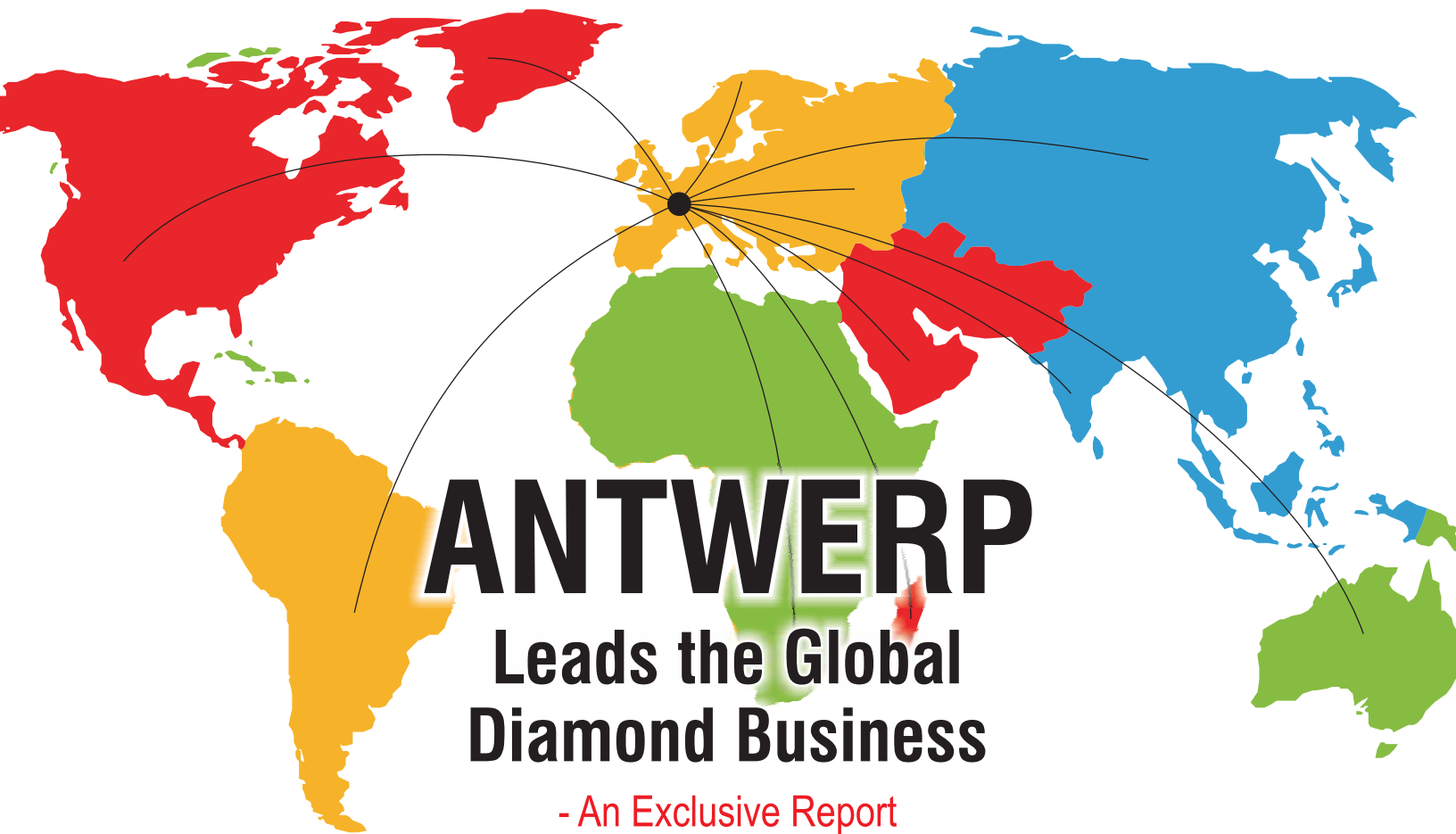


The New Jeweller

Taking the Trade to new Dimensions



Importance of Technology Implementation



Paul Davis

The diamond supply chain is an impressive series of linked steps and markets starting with retrieval of rough stones from mines, and ending with the delivery of beautiful gems to the final consumer. The entire process involves many stages, companies, transactions, people, and movements of high value stones between global locations. To manage this process companies until now have largely relied on layers of manual and barcode procedures. This results in inefficiencies, lack of control, human errors and delays, confusion, poor customer focus and responsiveness, and increased costs. However changes and pressures in the

industry are compelling these companies to increasingly look to other technologies and processes to be updated and modernized through the use of technology and further automation. Radio Frequency Identification (RFID) is one such technology that can and is revolutionizing the diamond supply chain. It is anticipated that technology and automation will be employed at various and numerous points in this supply chain. The adoption of this technology will occur at different times for different stages and processes of the supply chain, but ultimately all these technologies will converge, linking with and between each other to transform the diamond industry supply chain.

SpaceCode is a specialist RFID technology company that provides a complete business solution - PLEXUS™ - comprising advanced software, innovative hardware, and comprehensive wireless RFID workflow automation technology. The system achieves key requirements for reliability, efficiency and security that is mandatory for diamond (and jewellery) companies – producers, manufacturers, sightholders, wholesalers and retailers:

- Automated 24/7 track-and-trace
- Inventory visibility enterprise wide
- Indisputable stock control
- Seamless process efficiency
- Continuous monitoring and security
- Comprehensive audit trail and reports

SpaceCode SmartDevices:



PLEXUS is the leading system of its kind in the diamond industry – sophisticated but simple to use.

Hardware:

RFID tagged diamonds or jewellery are placed and/or stored in SpaceCode's specially designed smart devices – SmartBoxes, SmartCabinets and SmartSafes. The smart devices use SpaceCode's advanced RFID technology to communicate with the software and network. This data provides all the information regarding what inventory is in the smart device at any point in time, who handled the inventory, when and where. The PLEXUS™ RFID system continuously scans and knows its contents. Uniquely, it can read thousands of diamond parcels stacked in very close proximity in any orientation with 100% reliability, in a secure system that is easy to use. The smart devices can be deployed globally anywhere in the office or factory, on desktops, or remarkably even in safes – no one else can equal the physics of this RFID performance. Units can be stacked as a single unit or as multiple units on top of each other. When located in the safe, the SmartSafe continues to function even when the safe is closed. This means that it operates as an intelligent safe within a safe, allowing wholesalers, manufacturers and retailers to track their diamond stock, value and other information no matter where they are in the world. A biometric/finger print identification system is needed for access to any of the smart devices.

Software:

The software is the brain of the system that links and analyses all the data in real time, offering incredible visibility, traceability, control and analytics. Stones, movements, and transactions are monitored and analysed in real time. Alerts are triggered when unusual or prohibited activity occurs such as when a door is left open too long, removal of exceptionally valuable items or removal of goods beyond the permitted value limit. The software provides business intelligence allowing better and faster decisions to be made and can also generate real time activity reports and data in regard to any stock movement:

- Total inventory and its value
- Stock location and movements anywhere in the world in real time, who accessed it, and when
- Key employees' activity and transactions on demand
- Stock situation in a particular global office
- Movements of a particular stone
- Security alerts for any breach of rules
- Full audit trail of who accessed the diamonds, when they accessed the diamonds, what they did with the diamonds, and where.

Software Screenshots:



The advantages delivered by the PLEXUS™ system are impressive, including an ROI of greater than 200% for companies! This is driven by the following key benefits for various stakeholders in the diamond and jewellery supply chain:

- **Sightholders & Manufacturers**
- **Automation** – Stock counted automatically 240 times/per day or more.
- **Visibility** – Stones identified and located anywhere, on demand.
- **Control** - Real time scrutiny of items, transactions, total value of goods insured.
- **Efficiency** - Processing time for major workflow processes fall significantly.
- **Monitoring and Security** - Software (alerts), smart devices, & biometric access.
- **Audit** - Immediate availability of current and historical global reports.
- **Business Case** - Considerable return on investment driven by workflow automation, staff efficiency, security controls, and insurance premium reductions (100% reduction in risk of being under insured) and higher level of sophistication in the way that inventory is managed.
- **Insurer**
- Risk of future losses diminished

Earlier detection of any irregularity eg mysterious disappearance.

Automated audit trails to know who, what, and where if eg stone missing.

Employees less likely to entertain questionable practices.

- Know at any time whether total value of goods exceeds the insured value.
- Settlement of claims accelerated due to available data and audit trail on hand.
- Insurance premiums reduced reflect above facts.
- **Safe Company**
- Intelligent safe within a safe.

- Continuous monitoring augments and provides safer, more secure environment for the storing of diamonds.
- Continuous visibility and biometric identification system increases security, tightens audit trails, and detects irregularities early.
- Heightened awareness reduces risk.
- **Diamond Industry**
- Technological innovation
- Productivity and efficiency
- Chain of custody and transparency
- Competitiveness
- Reputation

The importance of technology is something that businesses in the diamond industry are increasingly appreciating. The **SpaceCode PLEXUS™** system is already tracking hundreds of millions of dollars worth of stock for diamond (and jewellery) companies. Customers know where every single diamond is every minute of the day. The system is endorsed by the largest insurance companies in the world. This system monitors hundreds/thousands of closely stacked diamond parcels at any orientation even in metal safes. It is a new way of business for the diamond industry.

System Architecture:

