

North-West University Draft Revised Strategy for Research and Innovation: 2015-2025

It all starts here in Research and Innovation

Foreword

The 2015-2025 North-West University (NWU) strategy for Research, Innovation, Community Engagement, Internationalization and eResearch (RICEleR) states the following: “The North-West University (NWU) has an ongoing strategic planning culture; strategy is to be constantly refined through engagement to ensure relevance to institutional thinking and alignment to the broader institutional strategy”. At the outset, it is important to mention that the revised NWU RICEleR strategy should not be seen as a “newly written strategy” of the carefully developed and consulted initial strategy but rather it should be viewed as a shortened, simplified, consolidated, focussed and updated version of the initial strategy. Against this background, the content of the revised strategy is largely the same as that of the initial strategy to avoid re-inventing the wheel. The initial five strategic elements (research, innovation, internationalization, community engagement and eResearch) have been consolidated into two elements, Research and Innovation. The initial pages which covered a lot of background information on future thinking were left out in the interest of shortening the strategy. The NWU Success Model and list of research entities have been moved to the addenda section. Thus, the revised strategy is a summary of the initial longer strategy with some additions which strengthen the objectives of the initial strategy. All the eight faculties and the research and innovation support departments provided input on the revision of the strategy. My team and I have also ensured that the strategy is aligned to the relevant institutional strategies (the NWU Strategy 2015-2025: It all starts here) and institutional structures that were adopted after its adoption in 2015 as well as relevant national and international strategies. The revised strategy was also benchmarked with that of other universities. As the new DVC for Research and Innovation, I used the process of revising the strategy to check where we currently are, the strengths and opportunities we can build upon to realize our successes, the weaknesses that we need to address in order for us to be where we intend to be in the next five years. I have no doubt that the strategy revision process has been equally beneficial to the rest of the research and innovation leadership at NWU.

Prof Refilwe Nancy Phaswana-Mafuya
Deputy Vice Chancellor: Research and Innovation

1. Background of the initial strategy

It is important to highlight where the initial strategy emanated as outlined in the strategy document. The strategy was derived from the NWU Success Model and its set targets. The model provides a clear view of what the university regards as a successful destiny for the future. The strategy was also informed by a variety of past strategic initiatives, benchmark indicators that are regularly updated, existing success stories as well as the following:

- A self-evaluation Report to the External Evaluation Panel on Research, Innovation and Community Engagement at the NWU, June 2012
- A Report by the External Evaluation Panel for NWU, 2012
- The NWU Research Indaba and Strategic Planning: 4th February 2013: A New Emphasis on the NWU Management of Research and its Responsiveness to Current and Future Challenges in Research
- The Institutional Strategy for Research, Innovation and Community Engagement, 2014 – 2020 (the current reference strategy)
- The 10-year post-merger evaluation of the NWU
- The April 2015 open discussion on Research Strategy
- The NWU Strategy 2015-2025:
<http://news.nwu.ac.za/sites/news.nwu.ac.za/files/files/Institutional%20New%20s/NWU%20strategy%202015-2025%20English.pdf>
- The NWU Success Model (Addendum A)
- Strategic workshop of 16/17 July 2015 to align Research and Innovation to the Success Model
- Benchmarking with strategies of selected South African universities
- White Paper for Post School Education and Training 2013
- The National Development Plan 2030
- The National Research and Development Strategy 2002
(<http://www.dst.gov.za/images/pdfs/National%20research%20%20development%20strategy%202002.pdf>)
- The Ten-Year Innovation Plan 2008

It should be noted that this strategy document is not the corporate strategy of the NWU, but a strong input into it, focusing on Research and Innovation. The NWU strategy statement as outlined in the 2015-2025 NWU strategy is: “To transform and position the NWU as a unitary institution of superior academic excellence, committed to social justice”. The NWU dream as outlined in the success model is “to be an internationally recognised university in Africa, distinguished for engaged scholarship”

2. The Research context

The White Paper on Post School Education (DHET, 2013: 34) states that: “**Research and Innovation are integral parts of the work in universities**”. However, there are various challenges that universities are faced with in as far as research and innovation is concerned. The research challenges include: under-investment in research and innovation, lower numbers of doctoral graduates, declining size and increasing age of the workforce actively engaged in research, the paucity of effective training programmes, unattractive career-pathing in the sector, the combined burden of teaching and learning and research, limited capacity to

increase the production of properly trained professionals and to train and inspire a new generation of researchers, slower growth in publications among female and black authors while the proportion of older authors has been rising, grossly insufficient support for research professorships and training fellowships (DHET 2013, NDP 2030). The North-West University is not immune to these challenges. Coordinated support for the training and development of young researchers is needed. Attention must be given to racial and gender imbalances, and strong intellectual leadership must be built. Retention of highly skilled researchers is critical in order to transfer skills to the younger generation, among others. Furthermore, the NWU's administrative and financial administrative arrangements seem to hamper cross-faculty, cross-entity and in some cases cross-university collaboration. The NWU also has to provide for adequate ethics care, including organisational arrangements and training of researchers.

Intensification of our research and innovation activity is key to realising our dream by moving from being a balanced teaching and research university towards a more research-intensive institution. We strive to be an internationally recognised university in Africa, distinguished for engaged scholarship, social responsiveness and an ethic of care. The objective is to make an impact in research focus areas, attract enhanced funding and the best research and innovation staff, and take advantage of commercialisation opportunities. Our research and innovation model requires the NWU to focus on specific themes, which we develop as areas of research excellence for the university. This method is likely to result in the delivery of research and innovation projects with greater impact. Research and innovation foci of excellence are reviewed regularly to realise opportunities emanating from new areas identified as priorities.

The NWU has achieved substantial success in research, although there is still room for improvement. We have made progress in achieving better international recognition by obtaining illustrative ranking and rating scores. The University is currently listed as #801-1000 in the Quacquarelli Symonds Global World Ranking. Concerning rating, in 2015 the North-West University was awarded three stars which meant that it was a nationally recognised leader at the time. In 2018 the NWU has been awarded an overall four star rating, five stars of which were awarded in the categories of teaching, employability, innovation, and facilities which indicate that we are a world leader in these areas. In the South African context, we are comfortably in the top 10 and occasionally nudge into the top five, depending on the ratings criteria. We have widened the base of active researchers. We have attracted leading international scientists as extra-ordinary professors with great success. The number of international postgraduate students has also increased significantly.

Research continued to flourish at the NWU, and the challenge is to sustain these outputs in a context of organisational change and development. As our structure becomes embedded and see growth in cross-campus research collaboration, we should stabilise and improve even further from an excellent base. The NWU proved to be very successful in terms of National Research Foundation (NRF) ratings. However, changes to the NRF funding models continue to negatively impact all rated researchers. We will have to find new ways to support our researchers. We will also have to be very careful how we prioritise research funds.

Significant international agreements were developed, including an increasing number of joint degrees with prestigious universities. This is to be welcomed. Focused internationalisation is part of our success model and needs to be strengthened. We have made significant long-term investments in state-of-the-art research infrastructure. We are not attracting sufficient international research funding, yet. We will be strengthening this. Our well-qualified postdoctoral staff in some field is an asset.

3. The Innovation context

It is widely recognised that, while South Africa has a strong culture of innovation, underpinned by a well-established research base, we do however, fall short in transforming this innovation and research into commercially-viable products and services and the creation of new industries. This “*innovation chasm*” has been identified in the national research and development strategy as a key challenge facing SA’s *National System of Innovation* due to:

- *“A lack of appropriate skills / expertise / experience and understanding of commercialisation;*
- *A lack of funding for commercialisation;*
- *A lack of vision in terms of commercialisation for development and social/inclusive development;*
- *A lack of university involvement with industry or industry-led R&D*
- *A very narrow vision or focus on innovation, leading from science and engineering and technology / information technology, and that excludes social innovation and innovation for development or grass-roots innovation.”*

The National Department of Science and Technology (DST) has developed several instruments to bridge this *chasm/gap*, e.g. the Technology Innovation Agency (TIA) and the National Intellectual Property Management Office (NIPMO). However, in terms of tangible outputs such as biotechnology firms, employment, patents and commercialisation revenues, nationally, limited success has been achieved.

The DST considers the lack of projects that enter the innovation pipeline as one of the reasons for limited growth and success, and that the pipeline is for all intents and purposes still fairly “empty”.

From a government perspective, TIA and NIPMO were mandated to “grow” the pipe-line inputs through support of:

- *“Basic and clinical market-driven research*
- *Identification and protection of IP emanating from the research*
- *Establishment of a proof-of-concept facility to assess IP for commercialisation potential*
- *Assistance with commercialisation including market assessment, funding, marketing, legislation, in- and out-licensing, etc.”*

An improvement in innovation is also evident (See Addendum C for a detailed overview). The NWU innovation landscape is founded in the research themes and research entities. That is where research takes place and from where the knowledge originates to fuel innovation through this seamless interface model. Innovation includes public-private partnerships to support sustainable economic development in the North West Province.

The university has established a Technology Transfer and Innovation Support Office that is responsible for promoting innovation. Innovation success is measured against the number of disclosures and patents filed and registered. It is further informed by license agreements, income from royalties and invention-based product sales. A critical indicator for innovation is the number of independent, associated or subsidiary spin-off companies. We have experienced technology transfer, innovation support and commercialisation staff. A positive attribute is that each research and innovation project has a designated director leading the research team.

NWU innovation is driven through the Innovation Highway. This “highway” links the three campuses of the NWU including a corridor of local business and industry activity and community needs, in addition to support innovation generated by our region’s business, commerce, industry and community at large, and incorporates the NWU Government’s Villages, Towns and Small “Dorpiess” (VTSD) strategy. The distributed campus model offers significant opportunities through regional representation and has the potential of a diversified funding base. This include potential funding support from both the North-West and Gauteng

Provincial Governments, by following a Quadruple Helix Model that include government, commerce & industry and the community, in parallel with a bottoms-up approach, vs. the traditional top-down approach.

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The main innovation achievements in this regard have been listed in the addendum.

Quote from the summary of the report:

"The single university that stood out the most was North-West University which was not in the top five producers of research but was in the top five patent filers. North-West University had a filing strategy of more patent family members per invention than other university and hence their published patent output is higher, helping them to attain the number one position regarding innovation. This is a significant observation and something which clearly is different to other universities. North-West is confident in their IP portfolio and is taking it to the most relevant economies for commercialisation." "The visualisations clearly show that each university is producing high-impact research with both local and international partners. Some universities such as North-West showed a high impact with international partners, ... "

Our objective remains to excel in research and innovation, which is confirmed by this strategy.

3. Strategic Objectives for Research

For NWU research to assist in the realization of the success model, the strategic interventions outlined below are required. Please note that internationalization and community engagement have been incorporated in research and innovation rather than being written as separate sections. The proposed strategic interventions seek to close the gaps that have been identified over time in existing strategies and new ones that emerged from the strategic alignment taking the Success Model into consideration.

Strategic Objective 1: Create and maintain a conducive, sustainable and supportive environment to advance research excellence

The environment in which research and innovation is conducted within the wider NWU is of utmost importance as it enables research to be conducted without barriers, and also plays an important role in the attitude and commitment of the research community to adopt the proposed strategy. To this end, the following strategies are of special importance:

- Implement appropriate policies (e.g. recruitment, promotion, retention, etc.) as well as management systems (e.g. performance, career development) that work effectively;
- Simplify research support models and structures for optimised processes;
- Apply the Research Infrastructure strategy;
- Maintain a record of research infrastructure for more effective use of existing equipment and to facilitate better allocation of available strategic funding;
- Adopt, grow and maximise eResearch practices;
- Improve working of Research Ethics Committees to reflect our new model of one faculty one dean, and develop of SOPs for all ethics committees;
- Ensure efficient finance and HR support to researchers and research entities as part and parcel of proper resourcing of research;
- Maintain excellent library and IT facilities;
- Incentivise high performing researchers in sustainable ways, using relevant criteria that may include NRF-rating, publication metrics, and other metrics or criteria appropriate to non-traditional research output, such as innovations or creative outputs;
- Create a research and innovation environment that attracts and retains highly skilled and rated researchers;
- Develop appropriate ways to gauge quality beyond quantity and metrics;
- Utilise post-65 appointments to retain knowledge and provide mentoring to young and upcoming researchers;
- Increase local extraordinary professorship appointments who are in Science Councils and related institutions to encourage research collaboration and mentorships;
- Support emerging and established researchers through continued researcher development programmes and deliberate strategies;
- Foster a culture of research and innovation that is embedded in an ethos of giving and caring, including concern for people and environment.
- Increase the level of support for international funding applications in the Department of Research Support
- Streamline and right-size the structure to optimally support the strategy;
- Development of a support structure for the DVC:R&T;
- Ensure that adequate numbers and skills in research support staff, including administrative and technical staff (technical workshops and instrument analysts);
- Maintain an effective postgraduate student management system (PGSMS);
- Maintain an effective Research Management System (InfoEd);

Strategic Objective 2: Improve our reputation and perception

- Fostering good relationships with the digital and printed media to promote NWU research;
- Communication of research to a much wider audience, e.g. Industry partnerships, public-private partnerships, internal research and innovation conference, research and innovation public lectures, etc.
- Appropriate, targeted marketing of research expertise, innovations and achievements, in collaboration with researchers and innovators;
- Academic excellence
 - Promote publications in nationally and internationally accredited high impact factor, open access, indexed journals (focus on both quality and quantity);
 - Encourage publication of nationally and internationally accredited books.
- International marketing (also in SADC countries)
 - Coordinate international exposure of research and innovation at the NWU;
 - Make NWU experts visible in the international arena;
 - Support and expand regional leadership in SADC and Africa more generally.
- Work towards obtaining a public sector reputation of a collaborative university
 - being the preferred partner for public projects, aligned with national imperatives;
 - having a clearly distinguished role in national development projects;
 - maintaining a good relationship with regulatory bodies and showing exemplary compliance with good practice regulations, both official and informal.
 - being a national debate and policy/regulatory influencer, by i.a. participating actively and constructively in policy-making and consultation processes;
 - being a public opinion shaping, responsive and accountable valued national, regional and local asset;
 - being a prime example of true transformation and nation building;
 - providing value for money.
- Become the research destination of choice for researchers from the region and globally.
- Promote the visibility of our research and researchers through:
 - Participation in BRICS and SADC networks;
 - Participation in national and global research networks, e.g. NWU researchers to serve in international scientific advisory boards, international editorial boards of peer-reviewed journals, review panelists for international funding agencies and science networks such as ASSAF, AAS, etc.
 - Participation in national and international fora such as conferences;
- Continue participating in appropriate international rating and/or ranking exercises
 - Increase national and international profile of NWU - impact, innovation and reputation (QS rating and international university ranking)
 - Ensure that the reporting system is geared to provide data required for international ranking and

rating

- Promote participation of researchers and post-graduate students in award opportunities, e.g. NRF awards, NSTF awards and young scientists awards;
- Funding
 - Find additional income with which to improve and enhance existing levels of international activity, foster new relationships and improve its infrastructure and facilities;
 - Promote participation in international funding opportunities, e.g. HORIZON2020;
 - Align internal research and innovation funding with strategic objectives, and develop transparent criteria for the award of internal strategic funds.

Strategic Objective 3: Strengthen international research and impact of research to position NWU as an internationally recognized university of consequence

- Establish and maintain a research and innovation intensity to make a notable international impact;
- Develop a culture of international research collaborations in terms of South-South, North-South and BRICS, i.e. facilitate international collaborative research (both bottom up and top down approaches), e.g. scientist to scientist collaborations, bilateral and trilateral research agreements and consortia;
- Develop and promote collaborative research programmes and scholarship with relevant international research groups undertaken by research champions that are conversant with both national and international standards of excellence;
- Attract excellent academics and postgraduate students, i.e. marketing and promoting the national and international profile of the NWU both locally and abroad;
- Increase the number of international post-doctoral fellows;
- Attract international students at postgraduate level;
- Promote and encourage extraordinary professorship or visiting professorship appointments to leverage new skills and expertise to researchers and research entities;
- Promote and support international PhD co-supervision with leading international researchers and scholars;
- Encourage co-authorship of papers with international partners;
- Promote and support exchanges of International staff and postgraduate students;
- Increase percentage of both staff and students who are internationally knowledgeable, innovative and cross-culturally sensitive;
- Encourage researchers to use sabbaticals to spend time at international institutions as a means to foster collaborative relationships;

- Capitalise on intellectual property opportunities to preserve and improve the economic, scientific and technological competitiveness of South Africa;
- Capitalise on international funding opportunities, i.e. diversification of international research funding; prompt identification of available opportunities, secure International funding contracts;

Strategic Objective 4: Maintain and improve research staff capacity development

- Staff
 - Encourage academic scholarship excellence;
 - Consider market related remuneration to ensure high quality appointments and retention;
 - Improve the NRF rating profile of researchers (specifically from C to B and A) through increased international exposure of researchers at a high level;
 - Promote and enable sabbatical research;
 - Provide researcher career development support, e.g. faculty research and mentorship programme;
 - Exploit national and international capacity building opportunities;
 - Enable researchers to be mentors to postgraduate students;
- Post-graduate students
 - Maintain a productive researcher to student ratio;
 - Grow postgraduate study and support postgraduate student development, e.g. Ensure set enrolments targets for postgraduate students are met;
 - Improve postgraduate student completion and throughput rates through appropriate introductory courses, mentoring opportunities and post-graduate supervision capacity building ;
 - Encourage inbound and outbound postdoctoral experience;
 - Encourage academic staff without PhD to complete their PhDs.

Strategic Objective 5: Encourage research that reaches across, or beyond, disciplinary boundaries (e.g. inter/multi-disciplinary and trans-disciplinary research)

- Development of a culture of interdisciplinary, multi-disciplinary and cross-disciplinary research collaboration
 - Through across campus and faculty seminar series;
 - Through encouragement and support of multi-disciplinary research funding applications;
 - By encouraging mutual understanding between researchers from different disciplines, e.g. engineering and social sciences;
 - Conceptualisation of broader research programmes that have a wider impact and require participation of researchers from different disciplines to address critical elements of our countries development programmes,
- Develop a management strategy for enabling interdisciplinary research projects that stretches across multiple research entities, faculties, campuses and universities;

- Review current research subsidy and credits models that hamper multi-disciplinary research between different focus areas and cross faculty and campus collaborations;
- Support researchers by providing technological support in terms of data storage, data management and data analyses infrastructure as well as the necessary tools, software and services to facilitate collaborations.

Strategic Objective 6: Continue to use focused research/innovation entities model to advance research excellence and national and international relevance at NWU, while addressing identifiable limitations in the model

It is the policy of the NWU that research be conducted in identified *Research Entities*, which promote innovative research and innovation for the economic development of the country, the continent and the world according to identified *Research Themes*. The model of focused research entities has certainly contributed to developing research at the NWU. However, the current research subsidy and credits model lead to “competition” between entities which impedes collaboration between the different entities. The allocation of subsidy and other funding will have to be redesigned to encourage cross- and multidisciplinary research across research entities. Therefore, the following steps are aimed at improving the effectiveness of the current research entities model:

- Ensure that entities are correctly placed and focussed through a process of informed collaboration with the members of the different entities;
- Maximize the performance of current Research Entities as listed in the table in the addenda in terms of research excellence (academic and innovation outputs, community engagement) and alignment to national strategies ;
- Encourage collaboration and partnerships between research/innovation entities by breaking down the limiting barriers such as the subsidy and incentive models;
- [Align processes and procedures regarding entities and faculties across the board, i.e. hold open discussions across faculties about all the possible entities in each faculty and research that is taking place outside entities and discuss the alignments thereof in terms of reporting, incentivizing and rewarding outputs](#)
- [Establish agreements between all NWU approved research entities and the respective faculties in terms of quality assurance of Higher Degree proposals; appointment of examiners for students in research entities within a given faculty; compliance with the minimum requirements for research and postgraduate management; subsidy and incentivization for both research entities and faculties in accordance with contributions made](#)
- Ensure that each research director has adequate support for the administrative and financial functions of the entity, in particular where the entity has cross-campus membership;
- Enable research directors to perform the duties of director while maintaining his/her own research activities, by minimising other administrative and teaching-related activities;
- Ensure that both researcher initiated and project development research opportunities within the recognised research entities;
- Create a record of linkages of current research entities to national imperatives and strategies as well as that of the SADC region;
- Radically expand Research Chairs and research assistance, e.g. Establish

industry funded research chairs and Centres of Excellence;

- Increase participation in initiatives such as SARChI and CoE Programmes of the DST/NRF.

Strategic Objective 7: Improve engagement of communities in research

- Conduct engaged research - assess and understand the needs for enablement in communities;
- Align research themes within research entities with specific community needs;
- Develop research projects where communities participate as partners in research - participation, involvement, feedback, interactive and consultative activities;
- Ensure meaningful and practical dissemination of research findings to participating communities;
- Encourage and support practical implementation of research findings to have a positive impact in local communities;
- Ensure a proper alignment of community engagement activities with research (research in application, applied research, community-based research) to achieve sustainable community development;

4. Strategic Objectives for Innovation

For innovation at the NWU to impact on realising the Success Model, the following strategic interventions are required:

Strategic Objective 1: Develop culture of innovation beyond technology

To explore innovations in social sciences should be included

- Broaden the view of Innovation to be all inclusive of all disciplines and not only technological innovation;
- Move beyond technological innovation; innovation highway to include social innovations as well and work with all faculties;
- Establish a forum where inventors/ innovators, funders, provincial government and spin-off companies get together to discuss mutual challenges, break-throughs and opportunities;
- Prioritise innovation and SET presence and content on the Mahikeng and Vaal campuses.

Strategic Objective 2: Develop a career path for innovators/inventors

- Cultivate a generation of researchers that think innovation and commercialisation and embrace the culture of innovation;
- Recognition of innovation in promotions criteria
- Conduct capacity building activities in innovation

Strategic Objective 3: Stimulate innovative research into commercialisation

- Increase number of disclosures from new inventions and novel research results and/or applications;
- Create and successfully implement new ideas and interventions of tangible outcomes with social and or financial value;
- Encourage and reward research and entrepreneurship appropriately.
- Continue to protect intellectual property (IP) through patenting, trademarking and copyrighting;
- Maximise licensing of IP;

Strategic Objective 4: Develop, maintain and strengthen spin-out companies

- Comprehensive review of spin-off companies;
- Develop plan of action based on the comprehensive review, maximizing on strengths and opportunities;
- Accelerate the spinning out of entrepreneurial companies in consultation with research entities and researchers involved;
- Increase Incubation/entrepreneurship programmes;
- Increase the incubation capacity at the university;
- Student spin-off companies and Incubation/Entrepreneurship programmes to be developed and prioritised.

Strategic Objective 5: Strengthen commercialisation

- Identify community inspired innovation and commercialisation opportunities;
- Simplify the commercialisation model: the proposed redirection of licensing of know-how/IP to spin-off companies rather than equity in spin-off companies, to be prioritised and set as future goal;
- Support the commercialisation processes;
- Drive regional innovation forums such as the North West Innovation Highway;
- Ensure that there is integration in the innovation pipeline.

Strategic Objective 6: Encourage consolidation of research and innovation

- Offer clients a blended full solution, which includes research, innovation, community engagement and training;
- Enhance / enrich research to face real world challenges / industry needs, and communicate these / find ways in which to activate and fund / co-fund these with external funds, within the current R &I model;
- Narrow the boundaries between research and innovation by an integrated model of knowledge flow;
- Take flagship research projects and successes to market in the shortest possible time;
- Pursue the complete value chain (innovation pipeline) from research and development through innovation and industrial design to demonstration of prototypes and piloting to full commercialisation;
- Introduce and scale up synergies in finding the same markets for research and innovation.

Strategic Objective 7: Ensure a proper alignment of community engagement activities with innovation

- Establish of community businesses to achieve sustainable community development;
- Involve communities in inclusive innovation for development.

5. Conclusion

All the strategic interventions listed under each of the strategic elements are necessary in contributing to the Success Model, which must remain a dynamic and evolving model over time, optimized to address the fast changing macro environment of the university.

The strategy should constantly be refined through engagement to ensure relevance to institutional thinking and alignment to the broader institutional strategy. This requires that a culture of mutual respect, trust and collaboration be developed between all stakeholders in research and innovation.

Acknowledgements

Acknowledgements regarding revision of the existing strategy

The revised strategy was drafted by Prof Refilwe Nancy Phaswana-Mafuya. The following people served as members of the strategy revision group:

| | |
|------------------------------------|---|
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| Prof Sanette Marx | DST/NRF Research in Biofuels and Other Clean Alternative Fuels, Faculty of Engineering |
| Prof Jeanette Du Plessis | Deputy Dean Research & Innovation, Faculty of Health Sciences |
| Prof Susan Coetzee Van Rooy | Deputy Dean Research & Innovation, Faculty of Humanities |
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| Prof Deon de Beer | Chief Director: Technology Transfer and Innovation |

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Acknowledgements regarding the drafting of the initial strategy

The initial strategy was drafted by **Dr Anthon Botha** from TechnoScene (Pty) Ltd who acted as facilitator for the strategic alignment workshop held in July 2015. The following people made major inputs on the initial strategy:

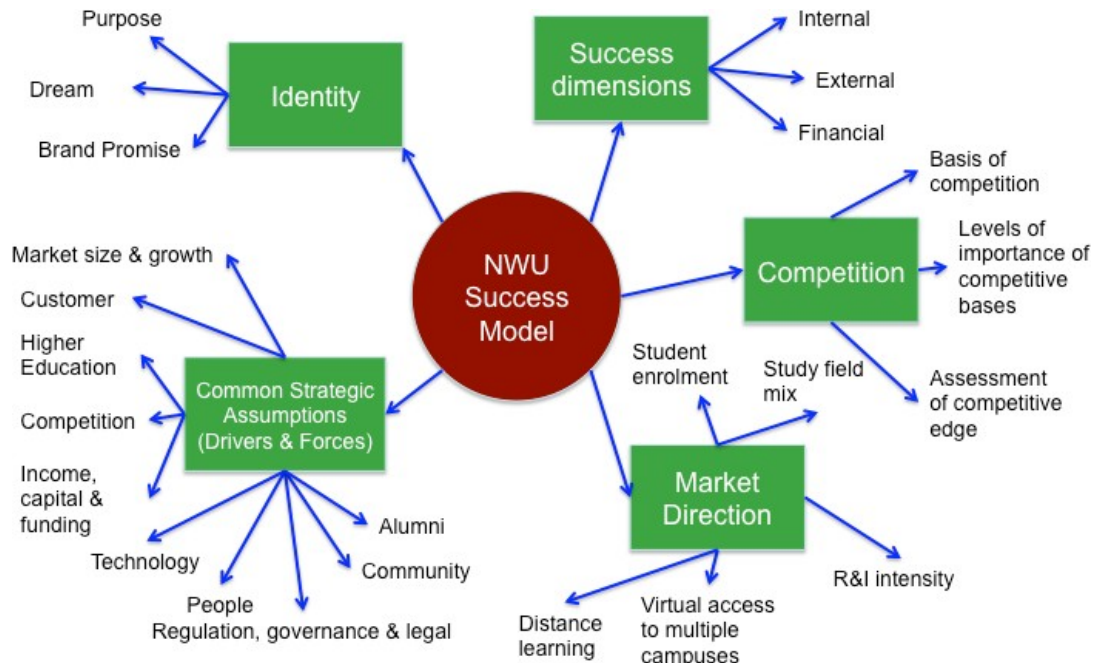
| | |
|-------------------------------|--|
| Prof Lucas Venter | Director: Research Support |
| Prof Deon de Beer | Chief Director: Technology transfer and innovation support |
| Ms Bibi Bouwman | Director: Community Engagement |
| Dr Hendri Coetzee | Institutional Community Engagement Office |
| Prof Nicholas Allen | Director: International Liaison |
| Mr Boeta Pretorius | Chief Director: Information Technology |
| Ms Anelda van der Walt | eResearch Analyst |
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| Prof Frik van Niekerk | Deputy Vice Chancellor: Research, Innovation, Community Engagement, Internationalisation and ICT |

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Addendum A

The NWU Success Model

The emerging NWU Success Model contains the elements as outlined in the schematic below.



The NWU *identity* holds elements of its reason for existence. The intent of identity is that it captures the hearts of people within the organisation, and together with the values, is used as the basis for developing the desired organisational culture as well as for brand positioning. The NWU is about (*purpose*) serving society through the creation of knowledge, innovative learning and enabling communities.

The NWU *dream* leads to a vision that entails the desire **to be an internationally recognised university in Africa, distinguished for engaged scholarship.**

The *brand promise* includes a pledge for excellence, dynamic outlook, and being a value-driven organization, mindful of “ubuntu” and caring for people.

The NWU has identified *strategic assumptions* that refer to key drivers and trends, developments, anticipated significant events, important current realities that will continue or may intensify, as well as anticipated risks and opportunities that are likely to impact the University in the short', medium' and long'term. These strategic areas and assumption considerations are summarised in the table that follows.

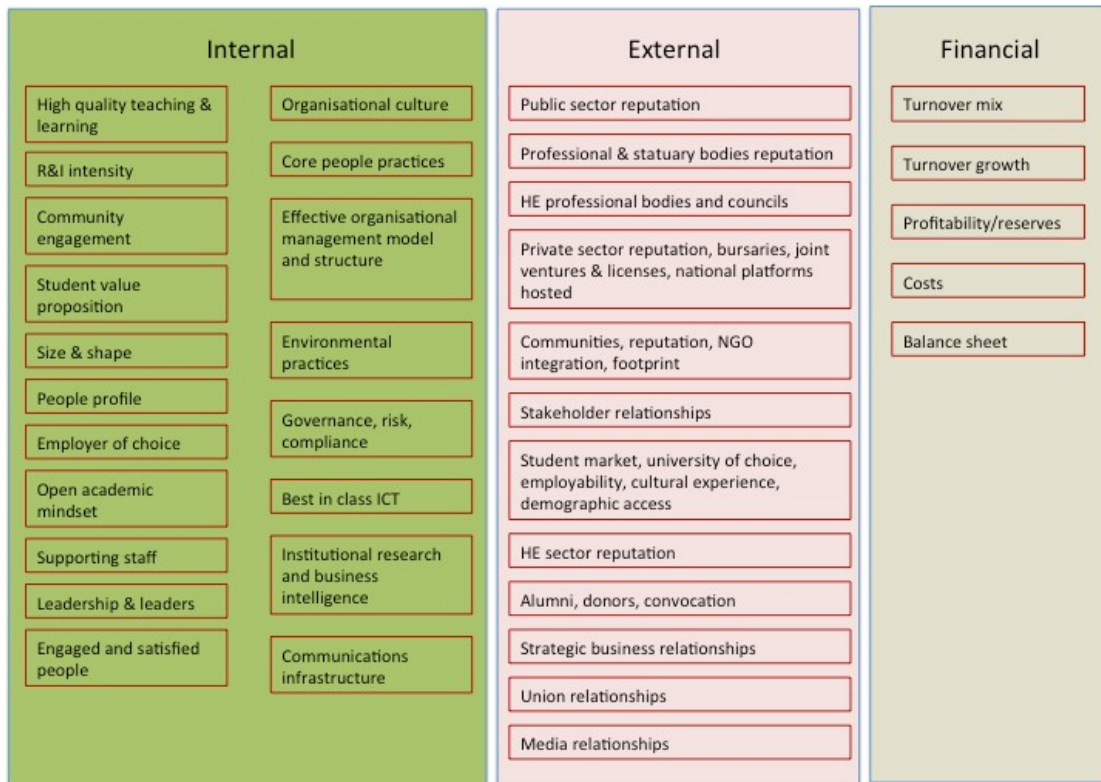
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| Strategic area | Assumption considerations |
|--|--|
| Market size and growth | Changes in undergraduate and post graduate student demand, locally and internationally |
| The customer | For teaching and learning and for research, innovation and community engagement the market segmentation and value expectations |
| Higher education | Teaching and learning and research, innovation and community engagement |
| Competition | Competitive intensity, differentiation, resources, reputation, focus and strategic Relationships |
| Income, capital and funding | Funding sources and funding streams, such as Department of Higher Education and Training (DHET) funding, tuition and related fees, entrepreneurial income, donor income, state subsidised research income, investment income, funding for infrastructure, equity position and reserve policy, loans and international income |
| Technology | ICT, general computer literacy, ICT in teaching and learning, ICT for research and bridging the digital divide in communities |
| People | Scarce skills, black academic scarcity, organisational culture and commitment, Sector Education and Training Authority (SETA) rebates, unemployment increase, Employment Equity Act, influence of trade Unions |
| Regulation, governance and legal issues | Levels of stringency and interventionism, changing governance, increasing legislation |

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| | and compliance challenges |
| The Community | Increasing expectation from communities, ownership from communities, increasing student assistance demands, increasing student activism and unrest |
| Alumni | A significant stakeholder and influencer |

Success dimensions addressed by the NWU Success Model include:



The NWU Success Model identifies its *basis for competition* in three clusters



Addendum B: Research Entities
Separate attachments

Addendum C: Innovation Activities

Separate attachments