

PTSA News

Newsletter of the Production Technologies Association of
South Africa

November 2019

- 
- *4IR Focus*
 - *ISTMA World Conference*
 - *Sustainability*
 - *Jendamark Exports*
 - *Productivity Focus*



SPECIAL
SHOW EDITION

Foreword from CEO

Welcome to this Special Edition of our PtSA Newsletter which we have produced for the African Advanced Manufacturing and Composites Show, to introduce PtSA to those companies and organisations which do not know about the Association, and to highlight some of the activities and successes of some of the members of PtSA.

We would like to take this opportunity to wish the organisers of the African Advanced Manufacturing and Composites Show every success with the show, and to thank them for the opportunity which they have given PtSA to participate in the show.

PtSA, which represents the production technologies industry (the means of making things), is focused on the growth of manufacturing in South Africa, and strives to assist the South African manufacturing industry to remain, or become competitive, in order to grow.

PtSA owns a project management company, NTIP (National Technology Implementation Platform) which is responsible for technical skills development in the precision machining and toolmaking industries as well as enterprise development in these industries.

PtSA is a member of the International Special Tooling and Machining Association (ISTMA) (currently PtSA holds the Presidency of ISTMA), which gives the members of PtSA access to a network of members in 21 countries in the Americas, Europe, and Asia, and over 8000 companies.

The next ISTMA World Conference takes place in June 2020 in China, and we encourage our readers to consider joining the "Tour to China" being organised by PtSA, to attend this conference. See details in this Newsletter

One of the objectives of PtSA is to guide its members towards a

better understanding of the 4th Industrial Revolution (4IR), the potential impacts on the production technologies industry and how to adapt to 4IR, and the recent Future Production Technologies Convention was hosted by PtSA for the benefit of its members. We are reporting on some of the aspects of the Convention in this Newsletter. We will host the next Convention in September 2020 with the theme "Sustainability". We have included an article on sustainability in the plastics industry in this Newsletter.

We have also included a number of articles regarding improvements, expansions, and exports by some of our members, which demonstrates the advances made in manufacturing in South Africa, and the potentials which exist. In this regard, we have included an article regarding the possibility for improving productivity and an article regarding research that was undertaken by Momentum, which we hope will be interesting for you.

Co-operation between organisations, associations and between members, is also highlighted to demonstrate what is possible when we work together.

We hope that you will enjoy this Special Edition of our PtSA Newsletter, and that you will find benefit in the articles.

We thank our advertisers for the support for this Special Edition Newsletter.

We encourage those of you who are not yet members of PtSA, to consider joining the Association.

John McEwan

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Association of South Africa

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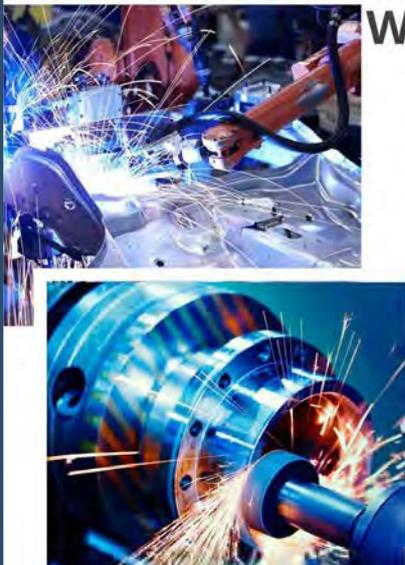
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Promoting, Protecting and Supporting
the collective interests of the Production
Technologies Industry of South Africa

The Role and Functions of PtSA

- PtSA offers and facilitates networking, and information programmes
 - PtSA promotes the improvement in efficiency and profitability of its member companies
 - PtSA is the collective voice for its members with government and authorities
 - PtSA is the collective voice for its members to engage with government and authorities
 - PtSA guides its members towards a better understanding of 4IR, the impacts of 4IR on the industry and how its members should adapt to 4IR
 - PtSA promotes the pathway to the future through sustainable development
 - PtSA facilitates the opportunities for members to make use of the international connections through ISTMA



What is Production Technologies

Production Technologies provides the means that enables the manufacture of all manufactured goods

Typical manufacturing technologies include:

- Dies for metal pressing, stamping, punching and forming
- Injection and compression moulds
- Jigs and fixtures
- Assembly systems and robotics
- Gauging and measuring systems
- Precision components

<p>PtSA has a Partnership Agreement with Government</p> 	<p>PtSA has its own Project Management Company</p> 
<p>PtSA has an International Footprint</p> <p>PtSA is a member of  ISTMA</p> <p> International Special Tooling and Machining Association</p>	

ISTMA World Conference 2020



Conference background

The International Special Tooling & Machining Association (ISTMA) is an international association representing 20 Special Tooling and Machining Associations throughout the world. Collectively, ISTMA member associations represent over 8,000 companies and over 70 billion U.S. dollars in annual sales. China Die and Mould Industry Association (CDMIA for short) was founded in October 1984. CDMIA has 1,280 direct group members and 15 professional committees, expert committees and advisory committees.

The 16th International Special Tooling & Machining Association World Conference will be held in China for the first time in June 2020.

This is an authoritative conference and industry summit for the global tooling industry. Industrial elites, well-known experts and scholars, senior engineers and technicians, outstanding enterprise managers, and senior personnel of relevant industrial associations and government departments from all over the world will be gathered in China to promote international cooperation by making full use of industrial complementary resources; to exchange advanced technologies and innovative achievements; and to seek opportunities for cooperation with down-to-earth experience and transformative thinking.

The conference will focus on the new development of the international market of tooling industry chain. This conference is also a comprehensive demonstration of the achievements of tooling technological research and its application. It will be a grand international exchange conference of key elements of tooling industry, such as die and mould manufacturing, material application, and technology and equipment. It is also an important activity to demonstrate global tooling industry supporting the development of manufacturing industry.

The 16th ISTMA World Conference will be held in Shanghai, China in June 9-13, 2020 for a four-day period.

PtSA to attend the ISTMA World Conference 2020

We are planning for at least 30 of our members to attend this very important conference in Shanghai, China.

We are currently negotiating special deals on flights, insurance, and accommodation, and we are also arranging for tours to manufacturing facilities in China, for the benefit of our members.

We will shortly be circulating more information regarding the costs, the proposed itinerary, the conference programme, the visits to factories etc.

Please consider joining this “Tour to China”.



PtSA Hosts successful 4IR Convention

PtSA hosted the first Future Production Technologies Convention in Cape Town at the end of July 2019, with a number of national and international experts giving presentations covering topics such as Overview and Positioning of 4IR, Industry 4.0: an African Perspective, Additive Manufacturing: its impacts on Tooling Systems, Skills development for 4IR, Nano and Biotechnology: its potential impact on Manufacturing, Assembly Systems for the 4th Industrial Era, Economics of 4IR, to name a few.

To introduce the presentations which were given at the Convention, we include some slides from the presentation Overview and Positioning of 4IR by Dr Harry Teifel (Platform Leader, Progressus) which gives a good explanation of the Fourth Industrial Revolution (4IR)

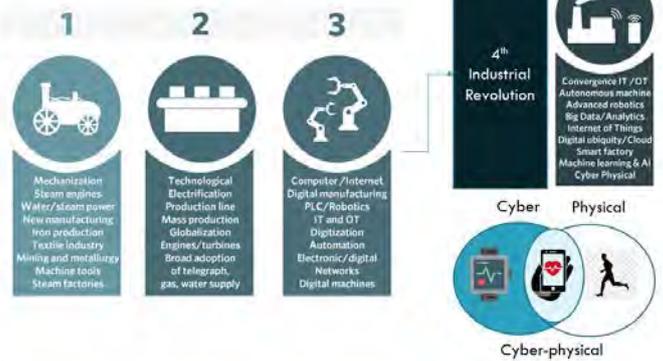


Dr Harry Teifel, presenting at FPTC2019

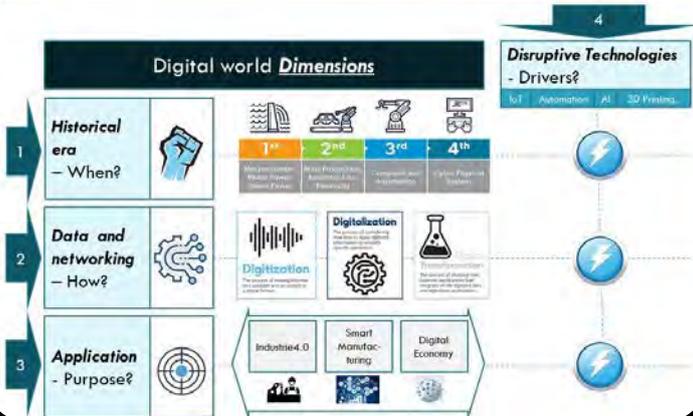
4th Industrial Revolution (4IR)

Where is 4IR taking us?

In 4IR Cyber meets Physical; everything becomes Cyber-Physical



The digitalized world is multi-dimensional but connected



Multiple drivers lead to massive change and a need for renewal

Various 4IR causes and drivers		Massive impact	
	Digitally empowered, demanding and information-savvy clients		Massive increase in all competitive pressures
	Combined and reinforcing effect of disruptive Technologies		150 year-old practices become redundant
	Accelerated rate of change and need to respond to environment		Complexity grows exponentially
	Network effect both its opportunities as well as risks		Need for re-invention

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Closing Remarks from Peter Erasmus at the Convention

Peter Erasmus, CEO of Directech (Pty) Ltd, responded to the question from Tapiwa Samanga (CEO, INTSIMBI Future Production Technologies Initiative and Programme Director for the Future Production Technologies Convention) during the Interactive Discussions, *“when many of your peers left the country during 1993, you stayed and built a successful company, what made you successful and how do we replicate this success in other companies?”*

Summary of response from Peter *“It is true that many of my peers left the country at that time, including my business partner. I had the choices of either quitting or to start a business. I chose to start a business, in spite of many of my friends saying that I would be committing economic suicide if I start a business in those difficult times. However, I had faith in the future, in spite of the difficult times, stayed focused, and stayed positive, and managed to build a successful business.*

As I did in 1993, we must stay focused and positive in difficult times. We must analyse all the information available and make informed decisions.

It does not come easy and requires lots of hard work and many long hours. I still spend many long hours in the business even after 25 years in business.”

Directech (Pty) Ltd is a mechatronics innovation and development company that specialises in building industrial automated machines, robotics solutions, nut running solutions, automated guided vehicles and aluminum kit building solutions.

Directech is a member of PtSA, serving on the EXCO of Gauteng PtSA.

Their moto is “Impossible is an Opinion”

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Impossible is an Opinion
DIRECTECH
Industrial Mechatronic Solutions

PtSA Members Attending the Convention



PtSA AGM Elects New Chairman



Emile Coetzee

Emile Coetzee, MD of Capewell Springs and Metal Pressings, was recently elected as the **Chairman of PtSA** at the AGM which was held in conjunction with the recent Future Production Technologies Convention.

Based in Cape Town, Capewell Springs and Metal Pressings was established in 1981 as a manufacturer of metal pressings, wire springs and wire forms.

Emile joined the company in 2015 after a very successful career at Hybrid Media Solutions a leading manufacturer of media packaging and printing, where he was able to triple the turnover of the company within 3 years, and establish a factory in Johannesburg.

He has a very good understanding of the need for manufacturing in an economy, and also the need for a strong industry association which can support the collective interests of its members.

Since joining Capewell Springs and Metal Pressings, he initiated the company's participation in the NTIP/WBA Benchmarking Programme as well as the Productivity SA "Workplace Challenge"

programme. As he said at the time of the NTIP/WBA projects "*the Benchmarking exercise really made us aware of our shortcomings and potentials, and the Intervention Project helped us with the implementation and execution of the needed changes.*"

In addition to initiating the company's participation in these programmes, Emile has pioneered several new initiatives at Capewell, including an attendance incentive program, countering the ever ongoing absenteeism problem in manufacturing as well as a 'new idea' incentive scheme, encouraging new ideas to come from all corners of the factory and then there is the more recent 'new business' incentive offering a commission to all employees bringing in new leads or business.

Emile indicates that he is very honored to have been elected as Chairman of PtSA, and will do his best to work with the Board of Directors and management of PtSA to ensure that the Association fulfills its mission, for the benefit of its members.



PtSA AGM Elects a Patron



Sisa Njikelana

Sisa Njikelana, MD of **Mesereti International**, was elected to the position of Patron of PtSA at the recent AGM.

This new position will help with positioning PtSA as the strong representative body **of choice**, in the Production Technologies industry in South Africa, with government authorities **and other stakeholders in the manufacturing sector**.

Sisa, having been educated at Oxford University where he received a Diploma in Applied Social Studies and also holds a certificate in Leadership Communication from **Rhodes University**, is a former Member of Parliament, having served on various committees and task teams. He served on the Portfolio Committee on Energy as the Chairperson and served in the Portfolio Committee on Trade & Industry for 5 years. He has been involved in economic development initiatives and running empowerment workshops for economic activities and leaders, **including stakeholder engagement with various energy industry organisations, to name a few.**

As a Senior Policy Advisor and Industry Specialist for Phase II of the South African Industrial Energy Efficiency Project in the National Cleaner Production Centre (Department of Trade and Industry), he is proud to have been involved in addressing issues of sustainability, the environment and economic growth. He is passionate about local economic development in general, but specifically around leadership development, as well as ensuring community participation in developing of initiatives.

His background and experience places him in a good position **to add real value to the strengthening of the Association and to assist with guiding its members towards a better understanding of the 4th Industrial Revolution (4IR).**

He views the role of production technologies as very crucial to revitalise South Africa's manufacturing sector with special focus on maximising quality of products and reduction of production costs - hence the strategic importance of PtSA.



Emile Coetzee, National Chairman of PtSA, welcomes Sisa Njikelana as the elected Patron of PtSA

Cape Metal Pressings Expands

Cape Metal Pressings, a member of PtSA, is expanding its operations due to an increase in demand from its customers. The company is one of the last metal pressings companies remaining in the Western Cape, and this increase in demand from both local and international customers is a good sign of confidence in the future.

According to **Gerald Stark**, owner/manager of Cape Metal Pressings, the recently expanded premises at their Capricorn Business Park facilities in Muizenberg, are still not large enough, and thus they are busy acquiring the property next door.

They have recently installed a new 200 tonne Yangli Metal Press, with associated material handling and decoiling equipment, and a new welding machine, in addition to the other Yangli presses which were installed in 2017.

Gerald also has plans to install a 2nd Toolroom in the new area, in close proximity to the new presses, in order to service the larger press tooling, while the original toolroom will continue to service the smaller presses.

Cape Metal Pressings, which employs over 40 people, supplies metal pressings to local customers such as Torre Automotive, SJM Flex in PE, Senior Automotive and BettaFence in Paarl, as well as international customers such as Bergvik Raised Flooring in South Africa, USA and Sweden. They also supply components for a low-cost stove which is assembled in Lesotho. Some of the tooling for this stove was outsourced by Cape Metal Pressings to **Dramco Tooling**, a member of PtSA.



View of the original production area of Cape Metal Pressings



View of the recent expansion at Cape Metal Pressings



Gerald Stark in front of the new Yangli 200 tonne press



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PUM Netherlands Senior Experts

PtSA and PUM Netherlands Senior Experts have concluded a partnership agreement, with the main objective of furthering the technological and business advancement of PtSA members.

PUM Netherlands Senior Experts is a Dutch organisation which offers knowledge and expertise in 35 sectors of the economy. It is made up of retired experts who share their knowledge on a voluntary basis with entrepreneurs and business people in more than 30 developing countries. The organisation was founded in 1978 by the Confederation of Netherlands Industry and Employers and the Dutch Ministry of Foreign Affairs, and to date has assisted over 40,000 businesses worldwide, including a number of businesses in South Africa.

For more information please visit www.pum.nl

Any company wishing to apply for this consultancy support, can contact the PtSA office or apply on-line on the PUM website.

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PtSA Members Co-Operate

As mentioned in another article in this Newsletter, **Cape Metal Pressings** outsourced some of its tool manufacturing requirements to **Dramco Tooling**. This is a good example of networking taking place amongst the members of PtSA.

Dramco Tooling not only produces press tooling but also plastic injection and blow moulding tooling, as well having production facilities for plastics injection moulding and for metal pressings.

This relationship between Cape Metal Pressings and Dramco Tooling is a good example of “co-ompetition”, where companies which are in competition with each other, can co-operate in order to ensure that an order can be won, and that both companies benefit.

We will feature an article regarding the new factory built by Dramco Tooling in a later issue of the Newsletter



Garth Prinsloo, Toolmaker (left) & Kevin Dramat, Owner of Dramco Tooling, with one of the tools for Cape Metal Pressings



View of one of the tools manufactured by Dramco Tooling

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Jendamark Automation delivers new Differential Assembly Facility

Jendamark Automation, a member of PtSA, has recently completed the design, manufacture, and testing of a differential assembly line for a multinational customer in the USA.

This facility has the capacity to produce 75 differential assemblies per hour, once installation and final testing have been completed in the customer’s plant. The facility makes use of Jendamark’s fully integrated software platform, called ODIN, which drives the efficiencies on the production line, and thus ensures the most cost effective production output.

During the recent **Eastern Cape PtSA Networking Evening**, which was hosted at the Jendamark facility in Port Elizabeth, the guests were shown the assembly line which was in its final stages of testing before being shipped to the customer.

The guests enjoyed viewing the assembly line and also the manufacturing facilities of Jendamark. We thank the management at Jendamark for this opportunity to host the Networking Evening at their facilities.

According to Yanesh Naidoo, Sales and Design Director, Jendamark Automation, the demand for new technology is increasing on the world market, and South African companies have the opportunity to participate in this market. As he says, “we must not compete amongst the 50 million people in South Africa, but rather compete against the 7 billion people in the world.”



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Quinton Uren, MD Jendamark, showing guests around the facilities at Jendamark



Yanesh, showing guests around the Differential Assembly Facility

Injection Technik Expands

Injection Technik, a PtSA member in the Eastern Cape based in Port Elizabeth, has expanded its operations to East London.

With the launch of the new Mercedes Benz W206 project in 2021, the management of Injection Technik decided to establish a facility in the East London Industrial Development Zone, to better service 1st Tier Suppliers in the region.

Injection Technik already has a customer base of suppliers to Mercedes Benz in the region, such as Yanfeng Automotive Interiors and Froetek, and thus it was a natural progression to expand into this region to offer services to the growing 1st Tier Supplier base.

The aim of the Injection Technik facility is to offer a quick turnaround time for repairs and maintenance to injection moulds and press tooling, as well as a general support role to companies in the greater East London region.

It is with this in mind that the facility has been equipped in order to offer all types of precision machining as well as specialised

welding with their microwelding equipment, capable of welding on split lines and cutting edges of dies.

The facility is headed up by Manuel de Villiers who has years of experience in the engineering environment. Manuel and his team are on call 24 hours a day and look forward to catering to any and all of the customers requirements.



Manuel de Villiers in the new facility in East London

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MECO Engineering Develops unique Shopfloor Control System

A very problem in many toolrooms and engineering companies is managing job costings, overhead allocation lead times and customer liaison at a shop floor level.

To overcome this problem, MECO Engineering has developed a unique barcode system, which dedicates a bar code to each job or project on the Shopfloor, which supplies information in real time related to the progress, cost and location of a job at any given time.

Established in 2007, MECO Engineering located in Uitenhage in the Eastern Cape has a modern, state of the art facility, offering precision machined and turned components, custom tool and die manufacture for a total solution, and a 24 hour breakdown service for tooling. A member of PtSA, they currently service industries such as the tyre, food, bottling, textile, paper, agriculture and automotive.

The barcode system developed by MECO Engineering, named TOMO, links the costing of a job or project, to time worked, and factors in all aspects of the manufacturing process, as well as the overheads involved. At the same time the system can keep the customer informed of the progress of his job or project on a real time basis.

According to Marco Ferreira, MD of MECO Engineering, this system will improve management on the Shopfloor, will improve productivity and will offer their customers an improved feedback on the progress of their jobs or projects. He indicates that MECO Engineering will shortly offer the system for sale to other companies. More details will be released shortly.

MECO Engineering were one of the companies in the Eastern Cape which recently underwent the NTIP/WBA Benchmarking process and Intervention Project. According to Marco Ferreira “*these interventions assisted the company to streamline many of the processes, create more productive methods and implement many cost saving ideas. We fully recommend that companies undertake this process through the NTIP/WBA*”



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Marco and Paula Ferreira

Productivity SA Joins PtSA as a member

“Productivity SA is established in terms of Section 31(1) of the Employment Services Act N° 4 of 2014 as a juristic person with a mandate to promote employment growth and productivity”

After a long relationship between Productivity SA and members of PtSA, Productivity SA has joined PtSA as a member organisation in order to bring greater value to PtSA members. We welcome Productivity SA as a member of PtSA.

Following on from the article written by Albert Brink, Regional Manager Western Cape, in our Jul/Aug Issue, we plan to include such articles in this and future Issues of the PtSA Newsletter, centred around productivity and improvement possibilities for companies belonging to PtSA.

The following article, also written by Albert Brink, deals with “time, a source of competitive advantage and money”

TIME

A source of competitive advantage & money!

TIME is a fundamental business performance variable - a critical success factor. Everybody appreciates a fast - quick turnaround times - supplier who always deliver on time and in full. People are even prepared to pay a premium price to a responsive and reliable supplier.

Everybody accepts that the reduction of Cycle Time, Lead Time, Set-Up Time, Idle Time and Downtime (to name but a few) is of importance if the business is to prosper. People seldom disagree with the notion that ‘Time is money’. After all, money is made by providing the maximum output per unit of input which includes ‘time’. (Monitoring the ‘output’ to ‘input’ ratio is the foundation of productivity.)

If ‘time’ is regarded as a key driver of business success, why then is it not measured and controlled with the same discipline and accuracy as sales and cost are measured and controlled?

Well, ‘time’ is a less visible business performance variable. ‘Time waste’ differs from the waste of material in that ‘wasted time’ does not litter the floor like material waste does – there are no off-cuts! ‘Time’, unlike material, cannot be retrieved, re-used or recycled. Once consumed, for value adding or non-value adding purposes, its gone.

Why is a time-based competitive strategy worth considering?

George Stalk and Thomas Hout in their research-based book, ‘Competing Against Time: How time-based competition is reshaping global markets’, formulated four ‘rules’ that demonstrates the return on investment that can be attained via the reduction of ‘lead time’ in operations.

1. The **¼ : 2 : 20 rule** states that if you quarter your lead time you will double (x 2) your productivity and take 20% off your cost base. Assuming it is true, research suggests that it is then worth actively managing the ‘flow’ of orders or requests through the manufacturing- or service delivery process.
2. The **0.05 to 5 rule** states that value is added to products and services in the manufacturing or service deliver process only 0,05 to 5% of the total lead time. This ‘rule’ seems to indicate that most of the total lead time is consumed by non-value adding issues such as delays, rework, idle time, and related issues. Focussing on reducing delays, rework and

idle time can improve ‘flow,’ reduce lead time and improve operational and financial performance.

3. The **3 / 3 rule** states that the ‘waiting time’ that products or services are subjected to during the process of manufacturing or service delivery process can be divided into three sections namely:
 - Waiting time stemming from the completion of an order of which the product / service is part of or the time stemming from waiting for an order or service ahead of the current one to be completed.
 - Waiting time stemming from physical or mental/intellectual rework that must be done.
 - Waiting time stemming from management decisions regarding an order or service request that needs to be finalized before the actual delivery process can proceed.
4. The **3 x 2 rule** which states that businesses that manage to reduce the consumption of time during the product or service delivery processes can expect to achieve growth rates of three times the average of their industry with two times the industry profit margins. Exciting prospect?

The four rules put forward by George Stalk and Thomas Hout clearly indicate that much value can be derived from reducing the time consumed during the process of product or service delivery.

Reducing product or service delivery Lead Time can be achieved in several ways. **Consider consulting Productivity SA about a facilitated KAIZEN workshop** before you embark on a ‘Lead Time Reduction’ journey - a journey filled with the promise of meaningful financial and non-financial returns.

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Albert Brink

Sustainability - the Question of Plastics

Plastics and the damage to the environment caused by plastic waste, is very much in the news lately. **But, is the problem a problem of plastic, or one of human behaviour?**

Can the world live without plastic? Consider food packaging, the medical industry, the pharmaceutical industry, the automotive industry, to name a few, which we are dependent on in our daily lives.

Can we imagine living without plastic products?

Thus, plastic products are vital for our modern society. **However, plastic waste is a real environmental disaster.** This disaster is being caused by us humans and our habit of indiscriminately discarding plastic waste which can end up in rivers, lakes, oceans, forests, landfill sites, you name it. We find plastic waste virtually everywhere. **We as, humans, have to take responsibility and to take action.**

One company that is leading the way in taking action is Clariter, an innovative global group with a range of patented technology and clean-tech solutions to convert plastic waste into high-grade, pure products - waxes, oils and solvents.

“Turning trash into treasure”

The technology was developed 15 years ago and a pilot plant was established in Poland to industrialise the process. Between 2016 and 2018 an industrial scale plant was established in East London, South Africa, situated in the Economic Development Zone, with a design capacity of 1,000 tons per annum.

According to **Ms Vuyo Sikwebu, MD of Clariter**, plans are in place

to replicate the plant with JV Partners and 3rd party licensing in suitable locations across the globe with design capacities of 50,000 tons per plant.

She says: *“with our patented technology we will make a significant impact on reducing the plastic waste on our planet, and at the same time create jobs in the supply chain for plastic waste, in the conversion process of plastic waste into pure products, and in the industries using our products as ingredients into their end products.*

This means industry now has not only access to products that are greener, but those that are proactively cleaning the planet. This is a true paradigm shift.

We are proud of the fact that the plant has been set up in East London allowing South Africa to demonstrate to the world its commitment to new technologies which drive innovation and sustainability across the globe.

Creating value for community is not an after-thought but our core business strategy.”

PtSA supports this and other initiatives to reduce the impact on the environment and ensure a sustainable future. We will continue to bring our readers information and articles regarding sustainability, both in business and in the environment.

For more information see www.clariter.com



Ms Vuyo Sikwebu



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Opportunities for Co-operation between PtSA and MEMSA members

MEMSA (Mining Equipment Manufacturers of South Africa) and PtSA are exploring possible areas of co-operation, for the potential benefit of the members of both organisations.

MEMSA is an industry cluster organisation based in Gauteng, with members in five of South Africa's provinces.

PtSA's members have the potential to assist MEMSA members with the specialised engineering and production technologies required to deliver cost effective, high quality and innovative products to the mining industry.

The contact between the organisations started when Freddy Mugeru, the Chairman of MEMSA, attended one of the PtSA Gauteng Networking Evenings. After various discussions between Freddy and John McEwan, CEO of PtSA, it was decided to introduce the members of each organisation to each other in order to foster mutually beneficial co-operation between the members, particularly in the current times when the South African mining industry is facing decline with current technologies.

MEMSA first started taking form in 2015 when a group of OEMs brought together through the then dti's Resource Capital Goods Development Plan study recognised the need to have a voice and representation as a cluster. The cluster model further held the potential for undertaking joint business development activities and exploring opportunities for technical collaboration between members - while maintaining a competitive context.

MEMSA benefited from funding through the dti's pilot Cluster Development Programme over 2017-9, and officially launched with the Mandela Mining Precinct, where it is hosted, in September 2018. The cluster has grown from an initial 13 founder members to 34 and includes a range of manufacturers from emerging enterprises to large, established companies with international footprints, manufacturing equipment including hydro, hydraulic and pneumatic underground equipment, IT systems and software, mining consumables and components.

Advocacy is a key role of the cluster, and MEMSA has built good relationships with the Minerals Councils of South Africa, dti and DMRE. Its programmes offer members improved access to markets, ways to lower the costs of doing business, and opportunities for technical collaboration and innovation.

MEMSA members are constantly innovating to remain relevant and competitive in the market for mining equipment which is rapidly evolving towards mechanised mining methods and digital integration. MEMSA was formed at a time when the crash in commodity prices was heavily affecting the industry; manufacturers of equipment for gold and platinum mining remain under pressure. With stiff competition from major international OEMs, MEMSA and its members have to be innovative in their approaches to domestic and foreign markets.

This will open up many opportunities for the production technologies industry to co-operate with and assist the mining equipment manufacturers. In addition, Mining Charter III has introduced new opportunities by strongly encouraging procurement of South African manufactured goods, with 60% or more local content.

Despite the localisation impact of the Charter, the reality is that South Africa's mining industry is not indefinitely sustainable (as least with current technologies), and some of our mining sectors such as gold are already in decline. It is essential that members' products, prices and service offerings are competitive domestically, regionally (within SADC) and beyond, and that members grow exports as a part of their 'sales basket'. Becoming increasingly competitive will require technological innovation to meet the needs of a modernising mining industry where the 4th Industrial Revolution is rapidly integrating digitisation. It also requires cost and energy efficient production tools that deliver high quality products.

Accordingly MEMSA member companies require equipment and tools that:-

- Lower costs
- Increase efficiency & productivity
- Improve quality, and
- Improve health and safety in the factory environment.

In addition, as these tools themselves evolve, further co-operation will be needed to make sure that employees who will use the equipment, have the requisite skills.

We look forward to facilitating further developments with regard to building the relationship between MEMSA and PtSA, **leading to increased local manufacturing.**



Freddy Mugeru and John McEwan at the Future Production Technologies Convention



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Momentum Corporate Research Highlights How Distracted Employees Affect Company Productivity

South African businesses are losing up to a staggering R89 billion per year due to unproductive employees. According to Elaine Wright, Wellness Strategist at Momentum Corporate, new research by Momentum Corporate, reveals that “**presenteeism**” - the phenomenon which refers to when employees are physically at work, but fail to be productive due to distractions - is costing local businesses as much as 5% of their Gross Operating Profits (GOP).

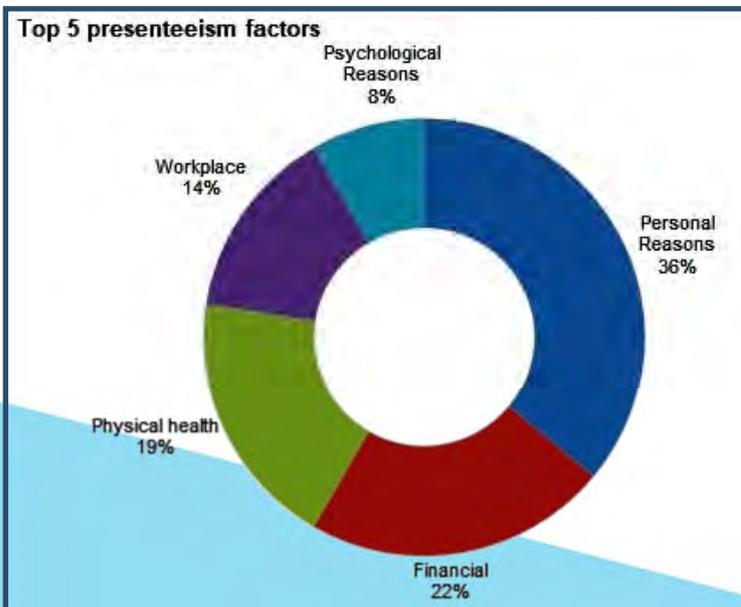
The Momentum Effective Employee Index - a first of its kind in South Africa - shows that local companies are suffering these costs of presenteeism over and above the more well-documented costs associated with absenteeism - estimated to be around R25 billion per year. This latest research suggests that **presenteeism** is costing businesses even more than **absenteeism**, and is far more difficult for employers to identify and understand.

Until recently, very little research had been done in South Africa on the negative impact of presenteeism on employee productivity. These results will therefore be invaluable in helping employers to understand why employees become distracted at work, quantify the costs of presenteeism, and take proactive measures to intervene and reduce its impact.

The results show that, on average, 27% of employees go to work but don't always work effectively because they are distracted at some point as a result of their workplace, physical and/or psychological health, personal issues or financial stress.

The research uncovered five key drivers of presenteeism, which were ranked according to prevalence (number of employees impacted), as well as the average time that they were distracted per reason. The results are depicted below:

- Personal reasons 36%
- Financial 22%
- Physical health 19%
- Workplace 14%
- Psychological reasons 8%



As shown in the list above, personal reasons, which encompasses sick family members, bereavement and family/relationship problems, is listed as the top driver of presenteeism. It is then followed by financial matters, such as over-indebtedness and lack of savings for unplanned expenses. Physical and mental health distractors, such as hypertension, headaches, flu as well as depression, burnout and mental exhaustion, are also serious causes of distraction in the workplace.

The good news is that there are a number of proactive measures that South African employers can take to reduce the impact of these presenteeism drivers. For example, an effective Employee Assistance Programme can be instrumental in helping employees to cope better with their personal issues and improving emotional health.

Other interventions for reducing presenteeism could include the introduction of employee debt management interventions or financial education programmes, as well as flexible insurance benefits that reduce over insurance and channel more money towards long-term savings. Other successful company initiatives include reward programmes that encourage healthier lifestyles, increased access to private healthcare cover and telehealth services for health issues that do not require a face-to-face consultation.

Momentum Corporate is the division of Momentum Metropolitan Life Limited within the JSE-listed financial services group Momentum Metropolitan Holdings, that engages with large and medium sized businesses to enhance the Financial Wellness of their employees. Momentum Corporate offers a holistic range of employee benefit solutions such as Retirement and Insurance benefits, Health Management, Workplace Risk Management, and Business Solutions.

PtSA is currently in discussion with Momentum to determine how to possibly assist PtSA members with employee assistance programmes. We will keep our members informed of the progress of these discussions.

momentum
corporate



Elaine Wright

Considerations for Product Development & Innovation



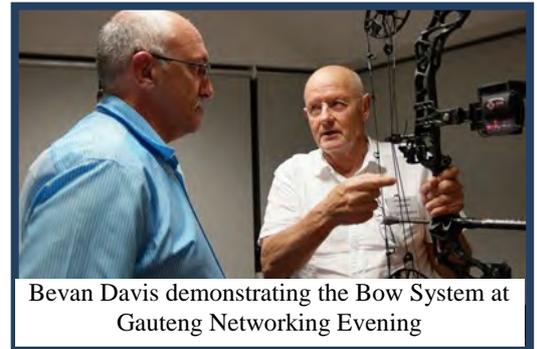
At our recent Networking Evening in Gauteng, **Bevan Davis**, MD of

Conver-Tek a member of PtSA, gave a presentation of what inventors or companies should take into consideration when developing new products or going through a process of innovation.

Bevan has a vast amount of experience in this field, having developed such products as the innovative Kreepy-Krauly Pool Cleaner, and more recently a world first laser-sight for use on hunting/target bow systems, which has been launched onto the international market.

Bevan's presentation identified the following key points to be taken into consideration:-

- Why will your product succeed
- What are the opposition products
- Potential market
- Budget for development, prototyping, and marketing
- Potential market share and target pricing
- Forecast manufacturing costs
- Are there any existing copyright patents or registered designs
- Product concept design should take aesthetics and ergonomics into consideration
- Design process, 3D Modelling and Prototyping
- Protection of your idea



Bevan Davis demonstrating the Bow System at Gauteng Networking Evening

From proven experience over many years, Bevan concludes the following:-

- Double your best engineered assessment of Time to Market.
- Double your best and most accurate budgets for the project.
- This can, or may be close to budget and time, based on a refinement of existing product available. However, a new concept and development from grass roots never works out on time or within the budget allocated.
- You need to be realistic and self-critical of the process, have massive confidence in your R&D, and be visionary. However, you must always remember that there are never any guarantees of success, sales, or market share, irrespective of your best product research, market analysis, sales volumes and best intentions.

We wish all product developers and innovators success with their endeavors.

Please feel free to contract Bevan for any advice you may need.

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Wagner Systems shows Growth

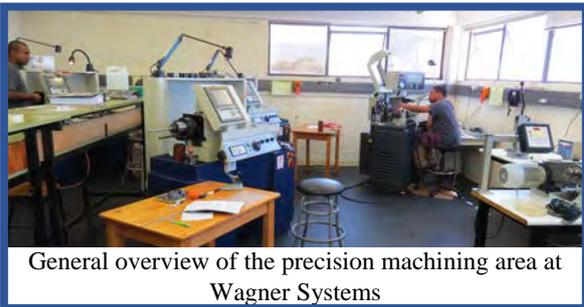
As was reported in our July/August 2018 Issue of PtSA Newsletter, Wagner Systems, a member of PtSA, has undergone a Turnaround Solutions programme with Productivity SA, one of the partners of PtSA.

Wagner Systems (Pty) Ltd, a privately owned South Africa based company, specializes in the production of fine mechanics components and assemblies. They have extensive micromachining capability, produce and deliver parts and assemblies, but also provide customers with advice on design for manufacturing issues, prototype development, and series production. Currently, they do contract manufacturing mainly for the medical device and defence industries.

The challenges for the team from Productivity SA and Wagner Systems was “how to get Wagner Systems profitable on a sustainable basis”

The team focused on the following areas for improvement:-

- Machine utilization
- Factory layout
- Process flow
- Work instructions
- Data capture and use of data
- Bottleneck reduction
- Waste reduction
- Employee skills improvement



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- Employee involvement

Some of the outcomes achieved to date by Wagner Systems:-

- Profitability:-
 - Loss in year ending February 2016 (the year the company was acquired)
 - Profit in year ending February 2018 which has been sustained
- Improved productivity - increased competitiveness - increased orders and turnover
- Improved productivity - increased capacity - increased output without increasing machines
- Increased staff from 25 to 28
- Improved employee morale
- Improved employee skills

Future plans:-

- Increased technology, automation and digitization
- Continuous improvements including overall layout and flow of material
- Possible purchase of additional machine tools
- Further training
- Improved working conditions for production personnel



Lasni Millar MD (left) & Giuseppe Geldenhuys (Technical Manager) demonstrating the new shopfloor control system

Stellenbosch University Teaches Students Practical 4IR Skills

At a recent open day held by **Stellenbosch University Faculty of Engineering**, students presented their manufacturing systems projects to demonstrate the practical utilization of the Internet of Things (IoT) devices in everyday applications, as well as 3D prototyping.

Professor Andre van der Merwe, the Associate Professor: Industrial Engineering - Resource Efficiency Engineering Management in the Faculty of Engineering says that this programme is bridging the gap between the academic and the practical worlds, in order to ensure that industry has a pool of practical thinking graduates from which to source their future engineers.

The Idea 2 Product lab, part of **Vaal University of Technology (VUT)**, was the main sponsor for the event and 3D printed all the student projects. **Mr Heinrich van der Merwe**, Operations Manager, VUT, says that it is important that graduating engineers can apply practically applicable skills, and that the VUT Idea 2 Product lab is ideally positioned to allow conceptual ideas to become a reality.



From left: Prof Stephen Bosman (CPUT), Mr Heinrich vd Merwe (VUT), Prof Oliver Damm (SU), Prof Andre vd Merwe (SU) & Dr Malan van Tonder (VUT) at the recent open day



Locally Developed & Manufactured Machine Exported around the World

Snyman Tool & Die was selected by Micron Technologies in 2015 to build a product that they had designed for the hydraulic cylinder repair market. Today, Snyman Tool & Die is the approved manufacturer of the Micron Cylinder Stripping & Test Bench.

This product is used for stripping, assembling and testing of large hydraulic cylinders. These machines are currently been sold internationally to countries like Canada, Africa, Australia and Russia to name a few and it is rated the best in its class for cylinder repair equipment. With a total of 16 machines produced to date and further 6 currently in production.

According to Koos Snyman, the founder and MD of Snyman Tool & Die, the design of the machine demonstrates the true capabilities of South African manufacturing industry and its ability to be a global leader in this form of technology.



Snyman Tool and Die was one of the first companies to embrace the Enterprise Development program offered by the NTIP. After the initial benchmarking by the NTIP/WBA, an intervention project was implemented through the NTIP/WBA, which has improved material flow, production control, quality and efficiencies.

The core industries serviced by Snyman Tool & Die are namely mining, automotive, agricultural, boiler making, machine manufacturing, precision engineering, 3D printing, precision shooting accessories and factory repairs & maintenance.

Today, Snyman Tool & Die is proudly ISO 9001:2015 certified and has its customer focus at the heart of the business.



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Co-Operation between various people & organisations to develop Para-Tube

After being involved in a major car accident in 2011, which resulted in her being wheelchair bound for a period, **Ms Portia Mavhungu** developed the **Para-Tube**.

This innovative device is a retro-fitted seat which fits into any existing wheelchair, and by using disposable bio-degradable bags, becomes a built in toilet which allows the person in the wheelchair to be independent and retain their dignity. It also lessens the assistance required from a care giver.

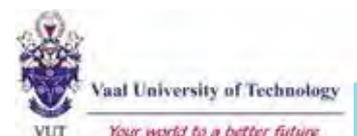
Funding was received from the Technology Innovation Agency (TIA) in

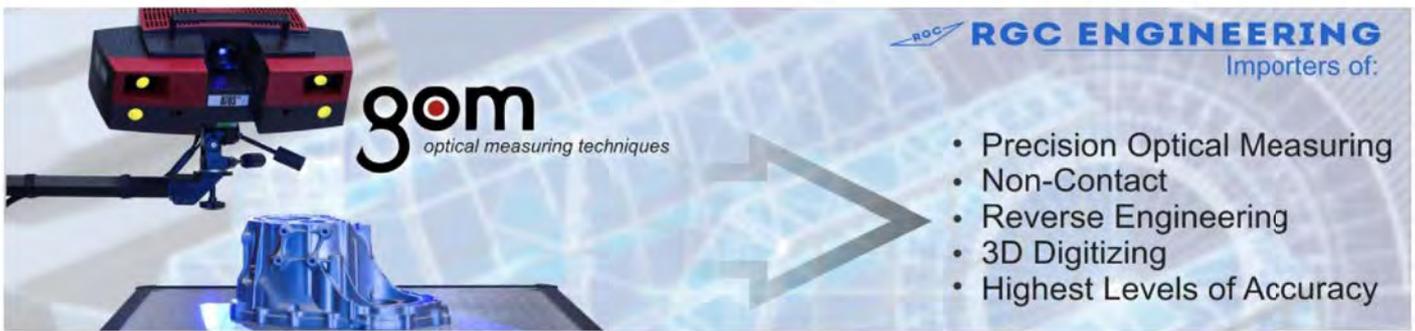


2015 for the manufacture of 5 prototypes, which were manufactured by Vaal University of Technology (VUT). These prototypes have been tested and the concept has proven itself, leading to the application for patents in 12 countries.

An outsourced manufacturing contract has been signed with Snyman Tool & Die, a member of PtSA, to manufacture the first 20 seats and 1000 disposable bags for extensive field trials and accreditation of the design, before full scale production of the Para-Tube begins.

The concept has won the Innovation Hub gap award, GCIP 2018 Social Innovation Award, and the GIBS innovation Award 2018 to name a few.





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