TECHNOLOGY TOP 100 EXPLAINED

Introduction

This document presents the philosophy underlying the Technology Top 100 (TT100) evaluation process. In this document you will find both the rationale upon which the Da Vinci Sustainability model has been designed, as well as the process that is used to adjudicate entrants.

Admission and final assessment of an organisation's performance is based on a three stage evaluation process. The first stage comprises an online admission process in which organisations are requested to provide basic information about the nature of their operations. Each submission is evaluated to determine if the respondent meets the minimum requirements for entry. Of prime concern at this stage is whether the organisation adds value to its end offerings. As such, organisations who are deemed to be 'box pushers' (where they act simply as a distributor without adding any value), are excluded.

Having met the entry requirements, organisations are invited to complete the comprehensive online questionnaire. On successful completion of the questionnaire, the final stage comprises an interview with a panel of independent adjudicators.

The TT100 Scoring System

The TT100 scoring system consists of two components. The first component is based on the scoring the online questionnaire where a point system is allocated to each question. There are different weightings given to each section of each question. These weightings are based on data collected over the past 20 years where we have been able to identify those drivers which constitute a 'technologically excellent' organisation.

The second component is derived from the scores you obtained through the interview process. Here each member of the adjudication panel provides an assessment based on the interview. The adjudicators are required to provide a score for each element of the TIPS™ model.

The final score upon which the dashboard has been derived is based on a 70:30 percentage weighting of the interview score and the questionnaire score. As such, the final score is weighted in favour of the interview.

The final phase of the assessment process takes place at a meeting of the full panel of adjudicators who gather to identify category finalists and award winners, where the panel looks at identifying the high performers in each sector - large, medium, small and emerging organisations.

These results are only published once they have been approved by the panel of adjudicators and have finally been subjected to an independent audit.

The Da Vinci TIPS™ Model

The founding premise, which underpins the adjudication process for the TT100 programme is based on the Da Vinci TIPS™ model. The model has evolved from the findings from 20 years of data obtained from the TT100 entrants.

Over the years, as the process became more sophisticated it became apparent that successful organisations are concerned about four primary drivers when managing their operations. These drivers include the:
Management of Technology
Management of Innovation
Management of People
*Management of the organisation within a Systems environment*.

The TIPS™ model has now emerged as an important indicator to assist organisations to sustain and navigate their operations, even in difficult trading conditions.

It is important to note that these drivers are applicable to both users, and developers of technology, and are equally applicable to any organisation irrespective of what business they were in. The notion of managing an organisation with these drivers is as relevant to an insurance company as it is to a technology development company, a service company or any other organisation that provides offerings to the marketplace.

At the core of the model is the concept of managing the organisation from a *Systems* viewpoint. The model and the business awards programme have, over the years, provided Da Vinci with ample evidence that the notion of managing an organisation systemically is an important driver, which contributes to that organisation's long-term sustainability.

From the outset, the adjudication process has been designed to explore how you manage your system and we use the following model to assist us in gaining some perspective of what you are doing to ensure that all the elements of your system are being catered for.
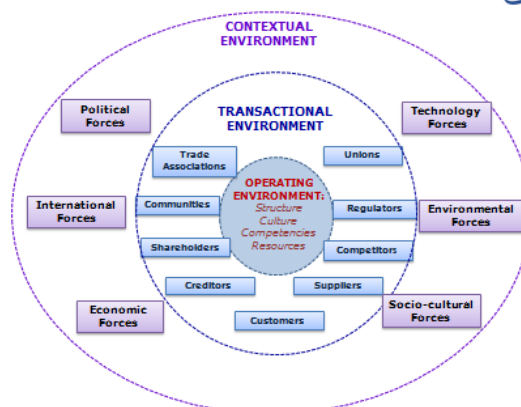
The model as depicted in the diagram above, suggests that managers and leaders of organisations should be concerned with three elements which determine their stakeholder environment.

Firstly, there is the **Operational Environment** which comprises all those internal elements over which the organisation itself has total control. Here you need to be concerned with the structure, the culture, the resources and the competencies which are available, to carry out the purpose for which the organisation has been established. This is applicable to all forms of organised structures, be they business, governments and especially government departments, NGOs, political parties and the like.

The second, and perhaps most overlooked yet most important environment, is the **Transactional Environment**. Here we are concerned with all those influencers which in one way or another can have an impact on your organisation, and which in many circumstances you have no control over. So here you would see your customers, your creditors and opposition, regulators and the trade unions. This grouping would vary from organisation to organisation for example in the case of politicians; the media would be seen as a key part of this grouping.

Finally, there is the **Contextual Environment,** which is all about those macro issues that, in one way or another, influence the way you manage your organisation. Issues such as environmental, socio political, technological trends and regulatory factors are fundamental to the wellbeing of the organisation.

Systemically, none of these entities exist in isolation. They are integrated and co-dependent on one another - one incident in the transactional environment will be reflected in the operational environment, and in turn be impacted by the contextual environment. From this it can be seen that it is beholden upon the leadership, be it business or political, to 'read' the system, understand the inter-relationships and make strategic decisions on how to obtain the maximum benefit from these relationships, whilst constantly being aware potential unintended consequences.

The TIPS™ Model Unpacked

The TIPS™ model as used for the adjudication process is depicted in the diagram below:
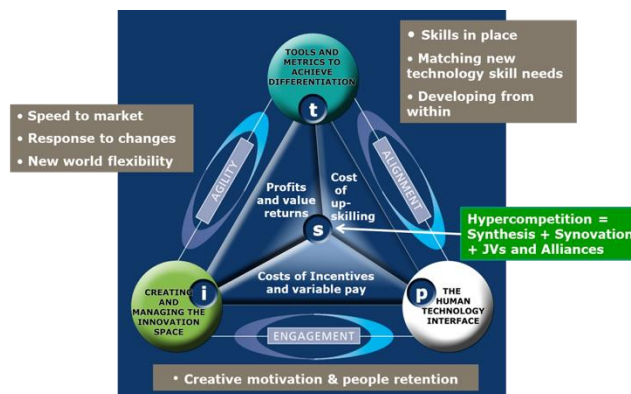
The TIPS™ model introduces a number of important linkages between the **T** (management of technology), the **I** (management of innovation), the **P** (management of people) and the **S** (management of the organisation from a systemic viewpoint). Accent is placed on the notion of **management**. In this context, the focus is on those elements, which you as a TT100 organisation, put into play to secure your business in the long-term. Whilst we are always impressed with the fact that you may have developed a suite of new products, processes or systems, we are more concerned that all of this innovation is entrenched into a well-managed system.

The Management of Technology

The first determinant focuses on the management of **technology (t).** We now look at the organisation's ability to understand the pervasive impact that technology will have on the future of the operations. The process is all about a new decision making paradigm, an ability to ask the right questions, and to make informed decisions recognising the impact which such decisions will have on the operation.

Organisations that score well in this Indicator pay particular attention to ensuring that they have a well-founded technology strategy. Key to their strategy formulation is the recognition of the integral role that technology plays in their competitive advantage. It is not uncommon to find that technology is the governing factor in their overall strategy formulation. Instead of developing an overall strategy and then deciding on what technologies they need to implement the strategy, they identify the key technology drivers and use this to define their overall strategy.

Key to the strategy formulation is a decision to position themselves as being an organisation that drives itself in the market through a 'technology push' or 'market pull' philosophy. With the first philosophy, organisations believe that their technology will have an appeal to a certain segment in the market - they are not too concerned about whether they have a specific end-user or not. In the market pull situation, they are aware that there is a demand for the product, and go into the market with a high degree of confidence. Nonetheless, they have to position themselves such that they are uniquely positioned over their competition.

There is also evidence that these organisations spend considerable time identifying the 'life cycle' of their offerings. They constantly monitor the performance of their offering in terms of sales volumes, revenue and potential opportunities to increase market share. These organisations have in the background a research and development machine, which is constantly looking at new offerings, so that when one of the offerings is losing market share they are able, in a relatively short space of time, to introduce a new or improved offering into the marketplace. This particular process is known as 'managing the S-curves'.

It is not uncommon to find that these organisations also deploy formalised product development strategies, which are focused on minimising the risk of pursuing a particular strategy where the initial concept might not be what was originally anticipated. Here, a 'stage gate' system is deployed to enable them to make critical decisions along the development cycle of a new offering. However, it has been noted that in some TT100 companies, caution has been expressed about being too closely guided by such prior development processes.

It has been found that an original idea might turn out to have a far different application than was originally anticipated. Linear adherence to a particular development processes can in some cases result in a technology being disbanded at to an early stage. It is interesting to note that some TT100 winning companies have been able to pick up (at relatively low cost) such discarded technologies, and been able to exploit them to their advantage!

In more sophisticated and large organisations where risks are high and the risk appetite is extremely low, organisations will resort to more formalised processes. Also, there is a growing interest in the use of 'technology roadmaps' which provide some opportunity for the organisation to define a way forward in terms of what they believe the future requirements of the customer will be.

Bearing in mind that the ultimate success of an organisation is to provide offerings into the marketplace for which there is a definite customer, winning organisations place emphasis on integration of the technology within their own, and customer bases. In addition to a product or service offering, these organisations concern themselves with the upscaling of their staff and customers, to ensure the effective integration of the offering into the chosen marketplace.

At the end of the day, a key measurement of an effective **management of technology** strategy is measured in terms of how the organisation has been able to meet increasing demands from the customer, how they have been able to increase their market share, and whether in fact they have been able to enhance the offerings such that the customer is willing to pay more. In addition, measures such as the growth of the organisation in terms of increased employment, as well as an increase in skilled personnel within the organisation are deemed to be important when considering the long-term sustainability of the organisation.

The Management of Innovation

The second determinant interrogates the organisation's ability to manage the **innovation** process **(I)**. Here, issues such as creating an environment that is conducive to employees constantly interrogating and re-examining the way that they conduct their business are assessed. A winning organisation is characterised by an inherent restlessness purposely generated by management. The innovation process goes way beyond the generation of new ideas, and is concerned with minimising risks, whilst maximising opportunities.

Like with the Management of Technology, organisations that score well in this indicator have a well-defined innovation strategy in place. Further, there is dedicated activity centred around ensuring that the Management of Innovation occupies top priority within the organisation. Whilst some organisations go to the extent of having a formalised group of people who are engaged in the innovation process, there are many alternative ways in which organisations create an innovation environment. For example, some organisations completely outsource their innovation development processes, whilst others make use of concepts such as crowdsourcing and the frequent use of customer interactions to gain an appreciation of what the marketplace is expecting.

By far, one of the most distinguishing features of successful organisations in this domain are those who place emphasis on rewarding their employees for having successfully been responsible for providing new ideas to enhance the company standing in the marketplace.

There are many interesting ways in which organisations reward their employees for going beyond all expectations to bring about new innovations. For example, organisations have formal policies in which employees are able to enter into a contractual arrangement based on some form of royalty agreement. In other cases, organisations provide employees with a once-off bonus, and in other cases, create a central pool from which all employees become the beneficiaries.

The true hallmark of a successful innovation strategy is the time it takes from concept to delivery of new offerings into the marketplace. Here, successful organisations measure their efficiencies in terms of the time taken for the full commercialisation of a new concept. In this area, the TT100 adjudication process takes to consideration the nature of the organisation and what could be expected in terms of the organisation's ability to deliver new offerings into the marketplace. For example, in the case of a commercial electronics company, it would be expected that the organisation would be so agile that they could introduce new offerings into the marketplace in months rather than years. Typically, companies such as Apple and Samsung would be expected to launch new offerings every 9 to 12 months.

In the case of a large chemical organisation, it would be unreasonable to expect them to be able to develop enhancements to their processes (or even new products) in a short space of time. These organisations are therefore measured in terms of years, rather than months, for the successful commercialisation of a new offering.

Emphasis is placed on the notion of the Management of Innovation; hence the TT100 programme recognises four key innovation domains; Product Innovation, People Innovation, Service Innovation and Process innovation.

The Management of People

The third determinant is about the **human-technology** interface **(P),** and what procedures are in place to ensure adequate change management processes to re-position the organisation due to changing circumstances. There is much merit in the adage that there is no such thing as "bad technology" – the failure rests in the shortcomings of the developers to take the human element into account.

Winning organisations in the Management of People category recognise that their greatest asset is their people. It is not uncommon to find that these organisations have committed processes in place to ensure that this valuable asset is correctly managed. In particular, attention is given to upscaling employees, managing performance and a recognition of the need for succession planning, particularly in the case of key personnel. Due consideration is also given to recruitment and retention programmes, where innovative processes are deployed to ensure that employees feel that there is an important part of the organisation. This notion of 'ownership' is deemed to be an important strategy, particularly when retaining scarce skills.

Perhaps the most important element in this process of retaining skilled employees is to involve employees in the development of the organisation strategy, and to keep employees constantly apprised of both the successes and challenges facing the organisation. The old adage of "managing by walking about" is a common practice, where the executives take time out to meet with staff on an informal basis.

When it comes to the growth of employees, the winners will choose as their first priority, the identification of existing employees who were worthy of promotion, rather than resorting to recruiting people from outside. In the South African context, accent is placed on accelerated development programmes, where people from historically disadvantaged backgrounds are provided with focused development to enable them to find their rightful place within the organisation. In more complex organisations, the notion of job rotation schemes is deemed to be an important part of the strategy.
Here, the objective is to create multi-skilled people who can step in to any position should the need arise.

In some organisations, the employer-employee relationship is based on a high level of trust. Further, these organisations are particularly concerned about their employees having a balanced work/personal life. Employees are able to operate on a flexible time basis, which enables them to play a meaningful role as a parent/partner, and to have the flexibility to be able to enjoy sporting and other recreational activities, without being forced to rigid annual leave schedules and the like.

The Management of the System

These determinants are inextricably linked to the notion of the organisation as a **system (S).** Managing this fourth determinant is a critical element, which distinguishes the winners from the rest. The ability to manage the operations from a systemic viewpoint is fundamental to the organisation being able to understand its core competencies, and to uniquely position itself in the market. An appreciation of the system goes way beyond the internal forces and places significant emphasis on the external factors, which is uppermost in the minds of management. The winners constantly 'test' the impact of their actions using a systemic approach.

Organisations that excel in the Management of the Systems pay particular attention to managing both internal and external stakeholders. In particular, the winning organisations ensure that they are constantly keeping abreast with what is happening in their marketplace, and in order to achieve this as a committed process, engage with customers and suppliers. Further, in such engagements they try to include as many of their and employees as possible. There is a commitment to creating this unique tripartite relationship between employees, customers and suppliers. In areas where there are opportunities to gain mutual benefit, they will go to the extent of collaborating with their competitors and in so doing, often create formal or informal associations to achieve greater leverage for the sake of the industry in which they operate.

Emphasis is placed on using Competitive Intelligence to gain insight into what is happening in their marketplace.

It is not uncommon to find that 'suspicious' people in the organisation are constantly combing the Internet in an attempt to keep abreast with what is taking place both locally and globally. Such strategies are deemed to be of particular interest to organisations that are in highly competitive environments, such as the commercial electronics sector. Here, the advent of a new microchip could have dramatic impact on their competitive positioning.

These organisations spend a significant amount of their annual turnover in the pursuit of research and development activities. Here, a variety of philosophies are found in the marketplace. Some organisations have a fully-fledged internal research and development operation, whilst others have hybrid research and development facilities in which they contract the services of outside organisations to partner with them in the pursuit for new product offerings. There is also an awareness of operating in the global environment and therefore, due consideration needs to be given to quality assurance, protection of intellectual property and the deployment of risk mitigation strategies to minimise potential fallout.

In terms of recognising their organisation in the context of a wider system, there are committed strategies to finding ways in which they can integrate their business within local communities with a specific objective of creating work opportunities and more importantly, upgrading conditions within deprived communities through committed social upliftment projects.

Connecting the Elements

There are 3 interconnecting elements to the model, which are fundamental for a sustainable higher performance organisation to achieve their goals:

Alignment (linking Technology and People) – ensuring that all the elements of the operations are aligned to meeting the strategic objectives. Here, we are concerned with how the company ensures that they have the necessary skills in place to capitalise on the technology at their disposal. Further, the model probes whether they have programmes in place to up-skill both their employees and their customers to be better able to capitalise on the new technologies being deployed.

Engagement (linking Innovation and People) – ensuring that the organisation has processes in place to gain total 'buy-in' from all employees. In this context, the notion of Connectedness, Contribution and Credibility are paramount.

Agility (linking Technology and Innovation) – ensuring that the organisation is able to meet the challenges of growing competition through the use of new tools. Here the concepts of first to market, productivity, and rapid prototyping are a key attributes.

Gaining Additional Insights

The model also interrogates the following:

The linkage between the system attribute, the innovation attribute and the technology attribute provides some insight into the profit and return expectations of the organisation.

The linkage between the system, technology and people attributes provide an insight into the cost of up scaling both customers and employees in terms of gaining maximum benefit from the technology.

The linkage between the system, people and innovation attributes provides insight into the costs of variable pay and incentives.

One of the concerning features of South African companies, as distinct from their global counterparts, is an apparent lack of appreciation of the importance of incentivising people. This is particularly evident when it comes to the development of new intellectual property, which provides significant leverage for the organisation. Around the world, there is a growing awareness by organisations of how best to manage creative thinkers so as to ensure that they remain in the employ of the organisation. In many cases, company policies provide for an incentive programme, which ensures both the innovator and the company share in the success of the process, product or system that has been developed. This concept ensures staff retention and an on-going drive by employees to ensure the sustainable success of the organisation. The TT100 programme is constantly on the lookout for "the story behind the story", where organisations are probed into the ways in which they incentivise their staff as well as what steps they take to retain key technical and innovative people.

The Sustainability Factor

In the figure below, the TIPS™ model has been taken one step further by incorporating some key elements, which in addition to the hard-core management processes, are deemed to be important when an organisation is viewed from a sustainability point of view. In particular, the model requires of organisations to demonstrate their commitment to environmental responsibility, their interaction with communities, demonstrable evidence of employment equity, broad-based black economic employment, employment creation and whether they are looking at private-public partnerships. Finally, the model talks about the concept of organisational ecology in which the ability of the organisation to create an environment conducive for sustainability is determined.

Organisational Ecology is based on the reality that most organisations have structural inertia that hinders adaptation when the environment changes. Those organisations that become incompatible with the environment are eventually replaced through competition with new organisations better able to adapt to the new external demands.
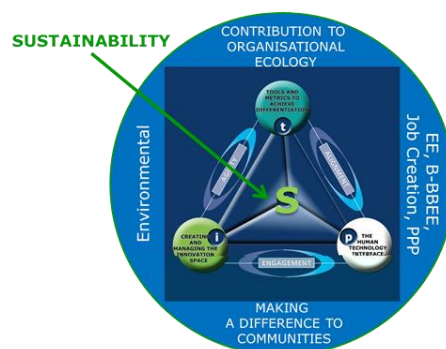
Some Distinguishing Characteristics

Over the years, the TT100 team has been able to glean some key characteristics that distinguish winning organisations from others. These include the following:

- They are truly competitive.

- They differentiate themselves through the Management of Technology, Innovation and People, all the time focusing on systemic integration.

- Their management process is systemic with a full appreciation of both the internal and external drivers impacting their operations.

- They pay attention to every single facet of the business, not just looking at the bottom line but recognising that if all other aspects of the business are attended to, the bottom line looks after itself.

- More time is spent seeking opinions of all people in the organisation, demonstrating a deep respect for the fact that people, irrespective of their position within the organisation, can make a meaningful contribution in terms of improving the business process.

- Innovative practices are deployed to retain key staff and these go way beyond financial rewards. In some cases, the organisation will set up subsidiary companies for their high powered staff and enter into supply agreements with the new company.

- They distinguish themselves from other organisations by engendering a continuous 'restlessness' in the organisation, looking for better ways to improve their operations. They focus on beating themselves, rather than beating their competition.

- At the heart of these organisations is an inordinate drive to stimulate innovation. Much time is placed on creating an environment in which people believe that they have a personal stake in the wellbeing of the business.

- These organisations have a high success rate in bringing products to the market. Their successes are based on the institution of formal processes, which ensure that the product development cycle is controlled and that the resources of the organisation are directed towards maximum efficiency.

- Maximum use is made of S-Curve analysis - whilst one product/process is ending its life cycle, the organisation is preparing to launch new innovations into the market place.

- In line with international trends, these organisations have become intimately aware of the benefits of entering into strategic alliances with both local and international partners.

The very notion of customisation requires a completely different mind-set and in order to meet the needs of the customers, unique relationships are formed between customers, suppliers and the innovation team. It is not uncommon to find that these organisations will invite their customers and suppliers to become part of their innovation management system.

They make use of all forms of competitor intelligence to identify where their competition may come from. Extensive use is made of social media and scanning the internet for information.

There is a constant review of "what business" they are in. By asking this question, many organisations have been able to modify their offerings to meet the growing needs of a more discerning market place, and above all, to see how they could adapt their operations to gain more customer intimacy. Accent is placed on customer retention and the drive is all about owning and extending the value chain.

These organisations pay particular attention to the development of their people. This is not simply sending them on public courses, but taking time to identify the skills gap and entering into alliances with providers to customise skills development programmes on their behalf.