



# **Guideline on Commercialisation of Products based on Wits Research**

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# 1 Introduction

## 1.1 Innovation – driving Research with Impact

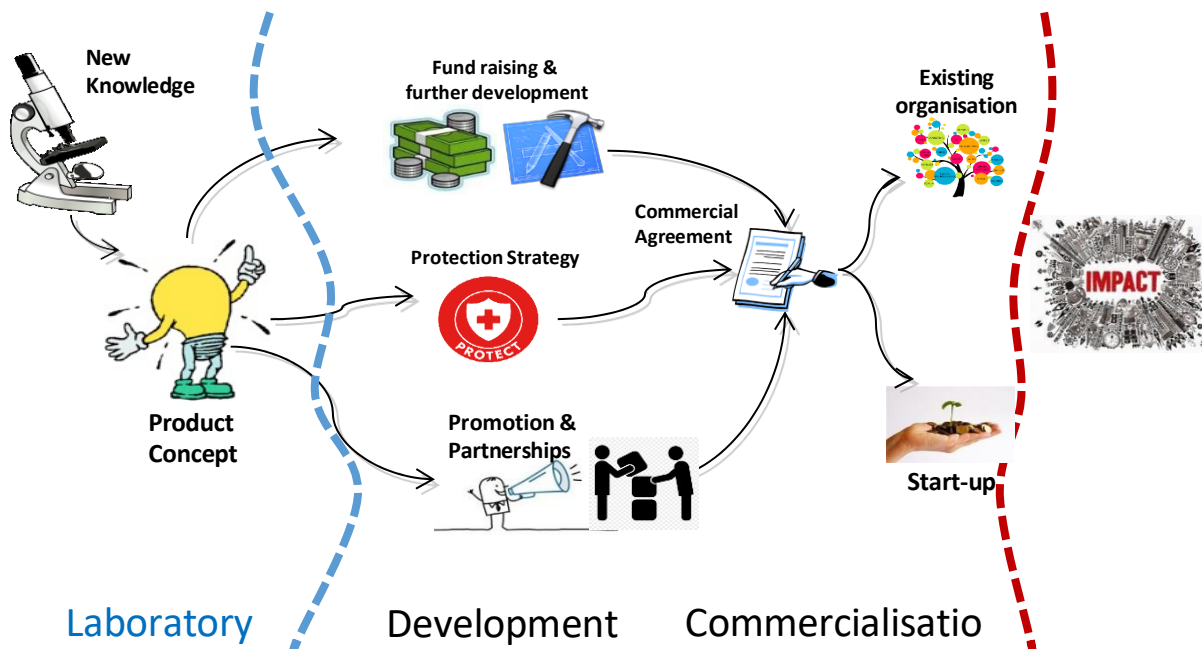
At the core of Wits 2033 is the advancement of a people-centric university with an ethos of excellence and innovation across all spheres of the university.

The promotion of innovation in contemporary society hinges on dismantling disciplinary barriers. To effectively address the significant challenges facing humanity and our planet, the University must foster a culture of multi-disciplinarity. This requires adopting multi-disciplinary approaches in organizational management structures and processes to ensure the University's success.

Our strategy acknowledges that the University's core values, including excellence, innovation, collaboration, impact, and people-centredness, are fundamental and interconnected. To remain at the forefront of our field, we must fully embrace these values in all aspects of our work.

The translation process, also termed utilisation or commercialisation, involves a number of activities/steps, as illustrated below (for a detailed discussion of this refer to the Wits Innovation Booklet - . It is important to appreciate that each innovation journey will be different. The typical outputs of these activities are either:

- a transaction with an existing organisation/company that will utilise its own, or secure additional, resources so as to invest in taking the innovation forward and delivering the eventual product/service in a viable manner, or
- the creation of a new company – also termed a spin out company – which must raise funds and secure key partnerships so as to develop the product/service and deliver it in a viable manner.



The outcomes of innovation may include:

- products and services that make a positive impact on South Africans in their daily lives, as well as the economy more broadly through the potential to increase gross domestic product as well as exports, and job creation.
- creation of entrepreneurial and other job opportunities for students/researchers;
- additional sources of revenue to the University - through collaboration with the entities involved in developing and delivering the innovations as well as through the brand positioning that comes from the University's innovations contributing to society and the economy;
- enhanced stature for the University, both locally and internationally, where institutions of higher learning are increasingly measured on the impact they create beyond excellent graduates and world class research; and
- sharing of financial success with the creators of the innovation in the University, and the University as a whole, though this is typically a modest incentive and should not be the primary driver of innovation within the University.

## 1.2 What is Commercialisation?

Commercialisation is the core part of the Innovation process that takes a product or service concept and develops it for eventual deployment in society and/or the economy. It encompasses several of the aspects of the Innovation process depicted in the diagram above, including:

- Engaging with prospective clients and users to fully understand the commercial opportunity and inform the innovation's features and business model, in the context of "Design Thinking" and "Customer Discovery" methodologies.
- Developing a "minimum viable product" i.e. simple prototype to conduct early tests in the market.
- Raising funds for development and commercialisation activities, including bootstrapping and/or grant funding and/or venture capital for a Spin-Out company.
- Developing a business model and a plan for moving to the market (a business plan)
- Marketing the innovation to attract potential partners, investors and create awareness amongst key stakeholders who may be critical to its success.

## 1.3 Why this Guideline?

The purpose of this guideline is to outline modalities of commercialisation, provide guidance on when each is a more suitable vehicle to drive success, and enhance understanding different returns structures that could be applied in negotiating an Innovation Agreement. This is intended to assist those Wits researchers/innovators who believe their research could be developed into viable products or services, on key concepts they may encounter on the commercialisation journey.

## 2 What support is available?

There is significant support that Wits provides:

- a. Access to Funding - Pre-Seed, Seed and Investment Funding is available can be secured through the Innovation Support unit at the Wits Innovation Centre (IS Unit – mandated to support the commercialisation and IP management of the University's research-based IP) and its network e.g. government funding agencies, industry partners willing to fund product/service development, including assistance in developing proposals/business cases.

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- b. Ideation and commercialisation strategy development, (this also informs whether registered protection of Innovation IP is required, which the Innovation Support unit assists with), through formal programmes e.g. Prospector@Wits course, as well as informal mentoring/coaching and other training in key skills areas.
- c. Guidance throughout the commercialisation journey in the form of “virtual incubation” is provided through the IS Unit – through various steps in the journey, unexpected developments (which are very much expected!), as well as building relationships and negotiating win-win commercial deals.
- d. Assistance with establishing networks, partnerships, etc. in a manner that optimises the chances of success whilst protecting the Innovation Team’s, and Wits’, interests.
- e. Identifying and engaging/contracting capabilities required to augment the team.
- f. Legal support, including negotiation and drafting of legal agreements such as non-disclosure, funding/investment, commercialisation and similar IP transaction agreements.

The above assistance is available through the Innovation Support unit in the Wits Innovation Centre, who are mandated to provide the support, manage the Innovation Fund, etc., generally at no charge to you.

### **3 To Spin-Out or not to Spin-Out**

When considering how to commercialise the outputs of research, there are two modalities:

- Partner with established companies who wish to access the underlying IP and directly develop and commercialise it.
- Form a new company (NewCo), either directly or in partnership with an investor/partner, as a spin out from the institution.

For those considering starting a company based on Wits research, it is recommended to read the specific guideline on Wits Spin-Outs which will help you drive the journey and get maximum support from Wits.

## Appendix A: Considerations for creating Spin-Outs of partnering with existing organisations.

The following table summarises considerations apply when selecting the commercialisation modality/deal structure.

	Existing Company	NewCo
<b>Team aspects – possibly the most important critical success factor for a Spin-Out</b>		
<b>Experienced management team and CEO</b>	Little or no experience can be sourced.	Prospect of attracting an experienced, entrepreneurial, and highly professional team is high.
<b>Relationship between university and spin off during early development</b>	Non-existent / uncertain	Good relationship
<b>Experience in relevant sector</b>	Requires little knowledge of sector and business model from support offices or researchers	Requires some knowledge of sector, market trends, appropriate business model & ability to guide team.
<b>Intention of the academic/research staff</b>	Researchers keen to continue with (typically new/other) research	Interest and skill set for inventors to remain directly involved in the development and commercialisation
<b>Commercial Opportunity</b>		
<b>Size of the market</b>	If too small to sustain spin-off	For large markets i.e. good scaling prospects
<b>Competition / New markets</b>	Established companies with strong market share	Niche / new market with few established competitors
<b>Has market intelligence been conducted or potential customers contacted</b>	Incremental changes to existing technologies	Commitments to buy
<b>Route to market &amp; Business Model (including supplier arrangements, manufacturing capability and distribution channels)</b>	In place through existing company	Good prospect to establish elements of model through networks and partnerships
<b>Marketing platform required</b>	Marketing infrastructure already exists in existing company	New technology, requires creative mechanisms for marketing

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<b>Development risks</b>	Large/unknown risks – long path to development	Manageable risk. Development path well understood
<b>Investment capital needed</b>	Challenges/ uncertainty whether capital can be raised	Scaling potential is likely to attract risk capital Availability of risk capital
<b>Innovation/Technology</b>		
<b>Scope &amp; strength of the innovation's underlying IP</b>	Narrow – part of a larger system	Radical technology, broad platform, multiple uses.
<b>Availability of technology development resources</b>	Specialist resources concentrated in existing company(ies)	Resource requirements available and/or sufficiently generic and geographically close by, so can be easily sourced to lower risk of start-up
<b>Other</b>		
<b>Innovation Strategy of Institution: Risk appetite of Institution balanced against likely level of impact/returns</b>	Prefer arm's length relationship with predictable royalty stream, low to medium risk of failure of product, prepared to accept lower returns through royalty	Potential of future profits are estimated to be much greater, though risk of failure is higher.

## Annexure A: What are Royalty and Equity Returns Structures ?

The following table unpacks the advantages and disadvantages of particular returns structures – being royalty or equity - in the two different modalities of commercialisation unpacked above. The returns structures do not consider outright purchase of IP through an up front payment, as this is only feasible in a few situations : it is not the best returns structure for Spin-Outs which should invest their efforts and capital into developing the business, and if the modality is to partner with an existing entity that can afford to purchase the Innovation IP outright, it typically has the resources to do so and the negotiation of an Innovation Agreement is fairly straightforward.

It should be noted that the returns structures assessed below do not include debt. Debt capital is typically an option where the Institution provides a cash injection to a spin out, not just access to the IP. It is used where the company is unlikely to get short term debt capital from banks due to its risk profile, and where the institution is prepared to take such risk. It is usually provided on very favourable terms that have regard to the development stage of the start-up and its need for liquidity until it can generate at least a modest profit.

The analysis below is drawn from the experience of the Innovation Support team, together with best practices from local and international institutions. Locally inputs were obtained from Innovus/Stellenbosch University, as well as Bristol University in the United Kingdom. Stellenbosch has spun out 19 companies, and uses equity as the dominant returns structure for these companies, unless there is highly compelling reason to consider another approach.

	Existing Company	Spin-Out (new company)
<b>Royalty</b>	<u>Pros:</u>	<u>Pros:</u>
	Arm’s length arrangement requiring little input from Wits.	Same as for existing company
	Passive stance, collecting and distributing royalties when due.	Can be useful when not all inventors/originators are interested in taking an equity stake, however the same disadvantages and complexities apply as is articulated below.
	<u>Cons:</u>	<u>Cons:</u>
Limited influence over direction taken e.g. extent of effort to commercialise technology	<i>A critical disadvantage is that it is extremely difficult, if not impossible, to structure a royalty mechanism to mimic equity:</i> <ul style="list-style-type: none"> <li>- <i>Royalty does not dilute in capital raising. This issue especially problematic in high tech, early stage start-ups that are likely to go through several rounds of funding as</i></li> </ul>	



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		<p><i>they develop to a point of break even, and seek to expand beyond that. It is a particularly acute barrier in South Africa where currently the appetite for very early stage, high risk Institutional spin outs is extremely low.</i></p> <ul style="list-style-type: none"> <li>- <i>A straight royalty can impede growth by taking cash out of the business during its critical early stages, leading to a need to raise more capital which further dilutes shareholders with no impact to the Institution. Royalty holidays and deferments can be structured, but these can become complex.</i></li> <li>- <i>A royalty is typically calculated on sales of products embodying the IP that has been licenced/assigned. It becomes increasingly difficult to determine when the investment into improving the product has in effect diluted the IP contribution of the Institution to zero. This can dis-incentivise investment into that product range after a few years.</i></li> </ul>
	Returns typically lower :- lower risk and commensurate reward , as all risk passed on to company, and upside limited to product based on IP assigned/licensed.	All cons under existing company
	No returns if company divests or product fails	
	Institution has no asset to trade unless nature of deal is a non-exclusive licence, and royalties may take some time to flow.	
<b>Equity</b>	<u>Pros:</u>	<u>Pros:</u>
	Likely the same as for start-up, however we have no knowledge of such deals being done except where the existing company is in fact in early stages of development i.e. a start-up.	Higher risk therefore higher upside potential.
		Direct sharing with no upside limitation and to reaffirm: sharing in upside irrespective of whether actual IP licenced/assigned by Institution is successful.
		Creates a clear mechanism for inventors/originators to participate in the company, through taking up their share of the Institution's share in accordance with the relevant policy, and thus incentivises them more directly to play an active, supportive role in the unfolding business endeavour.
		Alignment of shareholders which all benefit together, and incentive to support company.

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	<p>Greater impact potential beyond financial returns :-</p> <ul style="list-style-type: none"> <li>- more tangible job creation,</li> <li>- contributing to growing an innovation eco-system,</li> <li>- creates directly productive exit for students and researchers interested in moving into industry.</li> <li>- creates visible role models to inspire higher levels of product/service oriented research, leading to a virtuous cycle of innovation creation within Institution and its broader environment.</li> </ul> <p>These types of impact are critical in the context of South Africa’s economy and the National Development Plan</p>
	An inherent attribute of equity is that there is no drain on cash as the reward to shareholders is either dividends, typically only declared when the company has the retained earnings to afford it, or sale of equity, which does not impact the company’s financial position.
	Influence in strategic direction of company especially if shareholding affords the right to appoint members to the Board of Director.
	The participation of the Institution, albeit as a minority shareholder, enables leveraging the institutional brand to the benefit of the company when raising funds and developing markets, and similarly builds the brand/standing of the Institution as being entrepreneurial.
	Equity is an immediately tradeable asset, and can yield returns through sale of shares sooner than royalty stream.
<u>Cons:</u>	<u>Cons:</u>
Same as for Start-up, however see comment above.	Higher risk of no return, since start-ups are inherently high risk
	Potentially greater management/support required from Institution especially in deal structuring and start-up operationalisation stages. The management post operationalisation is dependent on equity % - the lower the equity percentage the more passive the role of a shareholder e.g. no board representation.
	Tensions may arise during capital raising if some shareholders do not have the ability to participate in a rights issue.

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Of interest is the returns structures used in a mature spin out ecosystems, such as that in the United Kingdom. Two thirds of 16 United Kingdom universities whose policies and practices were assessed in a Bristol University internal report, (including institutions with a long track record of spin outs such as Imperial College and Manchester) take an equity position as the default in return for support provided to the spin out, as well as the licencing/assignment of the IP. A small proportion take an equity stake AND a royalty. These are aggressive returns structures which ensure a non-dilutable return from the royalty, together with a share of upside created in the spin out as a whole. It is justified given the extent of support services and capabilities offered beyond the IP transaction itself – extent of incubation, back-office accounting and governance/company secretarial support, etc. These institutions furthermore appear to justify this in terms of the value of the brand of such institutions in these spin outs, the brand being supported by a track record of hundreds of spin outs over the past 20 years. This trend may emerge in South Africa over time, and there may well be instances where such structure is justified even before Wits builds up a similar spin out track record. Unfortunately, there is a dearth of early-stage capital with any appetite for investments into high tech, high risk, early-stage start-ups in South Africa. In this context, Wits' approach is that the returns' structure should be sufficiently favourable to crowd in investment, without which there will be no spin out. Once a healthier early-stage venture capital ecosystem emerges, this approach can be re- assessed.