available to help cope with “the unknowns”. These methodologies focus on maximising the speed and minimizing the cost, of validating assumptions and learning from them - to simply convert all the “unknown factors to knows ones” one by one.

“A Startup is a team of entrepreneurial talent with innovation in process, in identifiable and investable form, in progress to validate and capture the value of the innovation - with target to grow fast with scalable business model for maximum impact.”

By opening up the research based IPR with carefully designed fixed and scalable models, instead of traditional TT model where each IPR release is slow and expensive custom approach, - maximizes the tracks that can be validating the innovation potential in parallel. This means that;

- instead of trying to search and sell potential targets with interest to “license” the IPR and then going into lengthy and complex negotiations about the terms, that typically end up with very locked and strict agreements that at the same time intentionally focus to limit competitive tracks being created from the same IPR. (the slow, unscalable model that should be applied only for IPR & Innovation with minimum unvalidated parts)
- to design an fixed “open IPR release” model, that will allow anyone that qualifies, to just take use of that IPR to start building innovation from it, with same fixed commercialization terms (the fast, scalable model that should be applied in IPR & Innovation with maximum unvalidated parts)

Key problems

If the identified key reasons, for why research to innovation are based on the above assumptions, then the few key issues to fix are:

1. more research based IPR need to be get on to innovation track
2. from each potential research based IPR maximum number of parallel tracks should be targeted
3. any already released IPR that fail, but have been iterated forward, should be quickly released back for others to gain from it's learnings
4. IPR's that have been iterated forward in different tracks, should be encouraged to share at least part of their IPR's for other tracks to benefit from this development, making all tracks benefit from each other's developments

There are some beginnings of new solutions being created under "open innovation" umbrella, but those does not extend enough towards existing and new research based IPR direction and innovation by startups, as it's mostly focusing on "openly inventing and innovating new things", but fail to take into account the other aspects like; who's going to make it happen and how's the structure around the potential innovation? - To make it possible to understand it, share risks & rewards of the investments and efforts associated with the efforts etc.

Open innovation also focus to openly "produce new IPR", so it does not actively focus or motivate to open up existing research based IPR or opening up the current channels that continue to produce more of it - by scalable methods and fixed agreements/terms to "release or open the IPR's" in a way that relevant startups find it and take it to use.

Learning from similar problems solved elsewhere

When looking for solutions for new models, it's advantageous to look for other parts of the innovation funnel and ecosystem first and then beyond the innovation process itself for some existing approaches and models were similar problem have occurred and have been solved or radically improved, based on this there are few identified key solutions to look into.

Similar issues with solutions for new models that could work in this as well:

1. Difference in "Accelerator model" compared with traditional "incubator & seed fund model" or "business angel" -models, where the key volume & scalability driver have been from very "custom approach" to "fixed model" that is well documented for scaling.
    1.1. Success is based on fixed that can be applied in more locations due process being well documented
    1.2. Instead of taking any type of startup and to try to match with any type of investors, focus is on fixed model and then only looking for startups that fit to that model and then finding investors to connect with that are interested only from that type of startups (startup type, being limited only by it's development stage and in some cases industry focus, so still a lot of variation, but very fixed from one area "startup development phase" based criteria)

1.3. Not anything for anyone, with any type of deal model that is then negotiated, but simple criteria based “take it or leave it” model, but if take, then no negotiations but action.

2. Difference between closed data vs. open data (in databases & data)
   2.1. Data have a lot of value and the value can vary very much depending on what data it is and what uses it can be used for.
   2.2. Also depending on what new uses can be imagined and also by combining different data from different sources, new valuable data can be created.
   2.3. Specifically in public sector, where there is a lot of public data being generated by public resources, it’s logical for general public (companies) to ask and public sector to supply all the data freely for any type of use.
   2.4. But also many companies have seen that by opening data, it can create them new business opportunities, when external companies, customers etc. can develop ideas for how to use that data.

3. Difference between closed application model vs. open API model (in technical means to connect to data)
   3.1. Similar to data, but mainly about the way to access that data, ie. the options being from only selected few per request, to anyone, but needs approval, to anyone who knows and have ability to technically connect to.

4. Difference between closed source vs. open source (in software code)
   4.1. closed source software will only develop as much as the owner will invest into developing it and therefore both the speed and quality of the development is dependent on the resources applied and the views and ideas available to developing it.
   4.2. In addition it’s limited by the various selections of ideas and priorities decided by single decision making authority
   4.3. In open source that code base is shared by anyone interested to using it and can freely develop it further
   4.4. license terms define commercial use and sharing rights and obligations
   4.5. There are several open source license models available with many variations and well and models between closed and open source, like shared source, that are trying to find solutions to something that is not purely fitting to either side of open or close
   4.6. Key benefit is fixed agreement model that is same for all parties involved.

5. Difference of traditional copyright terms vs. Creative Commons license terms in creative industry.

5.1. Again similar to open source license, but in different industry. Ideas have carried much from the software side. Allows different levels of “sharing” of otherwise copyrighted by default creations, like sound, text, pictures etc. - for different purposes

6. Difference between traditional funding instruments vs. crowdfunding related models
   6.1. Traditional funding instruments are fixed and pre designed for a specific assumed needs, funding levels, terms with limited flexibility, being able to only cater for predefined funding deeds
   6.2. Crowdfunding models are based on open, accessible, transparent and market driven models, where the funding opportunity is structured by the one looking for funding and then driven by open market approach to test the appeal of funders to provide funding or presented terms

Key learnings from similar solutions

In all of these approaches, the main drivers are a) open, volume based and market driven scalable approach vs. b) assuming to know what works (or pretending or guessing what works) and then acting accordingly and limiting other options, or by just creating something for one need without having awareness, interest or care for other potential needs or use scenarios.

In case example areas (industries etc.) were applied, both models have proven cases that both approaches work and both have validated great successes in commercial terms, so it’s more about strategy choice on what approach works better in where. However all of the more open models are newer direction, with more scalability build in and are typically used and created as solutions to limitations existing in the older/closed models.

Because there are actually quite few IPR’s that are not “shareable” or “multipliable” (ie. can only have one unique thing existing, like domain name, phone number etc.), majority of IPR are actually easily sharable and duplicable if chosen to do so. So the question is, why are those not more openly shared & distributed?

The traditional thinking may say, that because limiting the sharing, the unshared IPR have more value and can “protect” from competition etc. However if we would study this closer, the real reason could be that;

1. IPR simply is not shared because many do not see additional value in doing so
2. don’t know that they could share or don’t know how to share
3. simply don’t care for other uses beyond own use

In addition to not have tools ar models available, leaving no incentives for doing extra effort to share. At the same time many would not mind, if their IPR's would also be shared to others, specially if there would be some incentives like recognition, revenue share, etc. for doing so. So the solution would simply be to make it as easy and frictionless as possible to release and share to proper channels as well as to maybe give additional motivation by some benefit if the shared IPR create some real value in one form or another.

What should the public sector do?

Similar than in "Open Data", also in the publicly funded research, IPR's should be just openly shared as "Open IPR". As in the new more open, networked and collaborative world and also considering the economic downturn, - it's not for the public interest at large to allow for "closed" or "locked" publicly funded IPR's to limit the access to publicly funded IPR's. Or to make it difficult and unscalable process or expensive/upfront investment based to access, since that in fact lowers significantly the innovation potential that the IPR's may hold. In addition public sector should act as a leader in this direction to motivate also more private sector and third sector organizations for opening up their unused IPR's as well.

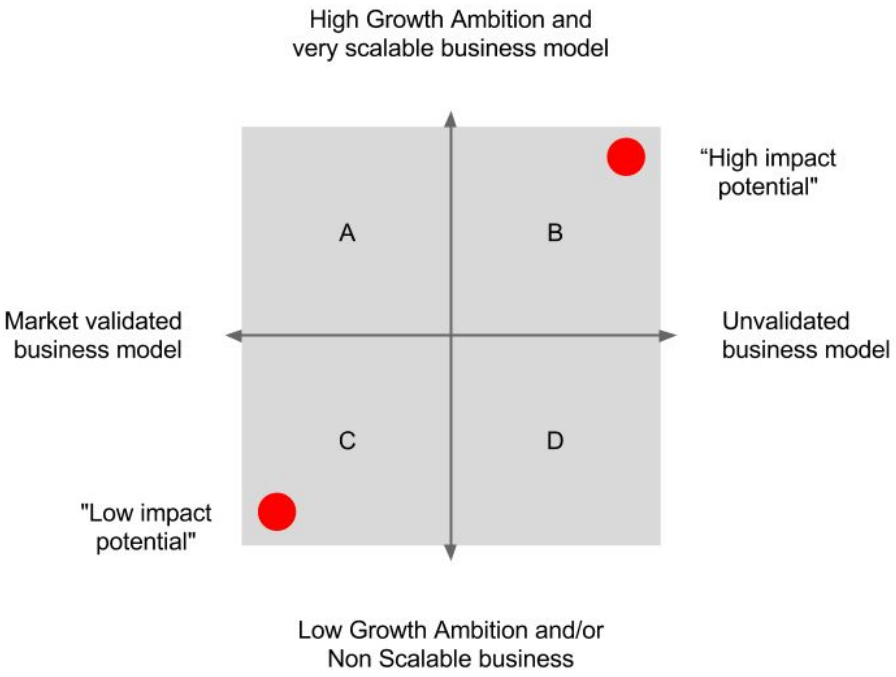
Also as the very source of many new innovations are "connecting no-obvious dots'" ie. to connect seemingly unrelated ideas, resources, etc. and already also seen in Open Data and API's, - in Open IPR, external companies, people, entrepreneurs etc. may find interesting ways to mix the created research IPR from multiple sources to create something totally different that what would be otherwise possible or even imaginable from the single IPR or research track alone. Allowing the innovators to mix various Open IPR's the same way as a chef would do in mixing various ingredients, spices and cooking methods to create new dishes.

Beyond opening up their IPR's under open IPR models, these research organizations that have and produce new research based IPR, should focus to facilitate the real life (offline) and virtual (online) matchmaking between open IPR, entrepreneurial people, existing startups and other companies interested on building innovation from these IPR's - similar than facilitating the matchmaking by startup incubators and accelerators between Startups <> Investors or between potential co-founders, but in this case between "IPR <> builders and doers".

Based on points covered, we could argue that if this is taken as a specific focus area, it would be possible to find a lot of new innovation potential and commercially viable IPR's with new innovation potential, also beyond the new one being created all the time by all the research organizations around the world.

Also as the research based IPR would be openly available, open innovation and crowdsourcing methods could also be applied to measure and rate the commercialization potential of different

IPR by the public, other Universities etc. to help bring more visibility and raise the interest of the ones with most innovation potential. In addition the quality of the research could be measured (in addition to current methods) in parts by the research innovation potential, general interest towards the research, number of new innovation tracks the IPR have been used for and ultimately for the materialized innovation and real validated value creation for the society at large (jobs, economic growth and other positive impact factors), as the ones getting access to this IPR can be made obligated to report back on the success and failures, as part of the release terms.



Use of qualification and commercialization terms

Qualifications can be used to help target the direction of the innovation if needed or to to add general limitations for who have access depending on the underlying reasons behind the IPR. But the main target being to maximize interest and tracks instead of minimize, make slow progress or prevent from someone from getting access. So with qualification model, the focus is not who should have access, but only focusing to close out those who should not (misuse, international competition, fraudulent, criminal use etc.). Naturally there could be limitations set like; research IPR that is created in EU, commercial use allowed only by companies registered (or HQ) in EU, as an example.

The commercialization terms, then focus more on things like if the innovation is successful at any level, who then can have rights to this iterated IPR and in what extent and in case success

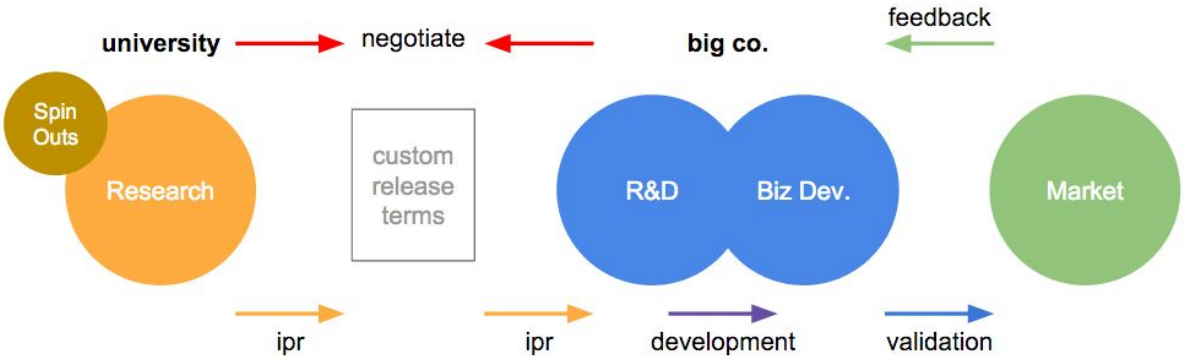
is measured in financial terms, what percentage of the financial returns of the IPR should return to source of the IPR (or others) and in what way.

The above mentioned examples at “Similar issues with solutions for new models that could work in this” - are good sources for agreement model, terms and ideas for creating the first version for “Open IPR” as well.

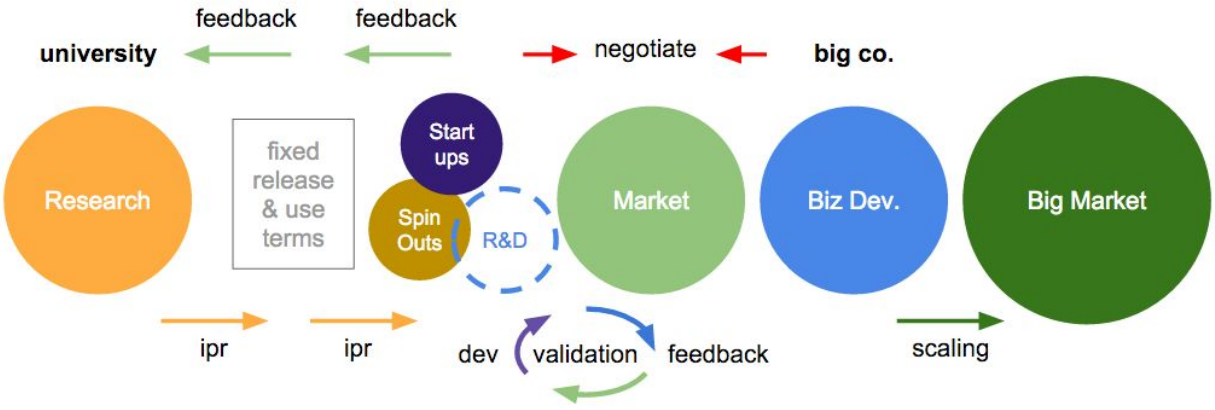
Implementing Open IPR

Beyond the openness in the IPR, further value is build by embracing, sharing, openness and digital connectivity in all levels of architecture design, strategy and implementation. Beyond concept consulting, Startup Commons provide globally connected digital platform and connectivity with startup ecosystems and large corporations innovation functions around the world, along with crowdfunding based funding sources, that are based on shared source software licensing models and open API based data distribution methods. For cost of development and best practises sharing efficiency.

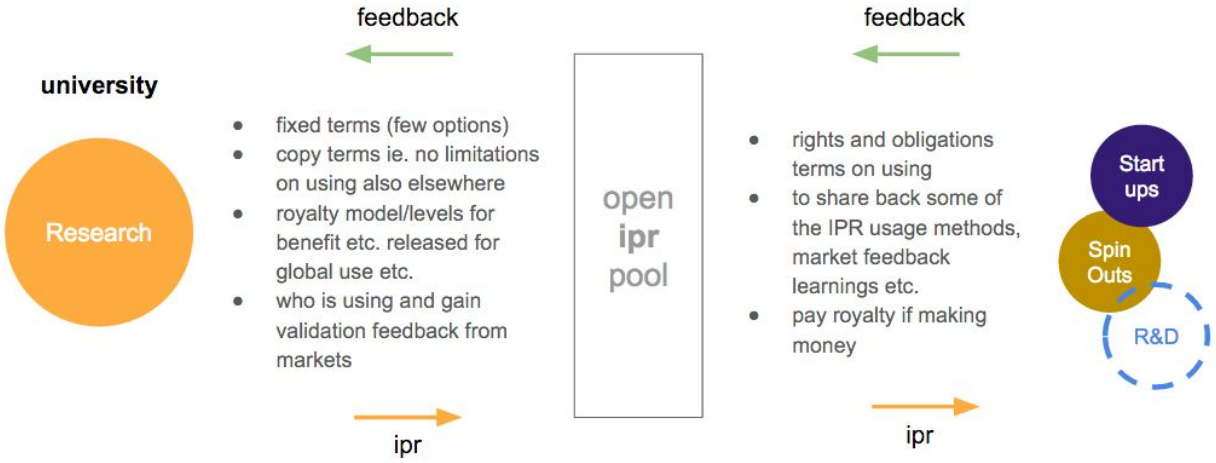
traditional closed release model



open ipr model



Open IPR core function in more detail:



traditional models:

- long stable history
- custom / flexible
- low volume, slow & closed
- few tacks from single research/ipr
- target big deals & big companies
- higher risk and high upfront cost for company
- no/low market feedback for further research
- mainly for own needs only
- limited market learning
- develops only by own effort
- limited levels of international & limited mixed verticals action/potential

open ipr model:

- new & innovative
- fixed release/use terms, no negotiations
- high volume, fast & open
- multiple tracks from single research/ipr
- target high volume, all size companies
- low risk, low upfront cost for company
- max market feedback for further research
- same format for multiple universities
- fast shared learning
- ongoing shared development efforts
- designed for global & mixing various verticals
- **not competing but complementary model**

About Startup Commons

Entrepreneurship lead innovation is positive and powerful driver to push societies forward. Startups focus this drive and energy to create and validate new innovations to find solutions for problems at various scale.

Startup Commons Global focus on scaling entrepreneurship and innovation by working with higher education institutions and governments on local and national levels to empower and enable to develop startup ecosystems with training, knowledge & resources, startup ecosystem development consulting and digital infrastructure platform to connect, measure & monitor ecosystem activities.

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