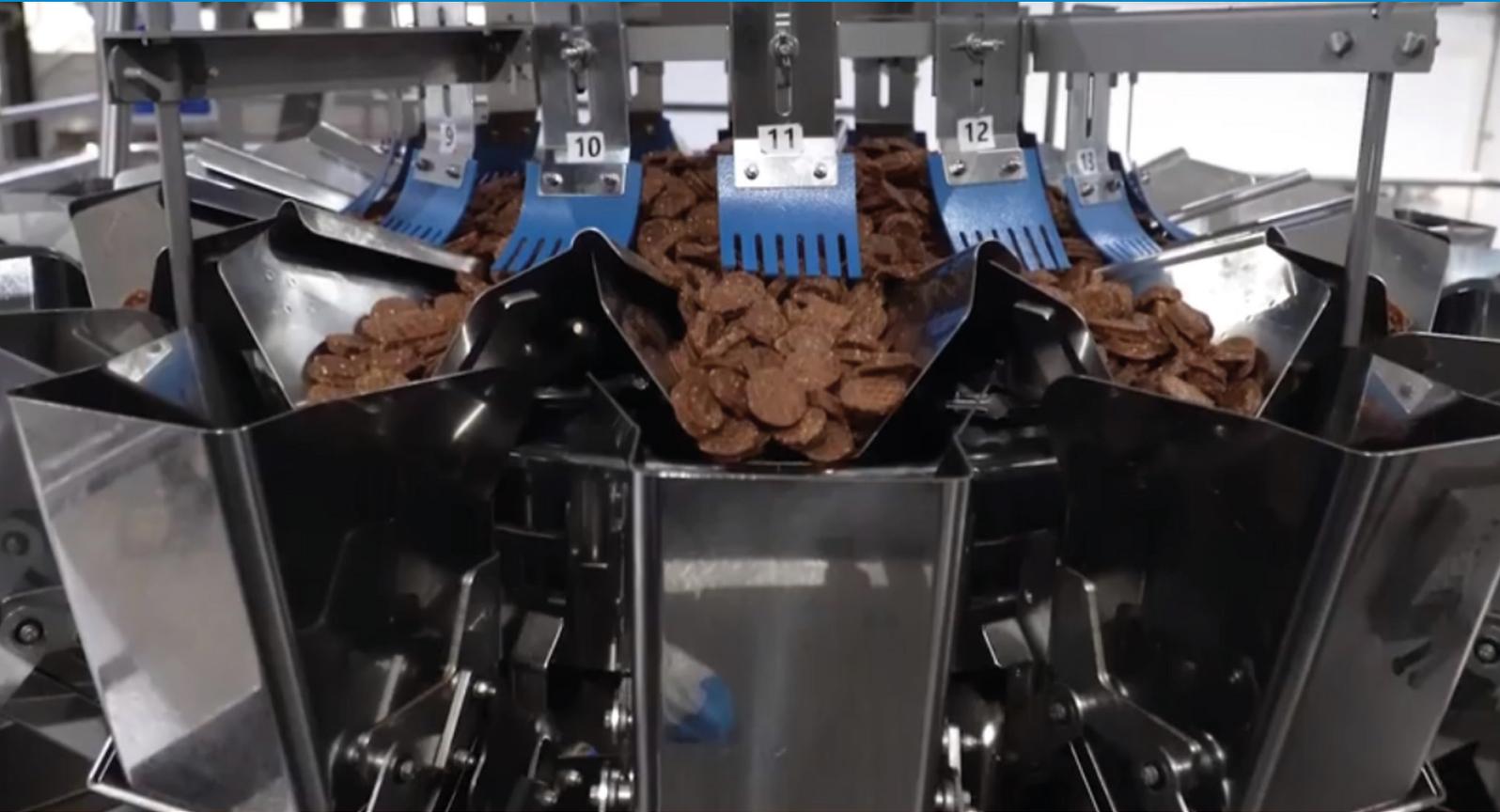




Case Study



Irish Dog Foods Case Study

Increasing throughput and reducing cost per pack
for leading pet food manufacturer Irish Dog Foods

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Project Summary

- **Company**
 - Irish Dog Foods
 - **Investment value**
 - €400k
 - **Location**
 - Naas, County Kildare, Ireland
 - **Industry**
 - Pet food
 - **Type of process**
 - Add a new line to process premium-quality pre-formed pet food into doypacks (stand-up pouches)
 - **Installation**
 - March 2021
 - **Machines/equipment installed:**
 - SF Engineering-designed conveyors, platform, and packing station
 - Ishida multihead weigher and integrated metal detector / checkweigher
 - Key Technology vibratory conveyor
 - **Key results**
 - Reduced operator requirement by 60 percent
 - Operators reallocated to other manufacturing processes, improving overall facility productivity
 - Increased throughput by 75 percent
 - Reduced cost per pack
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Background

Irish Dog Foods, which is part of the Queally Group, produces premium dog treats and pet food. It is a **leading name in the pet foods market** in Ireland, plus it exports to over 54 countries around the world, including in Europe, North America, and Asia.



IRISH DOG FOODS

- Premium dog treats and food
- 3 manufacturing sites in Ireland & UK
- Revenue doubled in 5 years
- 90% of products are exported
- US is largest export market
- 33% employee increase in 2 years
- 2017 Irish Exporter of the Year
- Deloitte Best Managed Company
- European Business Award winners



Irish Dog Foods produces pet treats at its manufacturing facilities in Naas, County Kildare totalling over 220,000 sq. ft.



The company is known for manufacturing **high-quality pet food products** using premium ingredients and advanced manufacturing processes. Irish Dog Foods also minimises

processing in its manufacturing operations by oven roasting or air drying the foods in its range to produce premium quality products. It has over **25 years of experience** supplying pet food products to many of the world's largest and most recognisable retail brands.

Patricia Molloy, Sales and Marketing Manager at SF Engineering said:

“Irish Dog Foods is a tremendous success story in the manufacturing sector here in Ireland, and it continues to go from strength to strength. It has experienced significant growth over recent years, with the past two years seeing growth at levels of about 50 percent.

“It is also a massive exporter, with marquee customers in the US and around the world, and it has won multiple awards, including Irish Exporter of the Year. It was that speed of growth that led to the initiation of this project.

“SF Engineering was delighted to have been awarded the project and we look forward to building an even stronger relationship with Irish Dog Foods in the future.”

Project Objectives

SF Engineering has a strong and highly valued relationship with Irish Dog Foods that dates back many years.

Andrew Flynn, Factory Manager at Irish Dog Foods, said:

“SF Engineering is our go-to contractor for turnkey solutions and project management. I have a good relationship with the team that has been built up over the years, and I have experience working with SF Engineering on multiple projects in the past.

“We knew we needed to bring in the right expertise for this project, and we wanted the build quality that SF Engineering delivers.”

This latest project involved the design, manufacture, and installation of a new line to process pre-formed pet treats into doypacks.

Some of the specific deliverables of the project included:

- Producing 80 packs per minute on the new line.
 - Ensuring the line can run at 85% OEE (Overall Equipment Effectiveness) as older lines on-site experience blockages that result in unnecessary downtime.
 - Minimise operator input in the packing process by automating as much of the line as possible. Examples include transporting, weighing, filling, and sealing the product, all of which previously involved manual intervention.
 - Facilitating the company’s move away from purchasing pre-made bags to the more flexible and cost-effective process of producing bags from reels on the new pouch filling machine with pre-printed film.
 - Building the line so it could also handle additional products in the future.
 - Developing the solution within an existing footprint in the factory.
 - Optimising the use of space within this footprint to ensure there is sufficient scope for future expansion.
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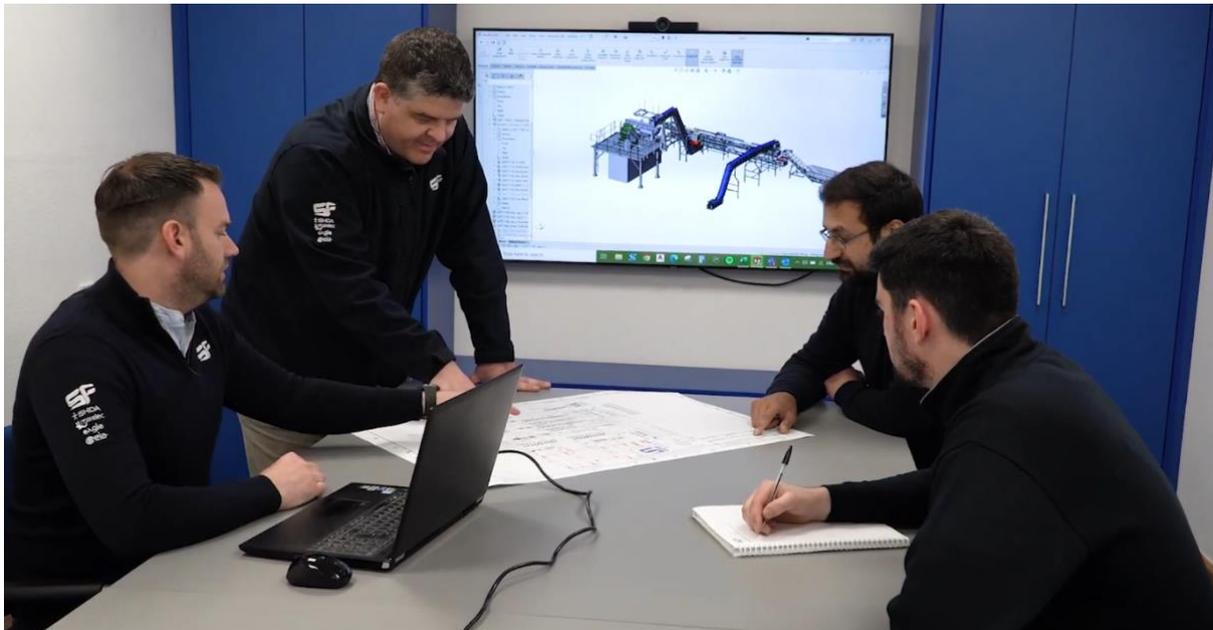
What We Did

Factory Layout

The project started with our team reviewing the overall factory layout to assess the current processes and workflows. We then worked with the team at Irish Dog Foods to reorganise the existing equipment on-site to:

- Streamline the production flow
- Provide space for the new line
- Allow for future expansion
- Ensure safe access to exits and emergency exits for all operators in the area
- Optimise the production space used

This process involved a series of both site and online meetings as we designed the new line to achieve maximum return on investment and an optimised use of factory floor space.

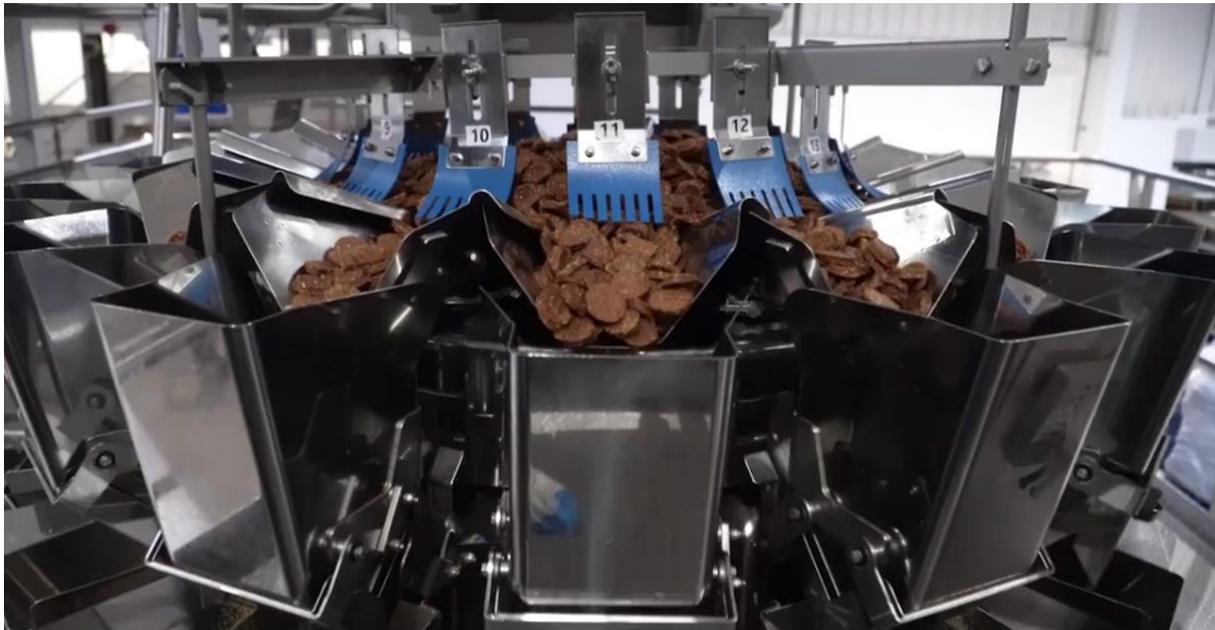


Equipment Specification & Integration

As part of the sales process, we conducted product tests with our market partner Ishida. These tests focused on the multihead weigher as well as the combination checkweigher and metal detector. The tests ensured the correct equipment was specified to achieve the required performance criteria.

The tests also identified that a customised feed system was needed on the line to ensure a consistent feed of products to the radial feeders on the multihead weigher. This feed system was essential to ensuring overall line efficiency, so our team worked with our market

partner Key Technology to specify the correct vibratory feeders. The feeder we specified had a conical discharge designed to suit the product dimensions, as well as the correct dimensions and power required to handle the product range and throughput rate.



Another requirement was to transfer the product from the cooking racks to the pouch filling system. The SF Engineering team collaborated with our preferred belt supplier, Intralox, the market leader in conveyor belting for the food industry. We specified fit-for-purpose belts that would ensure a low cost of ownership as well as being easy to clean and maintain.



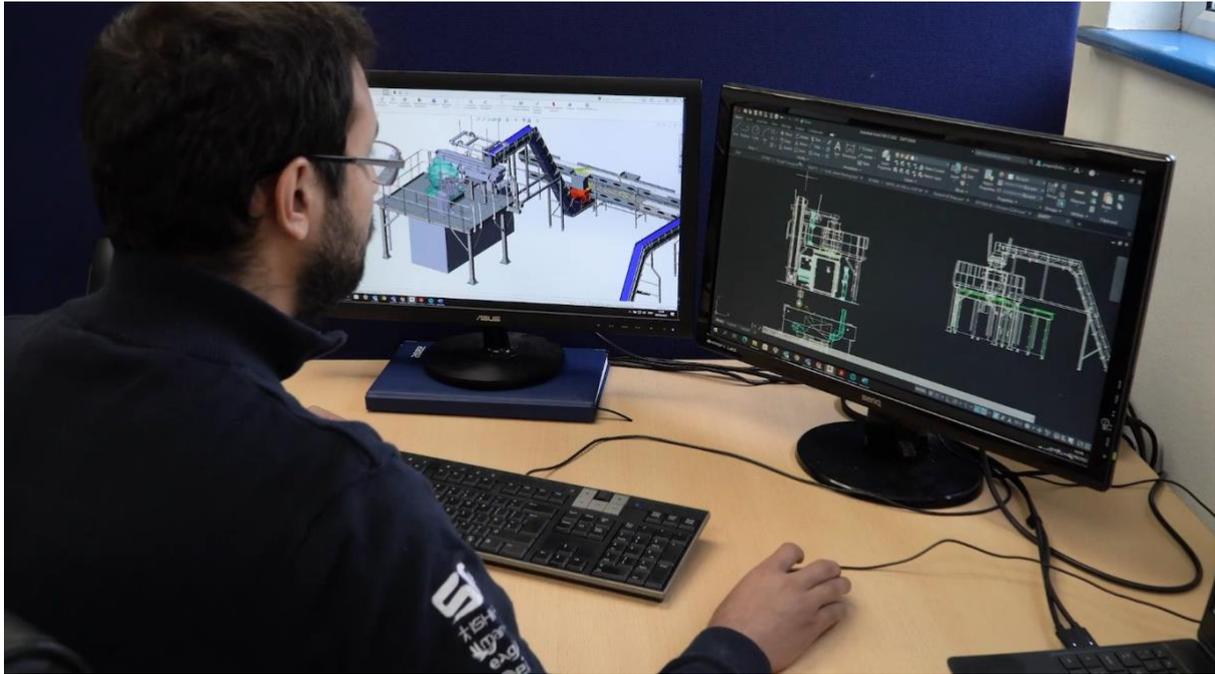
The pouch filling machine was supplied by Irish Dog Foods. Our team worked with the machine's manufacturer to incorporate it into the overall line and ensure seamless integration between interfaces.



Design

A project plan was developed in conjunction with Irish Dog Foods to ensure the project milestones could be achieved. The targeted installation dates would enable Irish Dog Foods to meet the strict production start date that was required to fulfil customer orders.

Our design team consulted with the Irish Dog Foods team throughout the design phase to ensure the designs delivered the best solutions for line operators, supervisors, and maintenance teams, while also ensuring adherence to all health and safety standards.



Energy-efficient drive systems were specified that also provided a factor of safety to ensure the required production throughputs could be achieved while also minimising the cost of running the lines. Our team also designed an electrical control system that met all necessary safety standards and gave the line's operators full control from start to end.



Access and Support Platform

The line required an access and support platform for the multihead weigher, feeding system, and cleaning station. This platform needed to straddle the pouch filling machine.

As a result, there were several design considerations that were taken into account, including ensuring the unrestricted operation of the pouch filling machine, as well as providing safe working and cleaning access to the high-level equipment.



The height and size of the platform, in addition to the location of the support legs, meant careful consideration also had to be given to minimising vibration, as excessive vibration on the platform would impact the performance of the multihead weigher. Specifically, vibrations on the platform would reduce the accuracy of the weigher, increasing product giveaway in the pouches.



To ensure the platforms were optimised for the process, we conducted a structural evaluation of the platform to ensure any vibrations affecting the multihead weigher were eliminated to guarantee weigher accuracy.

Quality Control

After the pouches are filled and sealed, they are transported individually through an Ishida checkweigher and Ceia metal detector. The combination checkweigher/metal detector ensures the product is contaminant free and the correct weight.



Any non-conforming products are rejected into lockable bins where they are inspected by the quality control team.



Conforming products continue through to a recirculating packing station that allows operators on both sides ergonomic access to the products for the filling of boxes. The boxes are pushed onto a takeaway conveyor where they are sealed, and a label is automatically applied before palletising.



SF Engineering Manufacturing Standards

SF Engineering custom manufactured each piece of equipment in our state-of-the-art facility in Grange, County Sligo, Ireland. Our production management system ensured all the

equipment was manufactured to meet the project's timeline, while also adhering to stringent quality control and health and safety requirements.



Installation Process

The installation of the new line took place over a single weekend, minimising disruption to the factory's operation and output. The entire process took place within the agreed timescales to get production back up and running again in that part of the factory, plus we delivered on Irish Dog Food's food safety and health & safety requirements.

Andrew Flynn from Irish Dog Foods said:

"The guys rolled in late on Friday night and everything was turned around by 6pm on the Sunday evening ready for washdown and final testing. So, there was minimal downtime, and the installation work was finished on time.

"The guys at SF Engineering have an excellent understanding of the processes and demands of food production, and food safety and health and safety requirements. Once the work was completed, the place was left spotless, but I knew I wouldn't have to worry about that element from past experience working with the team. It gives you real peace of mind knowing they understand the requirements of food production.

"From a health and safety point of view, our Health and Safety Manager would also be very complimentary of the SF Engineering team."

Commissioning

After the completion of the mechanical and electrical installation, the SF Engineering service team commissioned the line to deliver on the project's objectives and ensure optimum output.

Following the line commissioning work, our service team provided training to the operators and engineers in Irish Dog Foods, ensuring they had the information and knowledge they needed to ensure the efficient running of the new line.

Results

- **Throughput**
 - The new line operates at 80 packs per minute, exceeding the target of 60ppm
 - **Reliability**
 - The new line is running with an OEE (overall equipment effectiveness) of 85%
 - **Reduced costs**
 - Manufacturing costs per pack have been reduced through reduced packaging and labour costs
 - **Supply chain efficiency**
 - Packaging can now be sourced locally, increasing cost-effectiveness and flexibility
 - **On-Schedule**
 - The new line was designed and installed as planned, with all work completed on time to ensure Irish Dog Foods could continue meeting the strict demands of its customers
 - **ROI**
 - Irish Dog Foods achieved return on investment within 12 months of installation
-

The Customer's Perspective

Andrew Flynn said:

“From design to commissioning, SF Engineering was fully competent with skilled teams delivering in full. They were also clean and tidy throughout the installation process, something that is critical in a food environment.

“The line has been working well against agreed targets and is helping with our plans for further expansion and automation. For example, we have increased the number of ovens that we operate in our facility, we have further production line optimisation plans, and our headcount continues to grow. Over the past two years, our team has grown by over 70 people.

“The solution SF Engineering delivered really is impressive. We even show it to our customers as it's a real selling point for the Irish Dog Foods brand as it fits perfectly with our reputation for quality.

“We also like the aftersales support that is available from SF Engineering. It is excellent – if we hit a stumbling block, the guys move things to make it happen and get it resolved.

“With SF Engineering, it is not about selling you machines or equipment. They offer solutions that deliver real benefits. The whole journey on this project has been a partnership from the beginning.”

Get in Touch

To find out more about this project or to speak to a member of our team about a new food production line solution that you are planning, please get in touch. We can also offer expert advice on how to make your food production processes more efficient and less costly, with a fast return on investment. Contact us today.

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