



RFID

Transformative Technology

RADLEY
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A **Radley Corporation** White Paper

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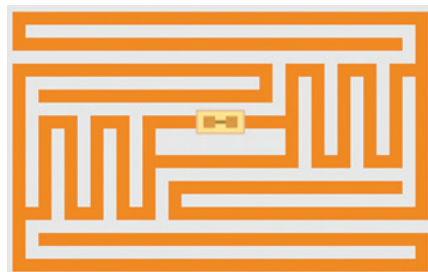


TRANSFORMATIVE TECHNOLOGY

Changing Manufacturing

— *is RFID the Competitive Advantage You Need?*

At one time it was enough to just streamline operations to become more “Lean”. And those lean initiatives helped many manufacturers get through financial crises and economic downturns. Process automation and barcoding made a significant impact, but even the right mix of efficiency and business systems isn’t enough with today’s advancements. One thing is clear, the true path to the future of manufacturing competitiveness is through emerging new technologies and the adaptations of old, existing technology such as RFID. But, do you trust it? RFID has been around for decades and it’s difficult to get a return on the costly and substantial investment, right? And is it even a viable option for your environment and materials? These are all valid questions humbly welcomed by RFID which



has been lingering in the shadows, ahead of its time, waiting patiently for this day to come.

THE HEAT IS ON

The digital and physical worlds have converged with manufacturing giving us some amazing transformative technology. Everything from 3D printing, Cloud computing and Big Data to intelligent machines and the Internet of Things have impacted the way performance is viewed and measured.

Customers expect lower prices, better quality, faster delivery and access to more data than ever before; while government and industry requirements have grown more invasive and complex. Valuable workers who have been around since the beginning are retiring and the next generation expects higher wages and modern tools & equipment. You’ve been tasked with finding a solution to these problems, all while domestic and international competition is still nipping at your heels. For many RFID seems like the logical next step in taking process automation further to increase production, reduce labor, improve efficiency and gain a competitive edge.

THE BLACK SHEEP OF TECHNOLOGY

Implementing RFID technology in the supply chain has been a topic of interest for years and many within the industry have recognized the need to adapt and are looking once again into technology and communications like radio frequency identification. However many operational and IT teams are wary of proposing a plan to executives initiating change

based on the success of a technology that has acquired such a bad reputation for being unreliable, expensive and complicated. Ironically, RFID has earned this reputation by the organizations who've implemented pilot projects over the years based on their belief that RFID can solve all their problems. There have been a variety of misconceptions of how RFID technology works leading manufacturers to anticipate a magical outcome, causing false hopes and disappointment.

Perpetuating these myths are multitudes of vendors and so called RFID Solution providers that hopped on the bandwagon within the last de-

cade to get in on the RFID market selling tags and readers. Rather than educate their customers, they encourage unrealistic expectations to land the deal; ultimately leaving organizations that have invested millions in technology they believed would solve their problems with an entirely new set of issues to contend with. It's easy to understand why RFID has gotten such a bad rap.

RISKS VERSUS BENEFITS

It's true there are some risks involved with implementing RFID, but there are risks introducing any new technology into a business. In recent research completed by Panorama Consulting

2016 Global Manufacturing Competitiveness Index rankings by country

2016 (Current)		
Rank	Country	Index score (100=High) (10 = Low)
1	China	100.0
2	United States	99.5
3	Germany	93.9
4	Japan	80.4
5	South Korea	76.7
6	United Kingdom	75.8
7	Taiwan	72.9
8	Mexico	69.5
9	Canada	68.7
10	Singapore	68.4
11	India	67.2
12	Switzerland	63.6
13	Sweden	62.1
14	Thailand	60.4
15	Poland	59.1
16	Turkey	59.0
17	Malaysia	59.0
18	Vietnam	56.5
19	Indonesia	55.8
20	Netherlands	55.7

2020 (Projected)			
Rank	2016 vs. 2020	Country	Index score (100=High) (10=Low)
1	(▲ +1)	United States	100
2	(▼ -1)	China	93
3	(↔)	Germany	90
4	(↔)	Japan	78
5	(▲ +6)	India	77
6	(▼ -1)	South Korea	77
7	(▲ +1)	Mexico	75
8	(▼ -2)	United Kingdom	73
9	(▼ -2)	Taiwan	72
10	(▼ -1)	Canada	68
11	(▼ -1)	Singapore	67
12	(▲ +6)	Vietnam	65
13	(▲ +4)	Malaysia	62
14	(↔)	Thailand	62
15	(▲ +4)	Indonesia	61
16	(▼ -1)	Poland	61
17	(▼ -1)	Turkey	60
18	(▼ -5)	Sweden	59
19	(▼ -7)	Switzerland	59
20	(▲ +3)	Czech Republic	57

Solutions it's estimated that over half of all Accounting, ERP, and CRM implementations fail to meet their objectives. The success or failure is dependent on a wide variety of factors including poor planning and preparation, not having clear objectives and lack of employee buy-in. Most of the time, the reason for failure has little to do with the actual technology itself. Bottom line, you can purchase the best solution in the world and it can fail if not properly implemented. Resolve these factors and the benefits of RFID far outweigh the risks.

Some of the most effective applications have been installed in the fields of supply chain management systems, transport and logistics. Whether it's to streamline WIP (work in progress), simplify logistics or track returnable assets such as racks and containers, one of the biggest advantages RFID has over similar technology such as barcode is the ability to read mass amounts of tags eliminating the manual labor needed to scan the large volumes of data involved in the supply chain. Not only does this allow companies to reallocate and decrease labor but significantly improve visibility for management and supervisors to identify bottlenecks and prevent unplanned events and down time. Integrating an RFID solution to communicate with ERP/business systems and other MES/WMS solutions dramatically extends benefits by increasing the amount of data for analysis. When implemented correctly, the potential benefits are vast and include everything from eliminat-

ing shrinkage to improved efficiency and customer satisfaction.

IT HAS ARRIVED

Truly ahead of its time, the concept of RFID preceded the sophistication of the tags, middleware and antennae required to make the solution a viable option for most organizations. Limited by the current technology, challenging environments and cost to manufacture, it has been a slow rise to the top for Radio Frequency Identification. But, cue the "Rocky" theme song, those in the RFID industry were fighters and never gave up modifying, testing and improving the technology hoping one day their time would come.

Common RFID Misconceptions:

"Tagging my assets, inventory or materials allows me to see in real-time as they move."

"No one will be able to steal our inventory."

"I won't have to scan anymore like with barcodes."

"All we need are tags and some hand-held readers so we can implement it ourselves."

"I won't have to do cycle or physical counts anymore."

"The data is always accurate with RFID."

The past few decades have allowed significant advancement and development in multiple areas of the solution. Harsh environments with sub-zero temperatures or scorching heat and areas at risk for explosion or exposure to weather are no longer the challenge they were once were. There have been substantial improvements in tag/inlay technology reducing issues with tag orientation and electromagnetic interference. These major manufacturers have also responded to the need for greater variety in order to meet specific material requirements such as metal and liquid, often releasing new versions of chips every 12-24 months. Some manufacturers have taken it another step forward to match the antennae technology to the tag technology making it much better to read in different environments, tightening

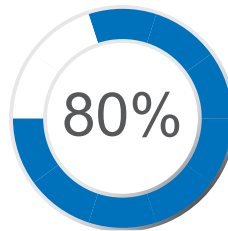
up the read zone to substantially reduce errant reads. Undoubtedly the least talked about but most important piece of the RFID puzzle is middleware. More so than tags or readers, software has evolved providing numerous ways for utilizing the data collected and communicated throughout the supply chain. Gone are the old concerns with security, investment, complicated deployments and tag reliability. Today's RFID is no longer the "black sheep" but rather a major contender in the push for a connected supply chain and considered one of the core manufacturing technologies of the future.

BE REALISTIC TO GET RESULTS

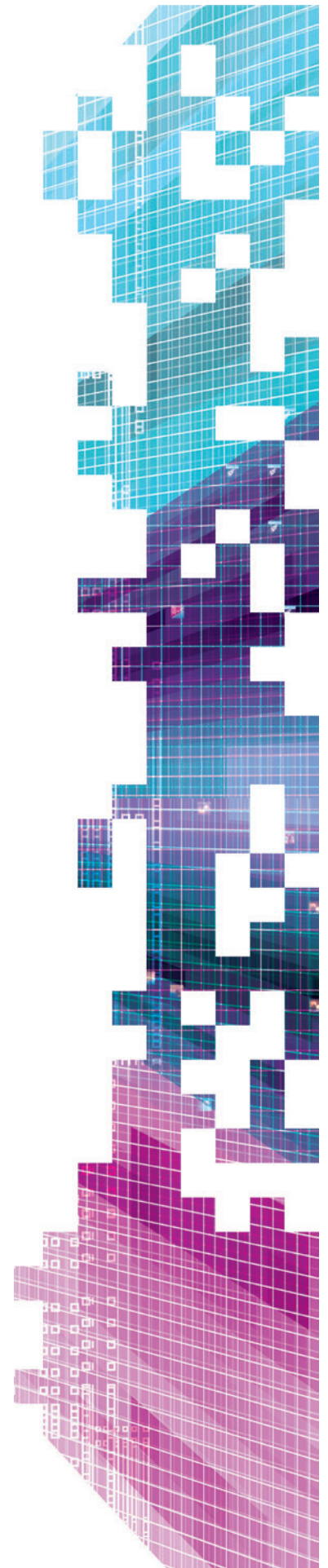
Do your due diligence in reviewing processes, workflows and requirements to pinpoint what is driving the initiative and to be able to communicate effectively what your core objective is. Before seeking out a vendor be sure to educate yourself and your project team so you have realistic expectations of what can be achieved. Remember to evaluate all the components to a successful RFID Solution, not just tags and readers but middleware as well. Without the software you're just scanning tags! It is absolutely critical to work with someone who is willing to fit an RFID Solution to your unique business. There is no universal RFID solution or a one-size-fits-all implementation method, and if a software vendor or RFID hardware distributor tells you otherwise, RUN. With realistic goals, a committed team and knowledgeable vendor, you can trust that incorporating RFID technology into your business will not only be a viable option to help you stand out from the competition, but a successful one.

DID YOU KNOW?

Manufacturers & distributors who implement RFID technology into their supply chain see an 80% improvement in shipping/picking accuracy.



Commissioned Study by Forrester



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