InPack
Inside the packaging world of Premier Tech Chronos

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increasing number of “Peace of mind” solutions to our customers.

I take this opportunity once again to thank our tens of thousands of customers around the globe for their continued business. You can rest assured that our 1,400 team members across the world are working daily to provide you with a “Peace of mind” experience.

Regards,

ATTENTIVE TO MARKET SPECIFICITIES.

Rivière-du-Loup, Qc – Since its inception in 1989, Premier Tech Chronos has always sought to provide additional value to its clients. At that time, our core and single market was confined to a vast natural resource found in the northern and southern hemispheres at certain latitudes: sphagnum peat moss. The need arose for our sister company to be able to automate some of its operations, especially on the packaging end of things. This is when we created the first fully automated Compression Bagging System, which can pick and place the empty bag onto the spout, fill it, compress the peat inside the bag and finally close it. This innovation was the first of many equipment series that was developed specifically for this market alone. We then enlarged our portfolio to serve the “Peat” industry globally by providing an array of products ranging from peat field preparation, harvesting, screening, sizing, mixing, bagging, conveying, palletizing and stretch wrapping, all integrated under our roof. We became a worldwide reference for the Peat industry. We had acquired knowledge of the product itself but also of the processes necessary to succeed and be seen as a trusted advisor in this market. This model was a winner!

During the last year, PTC made a few acquisitions in line with the above description of market specialist. Throughout all our VISION planning and brainstorming, our target markets remain clear and we are focused on technologies or services that will allow us to deliver additional value. In other words, additional opportunities to serve the same client base. Market knowledge is what it is all about, not selling equipment but rather selling our expertise and comprehension of products, processes and the needs of specific industries. PTC proceeded with an EPC (Engineering, Procurement, Construction) acquisition called Prairie Engineering, an engineering firm specialized in the seed and grain markets. Based in Iowa, in the heart of the so-called “Corn Belt,” this team acquired specific knowledge of this industry for decades and has become a reference for how we can help feed the world, as Dave Ralph, founder of this Group, would shout.

How can PTC help its customers produce more, better and faster so they can lead the way in their respective fields? It is all about granular expertise, knowledge and comprehension of one’s market. The equipment involved is only the means for our customers to produce a certain product, but at the end of the day it is a black box that owners could not care less about. Our focus has shifted over the years from an equipment supplier to a wider solution provider, making sure that you, our customers, are able to produce your products at a competitive price.

As we are reaching the end of our brainstorming sessions for VISION 2023, Premier Tech’s 5-year planning program, all discussions are centered around the concept of market depth and comprehension so that we can offer an
Agriculture has become tremendously complex over the past decades, as it adapts to a constantly evolving world. With a global population that is expected to grow by over a third and reach 9.7 billion by 2050, food distribution and availability are two challenges that we will inevitably have to face. Furthermore, most of the growth will be concentrated in emerging countries, such as Brazil and India. These countries’ economies are rapidly changing and—as family incomes grow and the middle class expands—creating greater consumption levels. The UN Food and Agriculture Organization estimates that, to feed a flourishing urban world population, annual grain production will need to increase to 3 billion metric tons, while meat production will need to expand to 470 million metric tons.

Thus, growers will need to produce more food with less labor and limited usable land. The agricultural world of the 21st century is one of risk management, including labor challenges, environmental changes, constant demand from consumers, corporate farming, requirements from governmental agencies, worldwide circulation of goods, food safety and sanitation, and so on. How can businesses in the agricultural sector drastically expand their production while dealing with limited resources? Industry specialists have multiple formulas to overcome this unprecedented growth and these contingency factors, but the main one lies in automation and robotics. Why and, above all, how? Our experts, Dave Ralph and Curt Davis, from Prairie Engineering, explain the solutions for a long-term sustainable approach.
Producing More with Less

Today it is nearly impossible to feed the entire world population, and it will not become easier in the future unless we change our practices. In the past, the diets of emerging countries consisted mainly of rice and vegetables. Now that some of them are growing economically, like India, Brazil or the South East Asian countries, they are consuming and demanding more protein-based food—and that means more grain to feed the livestock. In fact, 48% of all corn production goes directly to produce feed for animals, and this percentage is even greater for soybeans.

Seed companies are all striving to create stronger plants that can produce enough crops on limited land area. With the help of biotechnology, they are trying to change the seed composition as fast as they can, but that means a more expensive final product. Fifteen years ago, a bag of corn seeds cost around 65 USD, while today it is around 400 USD. “The seed, a high-value product, needs to be handled carefully with new technologies. By saving one day to another. Automating processes and integrating robots in the production line is an effective way of adapting to the new workforce generation while attaining production efficiency. Technoseeds, a company located in Brazil that provides bagging services for the corn seeds market, had to adapt to be more competitive and therefore introduced robots in their processing and packaging line. “Automation provides us with flexibility, large-scale production, standardization and quality,” explained production manager Lucas Lopes Lemos.

“Compared to 15 years ago, the customer profile in the agriculture industry is also completely different. Businesses are getting bigger and long-time family farms are merging, giving way to the new corporate farm model.” explains Curt Davis. And they are merging in droves: worldwide, the agricultural sector went from around 250 moderately sized companies to 10 to 15 colossal companies. The overall effect of the mergers in the last 2 years has been to shift the seed business to China and Central Europe.

An indisputable solution

With high costs, small profit margins and very little control over crop prices, farmers’ only way to keep pace is to be more efficient. When farms got bigger, packaging also got bigger. Fifteen years ago, 90% of seeds were bagged in 50-pounds paper bags. Today, companies try to save costs by enlarging bulk containers to hold up to 2000 pounds of seeds. This tactic leads to other concerns, such as how to protect loads and products, which often need to travel 30,000 kilometers in various conditions and timeframes. That fact alone is driving the trend toward automation in factories, because the loads are heavier and dangerous for workers to handle manually. Automation and robotics are essential to ensuring the well-being of the workforce and the economic health of the producer.

Land space is not increasing, climate change is disrupting ecosystems, and this makes it even more difficult to grow crops and raise animals. At the same time, we are consuming more food than ever before, and in a relatively short time we will need to produce 3 times more food than we produce now. The goal of every player in the agricultural industry is to increase output per units of land while also respecting the environment. To achieve this goal, everyone involved needs to follow a long-term strategy of investing in the necessary equipment and methods. The previous agricultural model is no longer sustainable. Innovation and new technologies are increasingly providing tools to manage the risks farmers and producers encounter every day. With the help of robots and automation, we can feed the world.
For decades, China has had a near-monopoly on the industrial sector, including consumer goods, and packaging was no exception. Lately, however, production has started to shift out of China and toward other Pacific Rim economies. Indonesia, in particular, is now well positioned to benefit from this shift and, across most categories, production of industrial packaging supplies is expected to dramatically increase in the next decade.

Looking Beyond China

For many years, China was able to carve itself a privilege position amongst international economies but for several decades all the incentives have been to shift production to the mainland. Low labor costs and an indulgent attitude toward regulation of industry have brought prosperity to China. However, as the Chinese standards of living increases, so do labor costs, chipping away at one of the major reasons manufacturers flocked to China in the 1980s and ’90s. Newly tightened regulations pushed companies to enlarge their territories and consider new options outside the country. As incentives change, industry moves, and increasingly the place it’s moving to is Indonesia.

Indonesia: Land of the Future?

The reasons for choosing Indonesia are not far to seek. This emerging country is rich with natural resources, especially the precious soft timber and hardwoods that grow freely there but which have been increasing in price for several years elsewhere. The country also has a large potential labor pool that’s nicely split between low-skill/highly affordable manual labor and higher-skill/competent management employees who’ve benefited from Indonesia’s relatively recent drive to improve urbanization and educational opportunities, at least on the capital island of Java. Therefore, the country benefits from a reachable workforce, as well as a crew of specialists from many disciplines, like industrial automation.
Government has also moved to invest in the kind of infrastructure projects that gets observers down at the World Bank worked up: in just the last five years, the government’s budget for new roads, port facilities, and development of a nationwide electrical grid has sharply increased, suggesting that Indonesia has decided to start with the fundamentals and grow an industrial powerhouse from the waterline up.

Indonesia’s New Economic Model

Much of the projected growth in the Indonesian market is expected to be within the small- and medium-sized private manufacturing entity fields. These companies, which employ over 100 million Indonesians and contribute over 60 percent of the country’s GDP, can fairly be said to be the backbone of the new economic model. The latter seems to be fighting a winning battle against the older model, in which a tiny handful of state corporations grew big enough to rate Permanent Observer status at the United Nations, and developed a private economy. This unprofitable model is clearly being replaced, and its swan song is the new points of emphasis in Indonesia’s new economic model.

In the past, Indonesia saw itself as an exclusively resource-exporting country. A tree cut down in a virgin Indonesian rain forest might generate $2 in revenue for the island economy. That tree would then be floated down to the dock and loaded – raw – onto a ship bound for Japan, where semi-skilled workers in a sawmill would process it into commercial-grade lumber that sold for $6 per board foot, or 1,000 times the price of the raw material. In this case, $998 worth of value was added to the tree after it left Indonesia, and it all went to Japanese companies, sometimes including the logging firm, which might have been headquartered in Osaka.

The strategy Indonesia is now pursuing seeks to develop that added value at home, preferring to employ locals and sell the processed lumber itself, ideally keeping a few hundred dollars’ worth of value in the domestic tax base. This is almost exactly the path the United States followed when it switched from exporting raw cotton to England in the 1790s and started running it through the cotton gin first, thus taking the first steps toward an Industrial Revolution at home.

Winners and... Winners

This emphasis on domestic development is a promising sign for the industrial packaging business. As one of the industries that almost every other industry depends on to thrive, industrial packaging is definitively along for the ride in Indonesia’s coming growth spurt. While specifics are impossible to forecast with perfect accuracy, some fields of industrial packaging can already be seen to be on the way up. The increasing production of goods is inevitably causing broad changes and industrialization in existing facilities that needs to be brought to speed to respond to the demand. To do so, they rely on new and performing industrial bagging equipment. To stay agile and to rejoin the international demand, Indonesia’s strategy of automating packaging lines is on the rise.

Smart Policy Encourages Growth

Foreign capital have an impact on the economic development of a country, but it can all be undone by shortsighted government policy. Indeed, Indonesia itself had adopted some tactics that slowed its own prosperity in the past. From the 1960s on, highly protectionist trade policies effectively froze Indonesians out of the international economy. That tree would then be floated down to

Indonesia has been taking steps to modernize its economy for several years now. Though some challenges remain, most notably the dismantling of the state-corporate economy of the past, international markets have generally responded with encouragement and lots of startup capital. Manufacturing and packaging industries are definitely along for the ride, and it’s reasonable to expect that former Chinese assets will relocate to the up-and-coming island economy sooner rather than later.

“AS INCENTIVES CHANGE, INDUSTRY MOVES, AND INCREASINGLY THE PLACE IT’S MOVING TO IS INDONESIA”
With its population set to reach 70 million people by 2045, France is the largest market in the European Union, mainly for the agricultural and food industries. In the hexagon, these sectors are concentrated in the production of raw and processed cereals such as wheat and flour, as well as in the livestock industry with dairy in particular. However, recent years may have seemed difficult for business, as a result of environmental, biological or political events. What is the French manufacturing situation in 2018?

A necessary repositioning

The French National Food Conference, that was held over five months in 2017, gave the opportunity to all the stakeholders in the food industry to meet. This consultation assessed the current system and its resulting circumstances in depth. This major discussion will enable French producers, among others, to adopt a new strategic position in a changing national and international market.

In France, the different agricultural players’ periods of investment tend to precede a regeneration in production cycles. Periods of increased investment took place from 1949 to 1959, then again from 1960 to 1977, and finally from 1978 to 1997. There has been no comparable mass investment from the agricultural industry since. Obviously, in 2018, technologies are now very different to what they were 20 years ago; we only need to look at progress in automation and robotics to see this. We are now in a new period that will feature important investments from French industrial firms.

A context of transparency

Consumers also want better defined rules and stricter requirements towards the product processing line, as well as traceability of its constituent parts. The government is responding to the buyers’ need for transparency with heightened interest in epidemiological surveillance in an aim to reduce health crises involving food products. A thorough hygiene is not an option anymore, it’s a necessity. In this context, a leader must have a line that meets the production plant quality expectations now required of any environment that handles food.

French wheat: a new paradigm

Wheat is France’s largest agricultural product. In addition to a large domestic customer base, it occupies 6% of the global market and ranks fifth among countries that produce and export this cereal. French producers have the advantage of being able to develop a base built from the reputation and tradition of high quality French wheat grain, as well as the flour, baking and bread-making that result from it.

Year on year, we are seeing an increase in farmland area and concentration of production, which creates...
homogeneity in cereal cultivation. Processed wheat sectors such as flour, baking and pasta production are gradually expanding in each production period. However, there is a constant annual reduction in the workforce. With the rapid increase of the global population, rising urbanization rate and economic development of emerging markets that are not conducive to wheat cultivation, from a geoclimatic perspective, demand forecasts are optimistic. Currently, wheat is consumed by more than 3 billion individuals; possibilities are therefore accessible, as long as producers can adopt an aggressive competitive approach. To remain competitive in markets, the winning strategy is to have efficient equipment in the production line. “Prior to our new automated bagging line, we were producing at a rate of 5 tons per hour. We now have doubled the pace to 10 tons per hour, with the possibility of increasing later”, explains Marc Peterschmitt from Moulin Peterschmitt.

France, land of milk

After the end of the European Member States’ milk quotas in 2015, the global dairy crisis and contamination problems (such as melamine in China, or more recently, salmonella), France is finally able to hold its own. An effective way of staving off a potential crisis, which has been learned from these recent crises, is to guarantee the quality of one’s product and have equipment that meets the strictest hygiene criteria with draconian hygiene safety. “We work in food and baby nutrition: The hygiene aspect, among others, is vital to us. Therefore, among the equipment selection criteria that we gave was an absence of hollow bodies,” specifies François Musellec, director of industrial products, when he spoke about Synutra’s realignment in Brittany. When we produce baby milk powder, or any other product for human consumption, it is essential that we obtain equipment that has been specially designed according to stringent hygiene rules. Another challenge in the dairy industry is the cost of the product and the financial repercussions of any loss. It is therefore important that we have a production line that, in addition to not compromising the cleanliness of the product, will measure the required dose precisely. Whether the bags are for 5 or 25 kilos, the quantity of products packaged must meet requirements accurately, while reducing volatile losses which can also be disastrous. These precautions can be applied easily, with, for example, the principle of auger filling from the bottom to the top of the bag, with two dosing stations for accuracy and equipment designed to minimize waste.

Finally, the cereals industry takes advantage of domestic French trade and the dairy industry works with international demand. It is now important that each of these industries can act on markets that appear less conventional, in order to seize all the business opportunities available. A major new challenge in the agricultural sector is the difficulty of finding workers. By updating production lines through automation, the producer can now redistribute its workers effectively. Through robotization, working conditions and staff safety have also been greatly improved. The main challenges to respond to are: First, to increase production and by the same token, return on investment, and second, to be at the forefront of technology in physical and virtual infrastructure (such as automated inspection systems and robotization) in order to face competition in France’s new context.

THE FRENCH AGRICULTURAL MARKET IN THREE POINTS: TRADITIONS, CHALLENGES OF GLOBALIZATION, VITALITY OF THE REGIONS

ADDITIONAL RESOURCES TO REVITALIZE EMERGING MARKETS, SUCH AS ORGANIC PRODUCTION, ARE IN DEMAND

THE DEVELOPMENT OF PRODUCTION SYSTEM PERFORMANCE AND RISK MANAGEMENT (HYGIENE, ECONOMIC, ETC.) IS BOOMING
The Future Is Now

When we hear Industrial Revolution, the first image that comes to mind is a dusty factory from 18th century England, with hundreds of workers doing the same action repeatedly. Even though this portrait seems far away, it’s quite a short amount of time that has passed since then; 300 years is barely anything in the great scale of things. Nonetheless, two other great revolutions have already taken place and shaken the way we perceive our world. It leaves us now on the path toward a new technological transformation and it’s unfolding at an unprecedented velocity. These past revolutions happened because an innovation was made available to a stagnant market and, at the same time, changed the way society works. But what is different this time around?

It’s a concept: The Whole, where everything and everyone is connected, and each component is linked digitally to one another. This formulation originated from a GTAI (Germany Trade and Invest) paper published in 2011 called “Industrie 4.0—Smart Manufacturing for the Future” written by William MacDougall. This fourth Industrial Revolution is taking the original idea behind the Internet, the infamous Web, and expanding it beyond the computer. It’s an industrial revolution where there are no more boundaries between physical objects, machines, software and the humans behind it all. Every element of the smart factory will be wirelessly interconnected to form an ecosystem; all the pieces of that ecosystem will be equipped with embedded systems (or CPS—cyber-physical systems) that will allow them to communicate with one another and create their own network.

The Goal: Integrated & Intelligent Automation

We are now looking at highly flexible, mass customization manufacturing that can be easily and rapidly adapted to custumer’s personalized requirements and fluctuations in the market. “The time of manual, the time of hard labour, and the time of temporary help, if you will, companies are not going to survive with that. Companies need to be looking ahead to see how they can automate,” says Tim Hale, Maintenance Reliability Projects Manager at Lifeline Foods. The business decided it was time to jump on the bandwagon of smart automation last year as an initial step toward the smart factory, and they are beyond pleased with productivity improvements that have surpassed their expected return on investment. The next step will be to assess their performance and then to integrate new adapted digital solutions to achieve the goal of an intelligent plant.

CHALLENGES: Of course, this process requires a mindset change from executives as well as team members; they must be willing to change systems, working practices, equipment, and their understanding of the new factory and business model. But it does not have to happen all at once.

THE INDUSTRIAL SMART SHIFT

The arrival of a 4th Industrial Revolution is not sudden; it has been unfolding little by little with every other revolution and evolution in between. Chances are you have heard of how buzzworthy topics such as the Industrial Internet of Things, data and “big data,” cybersecurity, autonomous machines and cyber-physical systems, cloud computing and so on are converging into a new unit called the Smart Factory. World business experts are insisting that an actual revolution is happening and that it is not just the latest gadget that is not here to stay. But what is this gibberish anyways?
Preparation is key in this process and getting ahead of the game with training and choosing a procurement strategy that will support you and your business through the change is equally as important for success. Access to an integrated 4.0 solution will need to be intensified and elevated; it needs to be taken into consideration when planning the shift, as dedicated and specialized team members might have to be added. It is a good idea to make sure you select equipment that was designed to be retrofitted if necessary and that is able to grow with your business. There is not a lot of time to make this shift, and the big gap that will distinguish successful from unsuccessful businesses is approaching. For that matter, choosing partners that fully understand the process and concept of Industry 4.0 will be a major advantage.

POTENTIAL: Innovative solutions for industries that need to adapt to the new flexible business model, like on-demand production, will be easily accessible. They will allow for increased control over production by reducing unplanned downtime. They will reduce unexpected maintenance costs and production crisis by ensuring automated predictive maintenance; it will become standard for the IIoT and the CPS to work together to let you know beforehand when an intervention is required on a piece of equipment. Also, a fully automated system will not require as much manpower directly in the plant to run smoothly. Thus, it will offer better working conditions for staff members, as the hard-physical labour is handled by machines and robots: the 25-pound bag placed manually on a pallet 4000 times a day is an action of the past. By realigning your infrastructure with the fourth Industrial Revolution, your factory’s efficiency will automatically increase. Consequently, this newly conceived industrial ecosystem will allow businesses to reach novel markets.

At the end of the day, with embedded systems, IIoT, M2M, data and all the automation brought by Industry 4.0, the operations of any factory will evolve and therefore enhance quality and production. Businesses are no longer only providing a product, no matter if it’s business to business or business to consumers, but are providing a service. To do so, they need to elevate their plants and factories on to a proactive level and offer a performance guaranty. The smart factory is here, whether we like it or not. It will be the businesses that are the most agile in embracing the change and view it as a new world of opportunities that will survive the shift. This impacts all industries, all production, everywhere in the world. It’s not so much a revolution per se, but a progression: to describe this new era in one word, it would be INTEGRATION.

BASIC KEY CONCEPTS

Data
The tremendous quantity of information we get from all our devices transformed into knowledge. In other words, information on the usage and the user: the metrics of an equipment.

Cloud computing
The virtual storage space for all the collected and calculated data, so it can be used remotely easily.

Industrial Internet of Things (IIoT)
Connecting objects to the Internet or/and to each other. For the IIoT to be useful, it needs to be fed with data.
Ex.: Your connected equipment sends the data directly.

Cyber-physical systems (CPS)
All devices that can communicate, connect and control each other cooperatively. Like machine-to-machine (m2m) communication, where, for example, a vision inspection system detects defective products in the line and communicate this information to the case packer to discard it.

3 STEPS FOR AN EASY INTEGRATION

Visualize: Observe and connect to report data on processes and procedures to then analyze the workflow.

Optimize: Control the production line and equipment with a new system by planning, scheduling and coordinating key components first.

Innovate: Evaluate the results and establish feedback on the process. Think of new solutions to correct issues you encountered and start the loop again.
Purchasing, operating, and maintaining equipment are no easy tasks—and mistakes can be costly and far-reaching. Over the years, many companies regretted some decisions they’d made in the past and wished they could turn back time. Here are five common mistakes when buying a new packaging equipment and, most importantly, what you can do to avoid them.

1. **Buying equipment without considering your long-term goals and strategies.**

   Whenever you’re buying new machines or retrofitting old ones to improve their performance, you need to plan for the future. What are your company’s current production requirements, and how do you expect them to change going forward? Do you plan on expanding your business? You don’t want your packaging line to become a bottleneck that will drag down your entire operation.

   You need to find equipment that will fit your needs and support your company’s growth for many years to come. Investing more money today can save you a lot of trouble down the line.

2. **Buying equipment without thinking about its life cycle.**

   You think you’ve found the perfect equipment? Great—now ask the company about customer support. How big is their support team? Do they offer a direct line for technical assistance? Can they train your operation and maintenance staff? Can they connect to your equipment remotely for swift and inexpensive troubleshooting? Do they have qualified technicians near you who can quickly travel to your location if needed?

   Even your dream equipment can turn into a nightmare if the manufacturer is unable or unwilling to provide support. Always buy from a company with an extensive team of dedicated specialists.

3. **Providing insufficient training.**

   Training must be discussed from the very beginning and must be included in the project schedule. Identify your key operation and maintenance employees from all shifts, and make sure they’re involved early on, starting with installation and commissioning. They will become “champions” who can later teach the rest of your team.

   Scheduling a visit from a field service technician one or two months after installation can be a great opportunity for additional training. By then, your people will have worked with the equipment and will most likely have questions. You and the manufacturer should agree on the scope of the visit in advance to make sure you have enough time for both servicing and training.

   You could also sign an on-site service agreement that includes at least two visits per year. Technician visits can be a good opportunity for continuing or refresher training.

   Last but not least, don’t be afraid to ask questions. Be proactive—reach out for help before things start to go wrong.

4. **Skimping on preventive maintenance.**

   Taking good care of your equipment will go a long way toward keeping it in good working order, extending its life span, and avoiding downtime. Here are some key preventive maintenance practices:

   - Always keep your equipment clean.
   - Stick to your preventive maintenance schedule.
   - Ask your top mechanics to write detailed inspection and maintenance procedures.
   - Perform daily, weekly, and monthly inspections. For instance, the operator could do a quick check at the start of every shift, and the maintenance crew could do a complete inspection on Monday mornings.
   - Keep track of the work done during preventive and reactive maintenance. You can use this data to identify the root causes of problems and to adapt your maintenance program accordingly.

5. **Not having spare parts on hand.**

   Let’s say that your plant has best-in-class health and safety procedures and hasn’t had a workplace accident in years. Do you throw away your first aid kit? Of course not—you need it just in case something happens. The same goes for spare parts: Not even the best preventive maintenance practices can prevent normal wear and tear.

   Your equipment manufacturer can provide a list of recommended spare parts to start with. Keeping records of your spare part orders and analyzing data from your preventive maintenance program will then help you to identify which parts you need the most, and when you should order them to minimize downtime. A good rule of thumb is to order a replacement whenever you use a spare part from your inventory.

   Knowledge is the key to avoiding most equipment pitfalls. Make sure you know what you need, who you’re buying from, how your equipment works, and what you can do to keep it in tip-top condition. Your equipment manufacturer should be able to help you identify your needs, to answer your questions, and to provide support as required.
Synutra International, Inc., is a leading infant milk formula (IMF) company in China. It principally produces, markets, and sells its products through its operating subsidiaries under the Shenyuan or Synutra name, together with other complementary brands. As of June 2016, Synutra International had 910 independent distributors and over 280 independent sub-distributors in its network, selling to approximately 26,500 retail outlets.

The Synutra factory in Carhaix-Plouguer, France, employs 300 people and produces up to 120,000 metric (about 130,000 imperial) tons of infant milk formula per year. The company is located right in the heart of Brittany, which is renowned for its dairy production.

“Everything is manufactured here on-site at Carhaix, with complete traceability from start to finish,” says François Musellec, the industrial manager for Synutra France.
The Food Crisis That Shocked the World

In 2008, a scandal in the baby formula supply made international headlines: infants in China were falling ill and in some cases even dying from melamine-tainted baby formula that had been produced in their own country. As was to be expected, the crisis resulted in wide-scale distrust of Chinese baby formula. To find a way out of this crisis, Synutra International searched outside of China for a new site to build a new factory, eventually selecting Brittany, France, which is widely respected for its milk production. It officially opened in September 2016 and is the first overseas facility for Synutra International.

The Main Goal: Product Consumers Can Trust

Because of the melamine crisis, Synutra needed a production line that placed hygiene and public safety standards above all else: only advertising that the baby formula was produced in France would not be enough.

“The hygiene aspect, among others, is crucial for us. Therefore, the main criterion that we stipulated was the absence of hollow bodies,” Musellec explains. The parent company spent four years planning the new factory in France. This process included establishing new contracts for milk and whey supply and searching for a machine capable of packing 10 tons per hour, i.e., 40,25-kg bags of IMF hourly.

“The technical aspect was sorted out fairly quickly. What we really wanted was for it to work,” says Musellec. Premier Tech Chronos came highly recommended:

“We were persuaded there wouldn’t be any worries with Chronos and we haven’t regretted this decision.”

Continuous Cycles Without a Buffer Silo

Synutra France has two drying cycles: a 6-tons one and an 8-tons one. In addition, the factory has no buffer silo. Therefore, when the cycle turns, the powder absolutely must be bagged, whether that’s in big bags or in small bags, and it is actually always a challenge because these drying cycles must not be stopped,” says Isabelle Bervas, a packaging supervisor at the factory. Only one technical issue, such as a density problem or agglutination in the funnels, needs to occur to interrupt the process. Because of this setup, Synutra France was on the lookout for a machine that could meet these requirements but, if needed, be restarted quickly.

Exact Dosing Required

To keep costs down, Synutra France also needed a system that measured exactly to 25 kg. To solve that need, Premier Tech Chronos installed a OMLH-6F, with a two-step bagging process. The first filling station fills the bag to only ¾ full to avoid overflow. The bag is then weighed, and a second filling station fills it to 25 kg exactly. Not more. Not less. To reduce the amount of residual oxygen in the bag, the company’s machinery uses thermo welds, which help to better preserve the product after bagging. The product is then palletized on a Premier Tech Chronos GPL compact palletizer and wrapped using a Stretch Hooder. The hooder is especially perfect for baby formula bags because it pulls the packaging film over the pallet instead of wrapping it all around, thereby protecting the product from anything that might leak through and spoil it, such as rain. Perfectly packed and tightly sealed, the product can now be shipped far away, 10,000 km away, in fact. It allows us to load the pallets into containers with quick-loading systems on slip sheets and all that, while minimizing the number of operators, so-to-speak.

Premier Tech Chronos Meets Synutra’s Expectations

Synutra France produces a variety of products. This requires different parameters for different products and therefore a lot of training. Raphael Marson, a packaging specialist, spent three days in training with two Premier Tech Chronos representatives. “Given everything that I was shown, it’s perfect,” he says.

The upgraded machinery met Bervas’s expectations.

“I find that this machine is very reliable compared to our other installations that do not make 25-kg bags,” she says. “I find that this machine is very reliable compared to our other installations that do not make 25-kg bags.”

Poised for the Future

Liang Zhang, Chairman and CEO of Synutra International, said in a press release about the facility’s opening, “We believe that the high-quality products manufactured from our French facility will attract more customers, elevate sales and bring significant benefits to our company both in terms of operating efficiency and brand image.”

The new Synutra factory has a mixing and canning capacity for powdered formula products of 60,000 tons per year and complies with both the EU and China’s manufacturing standards. Now outfitted with the most hygienic bagging equipment possible in a new dairy production facility, Synutra International is set to leave the food crisis behind for good.

“Premier Tech Chronos structure is very involved [in the project] and, as I understand, the managers are very committed. It’s as if it were their own company and we like that because that’s also how we work.”

Francis Musellec, Industrial Manager, Synutra France
KYE REYNOLDS
ASSEMBLY TEAM MEMBER
SALT LAKE CITY, UNITED STATES

WHAT MOTIVATES YOU IN YOUR OCCUPATION?
My main motivation comes from the great team environment that we have in Salt Lake. Some places say they are like one big family, but here we really are one.

HOW DOES YOUR JOB IMPACT OUR CLIENTS’ SATISFACTION?
I like to think that I look at things a little differently. I try to assemble every piece of equipment from either the service technician’s or the customer’s perspective. If the piece of equipment shows up at their facility and they aren’t totally excited, and completely satisfied, then we didn’t do our job.

WHAT IS IT LIKE HELPING TO BUILD SOPHISTICATED EQUIPMENT LIKE PREMIER TECH CHRONOS’ MACHINES?
I am very passionate about what I do; I like to take things apart and put them back together. I am a thinker at heart and always want to know how things work.

PURAN SINGH
SHOP ASSISTANT
INDIA

WHAT MOTIVATES YOU IN YOUR JOB?
I’m driven by new challenges and by the opportunity to pull them off. It’s also a great atmosphere to work in, and the management is very supportive, especially in times of need.

HOW DOES YOUR WORK CONTRIBUTE TO THE BUILDING OF SOPHISTICATED EQUIPMENT LIKE PREMIER TECH CHRONOS’ MACHINES?
I help achieve the customer’s requirements and goals by setting up the equipment as per the design and the specifications laid down by the engineering team.

WORLDWIDE TEAM MEMBERS
FROM OUR FACTORY TO YOURS

Our mission at Premier Tech Chronos is to delight you, from start to finish. Though machines are our business, our people are the heart of what we do – we are pleased to present some of our best production team members from around the world. They put their heart into their work and get their hands dirty every day to produce the best equipment possible, from our factory to yours.
WHAT MOTIVATES YOU IN YOUR JOB?
The challenges and variety of the activities I’m concerned with. My job is never the same, and there’s always time pressure, but finishing the job on time is a challenge I love, and it makes me proud every time we succeed. I also enjoy the variety, the sense that we don’t build standard equipment. Building customized machines means that we see and build new and improved modules and machines every time.

HOW DOES YOUR JOB IMPACT OUR CLIENTS’ SATISFACTION?
Performing I/O tests, assembling, disassembling and sometimes testing the equipment in our plant to ensure the machines run properly before we send them to our customers. I think this preparation is critical, and I’m sure it’s something that satisfies our customers.
HOW TO GET THE MOST FROM A SERVICE TECHNICIAN’S VISIT

The first step is to prepare the information about the machine including its history in terms of usage and optimization, its technical specialties, etc. The more information the technician has at his disposal, the more you stand to benefit from the visit. Furthermore, it is extremely useful for technicians to understand your needs and expectations. Not only will this ensure that they are able to fully meet your requirements, but you will also save both time and money. As soon as the technician receives the information, he can assemble the documentation and equipment that he will need for the visit. Thanks to this simple preparation, he will already be able to begin resolving the problem.

Customers can make a list of problems, aims and requirements and send it to their contact. A phone conversation with a service technician before he arrives at the factory is also very efficient.

John Marcotte, Technical Support Technician

We understand that the customer may have some uncertainties and even frustrations. It is my job to solve his problems and especially to reassure him.

Chad E. Rindahl, Service Technician

To ensure that the technician’s visit is as efficient as possible, you can make sure that the necessary space and equipment are available as soon as he arrives. Setting up a simple table on which he can arrange his tools can save him time – time that could be put to use training your staff, for example. In addition, reserving a time slot for your operators or maintenance personnel to enable them to meet the technician is a good practice to adopt. Why not take advantage of the presence of an expert to allow members of your team to ask questions?

Based on experience, there are a few questions that can help customers to prepare better. Is the technician aware of our needs? Do I have all the information about the machine to communicate to him? Does he have access to a suitable workspace? Have I set aside time for the operators and maintenance staff to meet the service technician?

John Marcotte, Technical Support Technician

Customers can make a list of problems, aims and requirements and send it to their contact. A phone conversation with a service technician before he arrives at the factory is also very efficient.

John Marcotte, Technical Support Technician

Once they have been shown around, it is useful for the technicians to be put in contact with your machinery experts. Conversations are more productive and the visit more worthwhile when operators and maintenance personnel share information and experiences related to the machines.

Here are some tips I would like to share with customers: Reserve time for the visit and the initial discussion. Assign a point of contact for me in the factory. Set aside some time that I can devote to training your staff.

Chad E. Rindahl, Service Technician

There are many reasons and situations that may require a service technician to visit your factory – from installing machines and performing maintenance to carrying out emergency repairs. In all cases, it is essential to take full advantage of having an expert present on your site. A visit should be productive, informative and effective in order to be profitable.
ORGANIZING A VISIT IN ADVANCE

SAVES UP TO 40%

ON THE HOURLY RATE OF A TECHNICIAN

Service technicians take their responsibilities seriously. Therefore, receiving news after a visit, be it good or bad, is an important retroactive element to successfully completing their work. Whether to express your appreciation or dissatisfaction, to inform the technician that the machine is working well or to ask questions relating to the service report, your comments are always welcome. The questionnaire relating to the technician’s visit is also a good way to share your experience. Technicians are constantly thinking about how to improve their services, and your comments act as a positive driver of change.

AFTER THE VISIT
STAY IN CONTACT

Jean-Luc Roy, Test Technician,
Vivek Vijayaraghavan, Product Manager

For more than 45 years, The PolyAlto Group has distinguished itself as the largest distributor and manufacturer of plastic solutions in Eastern Canada.

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Steve Santerre and his team was commissioned to develop a weight controller more efficient than its predecessors. The main challenges of the project were simplifying the interface and ensuring the quality of the new functions—changes that would have a significant impact on the day-to-day work of future users. The aims of the project were to reduce the number of actions required on the interface and to minimize the potential for error by implementing new features.

Simple navigation

The team had to develop a new interface equipped with a touch screen, a color menu as well as multi-language capabilities. Navigation and programming settings needed to be intuitive, requiring virtually no reading when the operator is required to look up or program settings.

An intelligent weight controller

Once the work on the interface was completed, the team set about tackling the “brain” of the SpeedAC iQ. The number of manual adjustments needed to be reduced significantly to ensure the weight controller could respond to instructions efficiently. The “Autotune” function now allows product throughput to be monitored and continuously adjusted in order to achieve the rate and production precision objectives set by the operator. The team worked on developing a powerful algorithm that performs intelligent bag filling. All the user has to do is enter the weight instructions and the job is done. Thanks to a new function, it is also now possible—and indeed very simple—to integrate additional equipment (conveyors, lights, etc.) directly into the SpeedAC iQ interface.

Preventing and resolving problems

The previous version of the weight controller did not offer a backup option in the event of problems with loss or damage to the program. To minimize the risk, the programs are not only preloaded and easy to install but can also be backed up and restored using a USB stick in the event of problems. If assistance is required, the weight controller provides access to remote troubleshooting via the Internet with Premier Tech Chronos technicians. They can access the program, identify the problem and resolve it automatically.

Steve Santerre, Automation Programming Coordinator

“The big challenge was to develop a product with profitable new features for our customers while also ensuring a user-friendly and intuitive operating experience.”

“It was important for us to develop a machine that allows the operator to be independent without having to complete 80 hours of mandatory training in order to be able to work the machine. This is an important issue for our customers.”
Listening and understanding the market’s needs and challenges and learning how to address them is an art. Marcello Fannuchi’s team in Jundiai, Brazil, might just have mastered it when they pushed the Stack and Wrap solution in the South American market. It all started with a customer that had to palletize a very particular product: a loose bundle of products, making it very hard to create a perfectly stable pallet. The client couldn’t consider a robotic palletizer, since the robot wouldn’t be able to place the bag properly because of the instability of the package. Manual labor was needed to place every bundle in the right place while distributing the weight equally to get a stable pallet. Marcello’s team decided to work on a solution that could replace all the carousel baggers currently installed in the plants. These carousel technologies were not as fast as other types of bagger and couldn’t reach the accuracy level expected by many clients. The goal? Develop a simple-to-operate, high-speed machine without compromising the high accuracy. What they developed over the past few months is a fully automatic open-mouth bagger, capable of a production rate of up to 1200 bags per hour with a high precision of 25 to 35 grams per bag. The platform was designed in accordance with all standards for the handling of explosive powders and has the flexibility to adapt to different sizes of bag up to 50 kg, depending on the client’s requirements. The team also wanted to develop a more efficient solution with fewer moving parts and more servo-driven modules. As of today, several PTF Baggers are in the field for final tuning before the upcoming official launch.

The goal was to stabilize the load and palletize the product simultaneously so that even if the client had to handle loose bundles, the pallet would come out perfectly squared and stable. The flexible robotic palletizing cell is combined with a turntable stretch wrapper. The Stack and Wrap is specially designed to ensure that the pallet is wrapped every two layers, helping stabilize the loads and create a perfect pallet each time. While the pallet is being wrapped, the robot continues to palletize units on a second palletizing cell. The result? No time loss, and no manual labor needed.

By closely monitoring the needs and demands of the powdery products market, Frédéric Gauvin, IR&D Director and his team set out to design new equipment that would handle flour more efficiently than any other machine on the market. “We were quite close to some major players in the industry who were experiencing some issues with powder handling. We quickly realized that this type of solution didn’t exist on the market and we needed to think about it very seriously.” - Vital Lévesque, Technical Director. The goal was to design a new generation of open-mouth bagger specifically adapted for flour. The team had been hearing about challenges that clients were facing, so they began working to design a cleaner bagging machine, one that could reach high speed production rates without compromising on accuracy and that could meet the highest sanitary standards of the industry. The result: the PTF Bagger.

By studying what was available in terms of bagging systems for flour, the team knew that they had to find a solution that could replace all the carousel baggers currently installed in the plants. These carousel technologies were not as fast as other types of bagger and couldn’t reach the accuracy level expected by many clients. The goal? Develop a simple-to-operate, high-speed machine without compromising the high accuracy. What they developed over the past few months is a fully automatic open-mouth bagger, capable of a production rate of up to 1200 bags per hour with a high precision of 25 to 35 grams per bag. The platform was designed in accordance with all standards for the handling of explosive powders and has the flexibility to adapt to different sizes of bag up to 50 kg, depending on the client’s requirements. The team also wanted to develop a more efficient solution with fewer moving parts and more servo-driven modules. As of today, several PTF Baggers are in the field for final tuning before the upcoming official launch.

The engineering team had very precise technical objectives in mind: getting as close as possible to a zero-dust emission process and achieving outstanding precision while maintaining high production rates.”
CUSTOMER SERVICE

THE END OF THE SINGLE MODEL

Implementing an effective technical support service for customers is wrought with challenges. Consider the multitude of languages spoken, the different time zones to contend with, the complexity of the problems to resolve, not to mention the impressive amount of machines and so forth. However, it is important to consider these elements as assets rather than obstacles in order to think intelligently about the kind of support service that our customers require. Times are changing: Nowadays, social media and the web are extremely popular platforms, and customers increasingly expect a solution-based service. How can we adapt to this reality?
“Trust and collaboration enable a new customer service model, from which everyone can benefit, and which marks the end of many inconveniences.”

Adaptation of the service

The concept of customer service was initially based on the meeting of the merchant and the customer. Then, in the 1960s, changes in the consumer market led to significant economic growth and the establishment of marketing units within companies. A new solution was therefore devised to meet the growing needs of consumers: call centers. This technical assistance model works on the basis of levels, and silo problem solving is used to efficiently handle—so we believe—a large number of customer requests. The need to provide a 24/7 service led to numerous call centers being located in virtually every corner of the world.

The turn of the millennium brought with it a wind of change thanks to the democratization of the Internet. The new platforms available, enabling information to be shared online, forced companies to adapt and to improve their control to guarantee the quality of the services they offer. Then, the rise of self-service platforms, live chat and the increased presence of social media once again influenced the organization of customer support. Starting at this point, the commercial offer also included an iterative and collaborative support service.

A new model

Setting up a technical support service involves wanting to help customers, but also getting to know them better. Trust and collaboration enable a new customer service model, from which everyone can benefit, and which marks the end of many inconveniences. There is nothing more frustrating for a customer who is grappling with technical issues than to have to search for a way to contact the support service and then to have to re-explain the situation to each new person he speaks to. It is also important not to forget the primary purpose of technical support. Indeed, companies that regard it as an opportunity to boost their sales rather than a core component of their product are not providing a service, nor are they helping their customers. Rather, in order to succeed and excel, a company should consider technical support as an opportunity to satisfy its customers and to use the information obtained in an intelligent way, that is to say, to develop appropriate solutions. The number of happy customers greatly influences a company’s reputation and, as a result, its financial sustainability.

Putting theory into practice

To implement a good support service, it is necessary to evaluate the advantages and disadvantages of different approaches, but also to adopt good practices. We must not lose sight of some key concepts.

Consumers expect to be able to contact you easily

The technical support service allows you to contact your customers and establish effective communication. As soon as your customers think about contacting you, they must be able to find how to do so easily.

Keep your promises.

Building and maintaining a relationship of trust with your customers also means keeping your word. Risking promising a service that meets neither the customer’s expectations nor their needs is, at best, problematic. It is therefore important to be honest at all times and to respond to consumers’ questions to help them find an efficient and beneficial solution. If the task turns out to be very complex, it is fine to tell the customer so, provided that you also assure him that the necessary measures have been taken.

The freedom you give to your agents is proportional to the quality of the service you offer.

The “levels” model where agents only cover a certain number of issues depending on their type of responsibility is no longer up to date. A collaborative approach, in which all the agents work hand in hand to resolve the problems in their entirety is much more efficient and beneficial, both for the customer as well as for the company and its staff. An environment that allows for decision-making paves the way for agents, who can be proactive from the start and constantly expand the range of creative solutions. Every problem thus becomes a team problem, rather than an issue for a single team member or single customer.

Empathy and technical competence: Two key qualities for the members of the technical support team.

The staff working on resolving the problem must be able to empathize with the customer and their situation. Their objective must be to satisfy the needs of customers rather than to set records for the number of calls answered per minute. Each member of the team must possess extensive technical knowledge and carry out the tasks that require his personal expertise.

To conclude, the technical assistance that we aspire to provide today is, in a way, a hybrid of the old customer service models. It includes the personal side as well as both one-to-one and remote service, at any time of day or night. Added to this is a willingness to collaborate and the desire to find both intelligent and effective solutions, tailor-made for each situation, as well as the drive to make all the difference.
Success takes collaboration.

Whether a business wants to tackle new opportunities or strengthen its current activities, collaboration within integration of other well-rooted companies is an essential strategy for the long run. Furthermore, this approach is a sensible way to ensure that all the client’s needs will be covered.

Last year, Premier Tech Chronos set important milestones in its history with three major acquisitions, which will provide a complete expertise for specific markets and territories.

Now part of the Premier Tech family, here’s a portrait of our newest additions and their unique stories; stories that make these companies the leaders within their industries.
reliability. Installations meet the highest standards of quality and becoming stricter than ever, it is now crucial that all of productivity and efficiency. With the agricultural industry packaging systems. With more than 80 years of expertise, mixing and screening installations, mills, and high-tech substrate industry, manufacturing and supplying complete and has become a national and international leader in the supply company, Slootweg has made its mark in Europe. Starting from a modest but passionate machinery market. In the early 80s Slootweg achieved its first export outside the Benelux area. Starting from a modest but passionate machinery supplying company, Slootweg has made its mark in Europe and has become a national and international leader in the substrate industry, manufacturing and supplying complete mixing and screening installations, mills, and high-tech packaging systems. With more than 80 years of expertise, Slootweg brings to the market the most innovative solutions. They decades of experience with screening, mixing, conveying, and packaging solutions for a wide variety of raw materials puts them in a unique position to offer valuable consulting services. “We want producers to trust us; we want to make it easier for them to focus on their production, while we take care of the logistics and provide them with the best solutions for their situation.” – Albert Slootweg. Their motto: from concept to execution and beyond. Slootweg’s focus is to minimize their clients’ risks by working with 3D designs at the earliest stages of the project. This allows them to create realistic models showing the final look and logistics of the installation before the development stage even begins. “Putting together the best specialists and consultants was essential for us. We wanted to make sure that our clients would benefit from our expertise, get the best consulting possible, and have a stress-free experience and a shorter assembly lead time.” Combining a state-of-the-art engineering department with their own production facility is the key to Slootweg’s success. A fully equipped production building helps Slootweg meet its clients’ wishes while remaining flexible throughout the whole project. “Although the growing media industry is a very competitive market in Europe, everyone is working together and looking for alternative substrate materials besides peat. Materials like wood fibre and coco peat are emerging and creating many opportunities for us to broaden our activities.”

Kockums Bulk Systems was created in 1989 when owner Ivan Price led a management buyout of the Kockums powder handling business from the Swedish-controlled engineering and shipbuilding group with which he had been affiliated. Shipbuilding, you might ask? The journey of Kockums began way before 1989; in fact, it all started in 1959 in Malmo, Sweden. Founded in Sweden, the Kockums Company built railway wagons and later developed a shipyard which became the largest shipyard in the world in 1970 by tonnage output. Kockums was well known for its massive Gothenburg crane that could assemble a vessel in six weeks. Meanwhile in the late 1980s, Ivan Price developed pneumatic conveying technology used on road and rail tankers carrying nickel concentrate for the mines in Australia and Asia. “Kockums developed the principle know today as dense phase pneumatic conveying in the fifties,” explains Francois Steyn, the company’s CEO. “In 1989 the Swedish company bought into the road and rail tanker industry in Australia and retained Ivan Price to continue developing the dense phase technology for use in even larger bulk-road tankers as well as in-plant systems”. Ivan seized the opportunity in 1989 to take over the in-plant systems he developed and established Kockums Bulk Systems (KBS). Along with colleagues Sam L’Rosi and Frank Tattersall, Ivan built the company from a staff of three to a highly successful operation with a stable workforce of over 40. In its early years, KBS focused on bulk powder handling inside manufacturing plants. The 90s were decisive for the company, as they won the contract for the cement handling systems for the Chek Lap Kok airport in Hong Kong, working with China Cement Ltd and vacuuming cement from barges at a rate of 160 tonnes per hour. At the same time, KBS designed and supplied the largest ever inland pneumatic conveying system in Australia for the Bayswater Power Station in the Hunter Valley NSW. The largest base load coal-fired power station in Australia, the Bayswater plant needed an upgrade to remove fly ash from the station at a rate of 300 tonnes per hour over a total distance of 1.6 km. With significant growth and product development, KBS is now recognized as Australia’s premier company in bulk powder handling systems, and it is proud to provide optimal solutions for a large number of Australia’s most prestigious and iconic companies. Today, the company produces systems that can receive powder in various forms (in sacks, bulk bags, trailers, or containers) and blend it into another product, repackaging it, palletize it, and wrap it so that it is ready for sale. Much of the company’s technology uses compressed air as the conveying medium, typically handling several tonnes of powder an hour. KBS works with some twenty different international suppliers who have been chosen because they offer equipment of proven quality for the Australian market, says Francois. Key relationships with overseas suppliers of packaging machines have seen the company expand its portfolio into the packaging market for fertilizers, agricultural and garden products, bird feed, cat litter, and a range of other products. “The packaging line complements the powder handling line in that it gives us the ability to provide front-to-back turnkey systems for our clients.”

From shipyards to powder handling – From Sweden to Australia.
We are Seedsmen. That’s our roots, that’s our history, and that’s what drives us every day.” – Dave Ralph.

Prairie engineering was started in July 1998 by Dave Ralph and Don Francois, who were coworkers in a well-known seed producer in the United States. Both working on the engineering team, they were involved in multiple projects regarding efficient factory design. Based in Des Moines, Iowa and surrounded by important seed and grain processing farms, they decided to start their own business, focusing on their experience and knowledge of the agricultural challenges that producers were facing: saving one kernel at a time. The company was founded to provide engineering, construction, and procurement services to the agricultural processing industry with an emphasis on the seed production business.

“We’re in business to support the agricultural industry, and as a micro of that, the seed industry. Supporting the companies that are producing the seeds that feed the world.” – Don Francois.

Prairie Engineering started with four people and can now boast over 40 employees worldwide. Their staff has unrivaled knowledge of seed and grain processing and excels at designing facilities to maximize product quality and production. This includes design and construction of sophisticated seed drying systems, efficient conveyor layouts, and multi-level conditioning and packaging systems.

Their approach is simple: listen to their clients’ needs and build long-term relationships. Prairie’s mission is to be the best advisor possible, so producers can focus on their production while they take care of the logistics. “When you’re designing a seed plant, you need to pay attention to details. Our expertise is in the attention to the small details to maintain the purity of the product.” – Dave Ralph.

While their business started in America, they are now active around the globe designing and building seed and material handling facilities. Their experience, whether it’s for a project in the United States or in Thailand, includes designing and building facilities to dry, condition, and process many different types of seed, including corn, soybeans, rice, and sorghum. Along with these major seed types, they have also worked with facilities that handle various types of grain, grass, and vegetable seeds. They also have experience with white and yellow food corn, edible soybeans, dry beans, and millet.

Prairie Engineering is committed to one thing: providing their clients with the highest level of service and the best value on every project. Period.
Thinking of investing in technology for your factory? Wondering how to evaluate the actual value that new machinery can bring to your operation? Want a reliable way to measure the true cost of a new packaging project?

Achieving a clear, accurate snapshot of how new packaging equipment such as palletizers, bagging systems, and scales can impact your company is critical when considering a major capital expense. After all, there’s a lot at stake here – and there isn’t one single formula or set of rules you can follow to assess your options when acquiring new machinery.

This is a process that requires you to dig deep into the metrics that make your organization run – factors including labor costs, real estate expenses, projected revenue, and growth potential are all variables in the equation here.

**FIRST, LET’S GO OVER SOME TERMINOLOGY**

**RETURN ON INVESTMENT – ROI**
A well-known benchmark used to estimate the gain on an investment in comparison to the initial amount invested.

**TOTAL COST OF OWNERSHIP – TCO**
A projection of the expenses associated with purchasing, deploying, using, and retiring a product or piece of equipment.

**PAYBACK PERIOD**
A calculation of the number of years needed for the equipment to pay for itself, otherwise known as the ‘break-even’ point.

**USEFUL LIFE**
The lifespan of a product, measured either in terms of time (hours, days, months, years) or cycles.

**RESIDUAL VALUE**
What the equipment is worth once it has reached the end of its useful life in relation to your specific application.

**HOW TO CALCULATE TCO AND ROI**
Look Beyond The ROI

ROI is the industry standard with regards to capital expenditures, and when it comes to purchasing new equipment, there’s a lot to consider when calculating this critical metric. Despite the prevalence of management tools and formulas designed to streamline the process of determining the ROI of new machinery, the fact is that these formulas fail to account for the unique factors that influence the ROI within your specific application.

That’s not to say that ROI calculations should be disregarded altogether; standardized ROI formulas should simply be viewed as a basic outline that you can use to generate a customized metric that represents one aspect of the TCO of an investment in automated equipment.

Consider the Total Cost of Ownership

The initial cost of a capital purchase usually represents a big chunk of the budget, but what if after running down all the costs and expenses generated from a project, you realize that the actual purchase price of new packaging equipment represents less than 10% of all your expenses?

Sound crazy? Absolutely not. There are multiple factors to evaluate when assessing the total cost of ownership of machinery. The most obvious one is the acquisition costs, including the purchase price of your new equipment, but there’s also delivery costs, installation and commissioning and training to consider as well. But there’s even more.

Increased Efficiency = Lower Cost of Ownership

One of the undeniable advantages that automated packaging machinery brings to the table is performance and accuracy, which can represent up to 50% of the total expenses related to a project. Problems like product giveaways, incorrectly sealed bags, and damaged product are virtually non-existent with the right machinery, which in turn brings down the TCO while increasing profit margins.

Another important consideration is the projected maintenance and utility costs, including regular servicing and anticipated downtime. Companies that are looking to buy new packaging equipment need to evaluate the costs related to maintenance documentation, performance testing, daily changeovers, maintenance costs, spare parts, and components, since this category can represent up to 35% of the costs related to a new project over a 15-year period.

Here’s a real-world example that demonstrates why you need to dig deep when calculating your TCO. Let’s say a brand-new weighing system gives you the ability to be even more precise on dosing. Given that inadvertent product giveaway can cost your company up to 300K a year, over 15 years this represents an expenditure of 4.5 million dollars.

Investing only a fraction of your projected future losses in a new weighing system will not only mitigate product giveaway losses but deliver a host of other benefits to your company. In this case, the simple math shows that new machinery will pay for itself in as little as two years, while an in-depth analysis can reveal the profitability of new packaging equipment long after you’ve recovered the initial capital expenditure.

The Human Factor

Unlike machines, humans simply aren’t built to perform precise, repetitive tasks 24 hours a day, 7 days a week. Relying on manual labor involves a number of variables that can be damaging to both your reputation and your bottom line, making it tough to take control of your expenditures.

In today’s complex and highly competitive environment, hiring and managing workers for a packing line takes a great deal of ongoing oversight to ensure not only compliance with the demands of the job but with the endless array of government regulations and union agreements regarding labor rights and workplace standards. Employing human workers adds significant risks to your operation, and many of these risks are well beyond your control. While you can take steps to create a safe, healthy workplace, you can never completely eliminate the risk of injuries. Despite your best efforts to predict future labor costs, you’re vulnerable to changes in minimum wage laws, population shifts, and even lawsuits related to workplace safety or discrimination – all variables that can have a major impact on the profitability of your enterprise.

Shifting your current manual packaging processes to an automated model allows you to accurately predict your ROI and TCO – without worrying about the multiple “what ifs” that come with using manual labor to perform the same tasks.

Look For Long-Term Gains

When it comes to assessing whether or not to invest in new equipment, many companies seek a payback of two years, and in some cases this is a realistic goal and a critical statistic to consider. At the same time, it’s important to take a balanced view that factors in both the initial cost outlay and the long-term advantages of packaging automation.

To really see the big picture, go ahead and calculate TCO and ROI over the next 15 years (even if you’re just looking for a short-term gain) – this will help you understand the potential long-term gains that can be achieved through a large capital investment in robotic packaging equipment.

Automation – The Competitive Advantage

Of course, the other ‘X’ factor in this equation is the impact automation will have on your ability to recruit and retain new, lucrative market leads.

Upgrading your facility by installing new packaging equipment gives your company a significant competitive advantage when bidding for contracts, soliciting clients, and seeking expansion opportunities. Your prospective customers will appreciate the reliability that an investment in new machinery brings to your production facility, providing your business with the ability to compete for bigger and more lucrative contracts.
THE ‘BIG PICTURE’
- ROI + TCO = YOUR BOTTOM LINE

In summary, assessing the true TCO and ROI of a new packaging project requires a careful, in-depth analysis of a variety of factors, including these expenditures:

- The up-front cost of the machinery – this includes shipping, duty, and taxes, as well as installation and building permits.

- The cost of training staff members to operate the new equipment, including management of supplies such as chemicals.

- The utility expenditures related to the operation of the machinery.

- Maintenance and inspection.

- You’ll also need to calculate the projected savings and potential added revenues that are expected once your new equipment is fully installed and operational, including:
  - Reduction in labor-related costs, including wages, benefits, insurance, and company infrastructure related to human resources.
  - Increased reliability and capacity to bid for larger, more lucrative contracts.
  - Elimination of variables related to a human-powered workforce, including concerns related to labor disruptions, shortages of skilled workers, and absenteeism.
  - The ability to increase production while decreasing the amount of physical space, utility costs, and resources needed.
  - Reduced product loss thanks to an improvement in measurement accuracy and product handling.
  - The potential to operate 24 hours a day, 7 days a week, with minimal, predictable periods of downtime for maintenance.

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