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THE DA VINCI INSTITUTE
FOR
TECHNOLOGY MANAGEMENT

TIPS CONFERENCE

Wednesday 27 October 2010



TOPIC: How does the Management of Technology, Innovation and People with a Systemic Context inform solving Wicked Problems?

Conference Chair: Mr Ian Kruger – The Da Vinci Institute

Conference Speakers: ProfRoy Marcus – Chairman, The Da Vinci Institute

Dr Dana Gampel

Mr Joshua Bengu

Dr Rica Viljoen

Mr Stephen Rogers

Dr Rudy Phillis

Mr Adrian Schofield

Dr Jay van Zyl

Dr Audrey Verhaeghe

Dr Collin Steyn

Mr Raldu Nel

Dr Barbara Holtmann

ProfBenjamin Anderson – CEO, The Da Vinci Institute



Conference Overview:

The one-day conference was attended by some 80 delegates including the speakers and organisers.

This year's conference topic tried to address the issue of 'Wicked Problems' in an organisation and how the Management of Technology, Innovation and People, within a Systemic Context can possibly solve or ease such problems. The conference agenda was split into four sessions focused on The Management of People (MoP), The Management of Technology (MoT), The Management of Innovation (MoI) and Managing the Systems Way (MoS).

Conference Opening: Professor Roy Marcus

Prof Marcus welcomed the delegates to The Da Vinci Institute conference and explained that this year's conference was based on the Da Vinci TIPS model (Technology, Innovation, People and Systems). He added that the day's conference was going to try and address some of South Africa's business management problems.

Mr Kruger welcomed the delegates and debriefed them on a profile on statistics in the Management of Technology, Innovation, People and Systems' results in a number of industries and sectors. Mr Kruger referred to balancing long term goals as a priority for South Africa, in addressing challenges such as eco systems which was right at the bottom of South Africa's priority rankings.



The Management of People

Chair: Dr Dana Gampel

DrGampelcommenced the session by sharing her positive experience in her journey to becoming a Da Vinci graduate adding that the 'Da Vinci family'made her think differentially and unconventionally where she was allowed to ask difficult and unusual questions in comparison to other universities who steered her into where they wanted to go.

DrGampel then gave a brief overview of TIPS and its importance and relevance to one's work in the economy. She added that Management of People looks at applied knowledge, which when nurtured is where the 'magic of innovation' comes through.

MrJoshua Bengu

MrBengu consults in the people arena and business performance area. He feels that it is critical to see how the management of people strives towards sustainability.MrBengu's presentation addressed 3 key issues:

- Mobilisation of people links to organisational performance.
- How does one make teams of people create optimal performance?
- Management of People starts with the leader.

MrBengu stated that there are perception issues where people of different backgrounds have to be managed. He added that companies need to create a culture that delivers sustainable development, referring to his passion that exceptional performance is delivered through action learning and only then can performance be sustainable.

MrBengu stressed the importance of creating the right climate in an organisation. He believes that when it is created people's attitudes and commitments will change,creating the capacityfor the organisation to deliver on its mandates.

He stressed the importance of allowing people to be part of the leader's vision by engagingwith people and driving a strong objective message.

MrBengu described Learning (L) as the sum of People (P) and Questioning (Q)

Action Learning: $P + Q = L$

People + Questioning = Learning



In closing MrBengu commented that when a learning environment is created it sometimes brings about tension, which should be managed in a positive way as this will bring about an organisation which is then mobilised.

Dr Rica Viljoen

Dr Viljoen opened her address to delegates by stating that to study the Management of People one has to study all the TIPS domains, and that in terms of engagement, the theory asks the question: To what extent does the organisation engage?

Dr Viljoen gave a brief explanation of the TheCynefin framework (Snowden) which has four domains:

- ↳ *The Known environment*
- ↳ *The Knowable environment*
- ↳ *The Complex environment*
- ↳ *The Chaotic environment.*

Dr Viljoen spoke on 'reframing' patterns and important points to look at when trying to address change. These included:

- ↳ Levels of consciousness
- ↳ Value judgments
- ↳ Conclusions and emerging patterns
- ↳ Belief systems

Dr Viljoen referred to Da Vinci's philosophy around transformation, making a comparison to the caterpillar becoming a butterfly, stating that Da Vinci uses the process of appreciative inquiry, to develop a more holistic understanding of the world we live in.

She commented on the leadership principles of Da Vinci around people, where students are asked to seek the truth – their truth, adding that change begins the moment a question is asked - the more positive the question, the longer-standing the change.

Dr Viljoen closed her presentation in summarising the Management of People as being complex and systemic in nature.

Mr Stephen Rogers

He stressed the point that line managers have to **choose** to care for "managing people", adding that HR management has to become a profession. He further stated that in the professions such as doctors and lawyers, there is a fair amount of management,



whereas in HR there are philosophies which tend to be systematic in South Africa. In his presentation, Mr Rogers stated that *Capabilities + Performance = Impact*.

Mr Rogers referred to the issue of 'Winning the war for world class talent' stating that it is a concept that he dislikes, and prefers that of **'Creating an organisation that attracts talent'**.

He stated that in Great Britain, 40% of companies ranked the importance of design as number one priority and that these companies are highly successful, adding that 30% of the American work force is also involved in design.

Mr Rogers posed the question on how to develop a process of being an organisation that attracts talent, stating that the business plan has to be designed with 'heart' from the start. Mr Rogers then addressed the issue of capability requirements for performance levels for new talent. He stated that the greatest concern is that there is nothing to measure against, apart from simplistic tools e.g. reference checks, qualifications checks etc, which may not be a true reflection of the candidate's capabilities.

He noted that companies need to have score cards that measure the capabilities and performance of candidates. He also stressed that a system needs to be put in place where talent can be measured.

Mr Rogers summarised four basic parts of a cycle imperative to attracting talent to an organisation:

- Hire more capable people
- Train, develop and coach those people
- Performance management engagement
- Measure and improve their impact

Mr Rogers closed his presentation stating that the above four basic parts of a cycle should not be HR's responsibility, but the responsibility of line management.



The Management of Technology

Chair: Dr Rudy Phillis

Dr Phillis introduced himself and gave a brief history on his PhD journey. He commented on how Da Vinci had impacted on his life whilst reading for his PhD, which he finally completed in 2006.

He referred to the rigorous process at Da Vinci where, in addition to his PhD, he was also given a '**recognition**' award.

Adrian Schofield

Mr Schofield stated that he was asked to give his view as to why he thought The Da Vinci Institute takes the approach that it does in the Management of Technology, and asked the question, "*Why manage technology?*"

Mr Schofield stated that one should place one's sights on the 'big hairy audacious goals' commenting that this can be achieved through technology and referred to the FIFA world cup in terms of the technology that enabled billions of people worldwide to view the tournament.

What is technology?

In asking this question, Mr Schofield stated that it is about 'tools', but is not necessarily the 'be-all' and 'end-all' of an organisation's success. He referred to primitive tools such as hammers, saws etc as an example and went on to comment that he does not believe in the 'digital divide'.

Mr Schofield went on to discuss the development and usage of microchips, stating that technology is creating new systems, but is also bringing with it a new set of challenges. He referred to IBM, which is no longer in the PC business and that the Sony Walkman would cease to exist from the end of October 2010 as a result of the iPod having replaced it. He further added that Apple makes an astounding 60% of its revenue from products that did not exist a mere 3 years ago!

What is the relevance to Wicked Problems?

Mr Schofield stated that the ingredients of managing technology are straight forward:

- You need information, and should source that knowledge from outside stakeholders, customers, investors, government etc and internal forces, colleagues.
- Skills are vital. (Mr Schofield believes that a lot more investment has to be placed on skills development right from grade 1 schooling levels).



- Measurement of the effectiveness of the technology must be put in place.
- Acquire a culture that embraces the way in which tools in their environment are used.

Dr Jay van Zyl

Dr van Zyl briefly shared his personal experience in the Management of Technology, from running his first business that failed, to working at an auditing firm in the Department of Technology Diligence. Before moving to New York and later returning to South Africa, he believed that he could replace failed South African technologies with American made technologies, which he could package and resell. In the nineties the internet came to be, changing the way in which the world and his organisation had to adapt to making a strong reference to the element of time.

What is it about time that affects technology?

Dr van Zyl stated that time got removed from the dissemination cycle, commenting that everything today is run in real time, globally. He then posed the question of what is needed to create a sustainable technological platform and replied that it is impossible, emphasising that the 'thinking' prevails, not the technology. He added that there is a global social orientated movement towards how technology is managed.

Dr van Zyl commented on how society has become merely a number through social security numbers, bank account numbers, contact numbers, tax numbers etc in the emergence of what he terms 'Human'Mash-ups' or collaborations.

Dr van Zyl also commented on gender preferences in South Africa as opposed to racial preferences and mentioned that South Africa focuses on the application of products, and not necessarily on the development of innovations. He also described the gender preferences in innovation and briefly reflected on a study which showed that females were more influenced by marketing than men, and that women stated that people need to be cared for in innovations whereas the study showed that men did not consider that issue important at all.

The speaker gave an example of a drinking glass where in the past it was classically considered to be a product, whereas today it is in fact a technology, since it might require customization, e.g. changing its size in order to meet packaging requirements for transportation. He added that there is a shift in the paradigm from product ownership to service of technology.



He explained the case study slides on Microsoft, Apple, Google, Facebook, depicting Apple as making 5% more profit than Microsoft, yet Apple employs 30% less staff.

"Adopt the technology as a service!"

Apple makes money from 'ACCESS to music or films'.

Google is worth \$156 billion, revenue of \$27 million with 19000 employees which is 5 times less than Microsoft and which is worth 1.4 times less.

There is global economic issue as far as the Management of Technology is concerned. Google makes 90% of its total revenue by trading the virtual real estate on its search engine.

Dr van Zyl stated that there is a radical shift in the Management of Technology as a result of behavioural shifts. Facebook employs 56 times less staff than Microsoft but is worth only 6 times less.



The Management of Innovation

Chair: Dr Audrey Verhaeghe

DrVerhaeghe started her own business in creativity courses in 1996, which although successful, was not fulfilling. She discovered that the innovation world was owned by engineers and scientists during that time. This triggered her to undertake her PhD atThe Da Vinci Institute,whichalthough it took her 10 years to complete, she now works within a field that is totally inspiring.

DrVerhaeghe commenced her introduction to the MoI by stating that South Africans are starting to innovate proactively, adding that the network of academic and business people within The Da VinciInstituteis resulting in increased connection with entrepreneurs.

Dr Colin Steyn

DrSteyn posed the question of whether the process of understanding people lead to a thought process that manifested in people becoming innovative. He deliberated two points, namely: The consciousness around innovationand howa culture becomes diffused when even an office tea-lady is included in sharing her ideas.

DrSteyn stated that the top leaders in innovation are not being driven by middle management who actually are the ones engaging with the customers and their respective needs. He added that middle management isvoicing their need in wanting to 'create'.

Mr Raldu Nel

Mr Nel opened his address by stating his pleasure at the passion demonstrated by the like-minded innovators present at the conference.

"What is Innovation?"

Dr Nel explained that according tothe Emerging Trends Study,there are three strategies in innovation, namely: sustained strategies; lower-end disruption and new-market disruption. He shared some cases where South African companies have included these strategies in their innovations such as a 'tea bag' that is submerged into a water bottle to test whether the water is clear or contaminated, and the development of hydrogen scooters / bicycles, an initiative from the Department of Science and Technology.

Mr Nel went on to explain the different phases of systemic innovation pointing out two key elementsnecessary in the process:

- Understand the voice of the customer and do it in a structured way



- Focus time and effort on defining the type of innovation

He also stressed that sustainability is now the key driver of innovation, and that addressing the challenge of eco-sustainability is no longer an option of innovation but a demand, and suggested that the 'Pathway to Sustainability' and its five phases should be a touchstone for all innovation.

In closing, Mr Nel briefly discussed the significance and value of a 'Sustainable Development Concept' that facilitates economic growth. He also kindly distributed copies of the most recent edition of '25 Degrees' magazine to delegates, which is an independent publication that focuses on energy and innovation in Africa.



Managing the Systems Way

Dr Barbara Holtmann

Dr Holtmann introduced herself and explained how she valued the 'Da Vinci way', which challenged her in looking at approaches to complexity, and that the process of pulling together the different aspects of the TIPS methodology taught her the importance of process and how to approach problems differently.

Prof Roy Marcus

Prof Marcus started the session on Design Thinking by providing some examples of 'Unintended Consequences' such as a successful project in Mpumalanga to remove alien vegetation (the Eucalyptus tree), which if replicated in the Western Cape would have had disastrous consequences for the wine industry due to the honey bee decimation.

He also discussed the impact of 'Counter-Intuitiveness' giving an example of there being more people on social welfare than who are actually employed in South Africa.

He posed the question of how 'Wicked Problems' can be solved, emphasising that in fact, wicked problems (particularly macro problems) can actually NOT be solved through traditional methods that are aimed at addressing more simple issues.

'The Black Swan'

Prof Marcus stated that the belief is that we operate in a linear world, being measured against a 'Bell' curve, where anything outside of the curve is basically ignored. He went on to say that the reality in dealing with 'Wicked Problems' is that these problems can only be **dissolved** and not be solved.

Prof Marcus then explained 'Interactive Planning' which includes the process of 'Mess Formulation' and Idealised Design.

The Mess Formulation:

Prof Marcus explained that it is necessary to obtain a stakeholder view of the organisation and that the future cannot be designed if one does not understand the history. 'The Mess' is always factual and is an unemotional reality-check of what actually happens in the organisation. Furthermore, reporting on the 'Mess' exposes the harsh realities that the organisation is facing and does not report the 'pretty picture' that often leaders wish to see or display.



The Idealised Design:

Prof Marcus gave a brief elucidation of the 'Idealised Design' process, stressing that the ideal solution is not necessarily perfect.

He closed his presentation by demonstrating the South African 'Mess' reflecting on the current 'realities' facing South Africa e.g. legislation, affirmative action and empowerment of women.

Dr Holtmann

Dr Holtmann gave a presentation based on the model she created to address security and safety issues in South Africa. She spoke on the "wickedness" of security in South Africa, costing R50 billion to 'solve', and that in essence, the proposed solutions to the high crime rate have actually given rise to an increase in organised crime and violence.

She presented her understanding of the "cycle of crime" and violence, where there has been no care, love and support, explaining that 99% of offenders experience violence as victims and that children are being ignored to the point where they then become offenders themselves. The one side of Dr Holtmann's cycle depicted the prevention of crime and the other the cycle of enforcement.

Dr Holtmann's model looks at national government playing a less significant role, with the people in communities and at local level being involved in solving the problem.

One of Dr Holtmann's significant findings was that the system was too coordinated across the various areas and that the system of safety is complex. Dr Holtmann's model identifies the roles for numerous people who share the same objective in order to establish mutual collaboration, in finding solutions. Whilst she acknowledges that the solution is not simple, she noted that complex models should not result in complex solutions.



Close

Prof Bennie Anderson

ProfAnderson commenced his address by stating that society oftenmakes decisions on what it is not informed about, that which it does not know. He added that Da Vinci intends to challenge people to solve problems by not aligning themselves to existing "mind sets", but to allow themselves to develop a true understanding of the reality within which they operate;to allow the brain, if possible, to be free of culture and to make informed decisions.