

## CASE STUDIES

Classroom Practice

Technologists' Practice

Hard Materials

Soft Materials

Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

Electronics

Digital Technology

Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

*This case study examines the role of the Product Development team of a food manufacturer, from the initial idea of a new product through to its appearance on supermarket shelves, based on material supplied to Techlink by Heinz Wattie's. It supplements the case study [Developing a new stir-fry sauce](#) which examines the actual process of development of a specific new product by Heinz Wattie's.*

## The Idea

The process of new product development starts with an idea, or a perceived need in the market.

Ideas/needs can come from a variety of sources including:

1. marketing for our own products
2. supermarket brands
3. restaurant chains
4. marketing companies that sell but don't make products

The Product Development/Research and Development Department are then briefed on the project. The brief outlines the product or products required along with pack size and type, units per case, target cost and launch date.

Here is a sample brief:

**A Japanese pet-care company wants six flavours of dog food, all in 400g cans with easy-open ends. The flavours will be kangaroo, lamb, beef, fish, ostrich and pork. They should all cost \$12 for a shrink-wrapped tray of 12 cans. They want delivery in Japan at the end of June 2007.**

To identify all the issues with making the products in question, the Product Development team would talk to Packaging Development, Production, Supply, Planning, Quality Assurance and Data Integrity. After all the information has been assembled, product costings are also completed to identify whether or not Heinz Wattie's could meet target costs and therefore make a profit.

Using the example above it is likely that there would be difficulty making kangaroo and ostrich dog food for \$12 per case due to the cost of kangaroo and ostrich meat. Packaging Development might decide that shrink-wrapped trays into Japan are not strong enough to arrive in good condition. Planning might point out that the factory is at full capacity during May and therefore production will need to be done in April. Supply might say that there is going to be a shortage of pork this year. Quality might point out that special import permits are required to import products with fish into Japan.

Everyone's input is important so that Product Development can go back to marketing or customers and give them a realistic response to their brief. At Heinz Wattie's the project generally must then be approved by the executive committee before the Product Development team start to work on the recipe. This includes approval of the cost, concept and strategy.

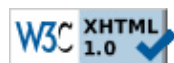


Lab testing

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008



[Go to next page](#)

## CASE STUDIES

## Classroom Practice

## Technologists' Practice

## Hard Materials

## Soft Materials

## Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

## Electronics

## Digital Technology

## Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

*This case study examines the role of the Product Development team of a food manufacturer, from the initial idea of a new product through to its appearance on supermarket shelves, based on material supplied to Techlink by Heinz Wattie's. It supplements the case study [Developing a new stir-fry sauce](#) which examines the actual process of development of a specific new product by Heinz Wattie's.*

## The Idea

The process of new product development starts with an idea, or a perceived need in the market.

Ideas/needs can come from a variety of sources including:

1. marketing for our own products
2. supermarket brands
3. restaurant chains
4. marketing companies that sell but don't make products

The Product Development/Research and Development Department are then briefed on the project. The brief outlines the product or products required along with pack size and type, units per case, target cost and launch date.

Here is a sample brief:

**A Japanese pet-care company wants six flavours of dog food, all in 400g cans with easy-open ends. The flavours will be kangaroo, lamb, beef, fish, ostrich and pork. They should all cost \$12 for a shrink-wrapped tray of 12 cans. They want delivery in Japan at the end of June 2007.**

To identify all the issues with making the products in question, the Product Development team would talk to Packaging Development, Production, Supply, Planning, Quality Assurance and Data Integrity. After all the information has been assembled, product costings are also completed to identify whether or not Heinz Wattie's could meet target costs and therefore make a profit.

Using the example above it is likely that there would be difficulty making kangaroo and ostrich dog food for \$12 per case due to the cost of kangaroo and ostrich meat. Packaging Development might decide that shrink-wrapped trays into Japan are not strong enough to arrive in good condition. Planning might point out that the factory is at full capacity during May and therefore production will need to be done in April. Supply might say that there is going to be a shortage of pork this year. Quality might point out that special import permits are required to import products with fish into Japan.

Everyone's input is important so that Product Development can go back to marketing or customers and give them a realistic response to their brief. At Heinz Wattie's the project generally must then be approved by the executive committee before the Product Development team start to work on the recipe. This includes approval of the cost, concept and strategy.

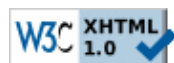


Lab testing

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008



[Go to next page](#)

## CASE STUDIES

Classroom Practice

Technologists' Practice

Hard Materials

Soft Materials

Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

Electronics

Digital Technology

Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

## How a new product is developed in the laboratory

## How does the Product Development team start?

Sometimes the new recipe can be based on something Heinz Wattie's already do. A strawberry and apricot jam might use the same basic recipe as strawberry jam with the addition of apricots. Sometimes it is completely new, such as a creamy bacon sauce in a pouch.

For something new, the Product Development team may use recipe books, try competitor's products and look at their ingredient list, or sometimes they may simply make a new recipe up. Packaging Development are consulted for the most suitable type of can, pouch, plastic bag size, PCU (portion control unit which is a single serve unit, such as the butter that you get on an airline) material or plastic/glass bottle for the product (this is discussed when determining the feasibility of the product, but confirmed once development starts). The Thermal Processing Department are consulted to determine the critical factors affecting the cooking of the product and to ensure the product will be safe (that is, does not contain any microbes that cause sickness).

## How do they make it in the kitchen?

Small samples are made in the Product Development Laboratory, in a kitchen using ordinary utensils to mix and stir. Some ingredients, such as spices, sugar, salt, vegetables, are the same as you might use at home. Other ingredients are specially modified or refined for use in processed food, such as modified starch, which can withstand high temperatures and high acidity, where ordinary flour or cornflour cannot. Sometimes flavours are added to improve the flavour of the product. In the case of pet food, vitamins and minerals must be added and calculations carried out to ensure that each recipe is a complete and balanced feed, because for some animals, such as guide dogs in training, our products are their sole source of nutrition. All ingredients are carefully weighed and recorded. The small batches are made to a specific volume or weight.

The Product Development team tries to imitate the factory as closely as possible throughout the development of the product by stirring with spoons, mixing dry ingredients with water with a mini 'Silverson' (the brand name of an industrial machine manufacturer – in this case this refers to a mixing machine) and imitating a Liquiverter (an industrial blender) with a kitchen whizz. Sometimes even using a whisk to imitate the effect the pump would have on a product. If homogenising, steam injection heating, or larger kettles (23, 40, 100 or 250 litres) are required, the Heinz Wattie's pilot plant has small-scale versions of the factory. The same tests that are performed in the factory are performed in the lab – consistency or thickness, pH or acidity, brix (dissolved solids), salt levels.

## How is the packaging done?

Once the small batch is prepared, the product is filled into the correct packaging – a can, bottle, polythene bag, pouch or PCU. The Heinz Wattie's Product Development team has: a machine that puts the lids (caps) on the cans; a heat sealer for pouches and plastic bags; an iron for induction seals on bottles and for heat sealing PCU foil – yes, that is an ordinary old household iron.

## And the processing?

Products that only require cooling are cooled in a bucket or sink of cold running water. Products that need a retort or cooker process are processed in a pilot plant

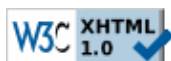


Sensory evaluation

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008



Pilot plant cooking

retort. The pilot plant retort is a mini version of a factory retort that can do steam or hot water processes and also has an attachment to imitate a continuous cooker. The retort processes are monitored to ensure the product is sufficiently sterilised just like the factory.

#### What happens next?

Very rarely is the first sample good enough to proceed with to the next stage. Ingredients may be added or taken out, quantities of ingredients may be changed, and the process may be made longer or shorter (still ensuring a safe thermal process).

Many samples are sent to Marketing or the customer to get stakeholder feedback and make improvements. The number of samples that go back and forth can vary enormously from less than five up to more than 50! The same steps are done each time to ensure the Product Development team are getting a good idea of how consistent the test results are and how reliable the thermal process is. This helps to build up enough results to set specifications for the factory.

Throughout the development, the costing is updated to ensure Heinz Wattie's can still make a profitable product.

Once the product is approved by Marketing or the customer, the Product Development team can move to the next stage.

---

[Go to next page](#)

---

 [RSS Feed](#) | [About Techlink](#) | [Order Pamphlets](#) | [Useful Websites](#) | [Search Techlink](#) | [Feedback Survey](#)

© 2003-2012 IPENZ - Engineers New Zealand



[newzealand.govt.nz](http://newzealand.govt.nz)



## CASE STUDIES

Classroom Practice

Technologists' Practice

Hard Materials

Soft Materials

Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

Electronics

Digital Technology

Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

## Moving the product from the lab into the factory

So now the Product Development team has a product that is acceptable to the customer.

## Organising a factory trial

The Product Development team requests a factory trial, detailing what the product is, when they would like to run the trial, what line they would like to use, what they would like done with the trial. A recipe sheet is drawn up with the factory-sized batch, this can vary in size from 500 to 4,500 litres depending on the production equipment they need to use. This information is circulated to Planning, Production, Data Integrity.



Pilot plant retorts

## What else needs to be done before the trial?

The Product Development team must provide the factory with the recipe, including the method and specifications, ingredient check lists, filling specifications, linesheets, quality control specifications, sterilisation instructions, pack off instructions. They may also need to organise new ingredients to arrive at the right time.

## What happens during the trial?

The trial is quarantined so that its movement can be controlled. The factory-sized batch is treated as a production batch. While this batch is made members of the Product Development team will be present (no matter what time of the day or night!) to ensure that there are no problems with the specified method, specifications, the way the product is made, what it looks like at each stage. Adjustments to viscosity (thickness of product) or flavour might need to be made. They will check that their estimates for costing were accurate, as well as line speed, crewing and ingredients. Thermal Processing staff will check that the thermal process is adequate.

## What happens next?

Samples are sent to marketing and to test the finished product quality.

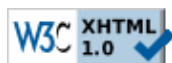
If the product or process did not turn out as predicted – such as differences in viscosity, method of making in the factory, flavour or appearance (from the approved lab recipe) – then another factory trial will need to be done. If this is the case then repeat trials are necessary to prove the second trial before full commercial production is started.

If the first factory trial is approved then often a multi batch trial of two to six batches will be done to ensure that the batch-to-batch variation is acceptable.

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008

[Go to next page](#)


## CASE STUDIES

Classroom Practice

Technologists' Practice

Hard Materials

Soft Materials

Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

Electronics

Digital Technology

Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

## Final steps

When the customer or Marketer has approved the factory trial/multi batch trials, what happens next?

## The label is designed

Generally by this point the designer has come up with a few designs and the marketer chooses the best one (product name, product description, serving suggestions and the general layout of the label).

## What does Product Development contribute?

The ingredient list and nutrition information plus any claims (such as '99% fat-free', 'no added flavours', 'no preservatives', 'high in fibre' etc), net weight and cooking instructions are provided by the Product Development team. Databases for ingredients may be used – these are linked to a spreadsheet that can calculate the nutrition information and also provide an ingredient list in descending order of weight. The database can also identify all the allergens that are present in the product.

Nutrition information sometimes needs to come from laboratory testing of the product, usually for any product with the Heart Foundation tick, or products like fries or hash-browns that are fried during the process. Under the new Food Standards Australia and New Zealand code, all human food must be labeled to show the presence of the following allergens:

1. cereals containing gluten and their products (wheat, rye, barley, oats and spelt)
2. crustacea and their products
3. egg and egg products
4. milk and milk products
5. peanuts and their products
6. soybeans and their products
7. added sulphites in concentrations of 10mg/kg or more
8. tree nuts and sesame seeds and their products

The Product Development team then is responsible for checking that all this information is correctly transferred to the label.

## What happens to the product next?

The Product Development team produces the final recipe information so that the recipe can be set up in the planning system, a final costing can be completed, and planners can plan the initial production run. They must provide the factory with the finished recipe including the method and specifications, ingredient check-lists, filling and packing specifications, line-sheets, quality control specifications and sterilisation data. Once the final costing has been approved on-site, the project must go back to the Executive Committee for approval to run.

## What happens during the initial production run?

Members of the Product Development team will be present (again, no matter what time of the day or night!) to ensure that there are no issues with the product. Occasionally minor adjustments to the specifications will be needed. Thermal Processing staff will again check that the thermal process is adequate to kill all pathogenic bacteria.

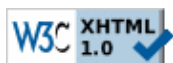
## What happens next?

The product follows the normal procedures for labelling and release. When the product appears on the shelf in the supermarket, the Product Development team says it is a great feeling to know they have had a part to play in providing new products for consumers.

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008



[Go to next page](#)

## CASE STUDIES

Classroom Practice

Technologists' Practice

Hard Materials

Soft Materials

Food and Bio-related

Rocky Road to Memphis  
Meltdown

The Herb Farm - revisited

Smart choice

Gluten-free cookies

Cow Power

Product Development at  
Heinz Wattie's

Fit to Drink

Meal Innovations

Developing a new stir-fry  
sauce

The Age of Aquariums

Sweet As

Sealord Group Ltd

Spoon Biscookies

The Good Oil

Tendertips

A Bit on the Side

Propolis

Living Nature's Flagship

Herb Farm

Electronics

Digital Technology

Enterprise Links

Intellectual Property  
Issues

## New Product Development at Heinz Wattie's

### What else does Product Development do?

#### Tenders for new business

When Heinz Wattie's are asked to tender for business, the Product Development team is involved from the start. These tenders range from supermarket house brand products to quick serve (or fast food) restaurant chain products for customers. The team needs to decide if it is feasible to do the products in question and cost them as quickly as possible. Frequently they are only given two weeks to get the costing and samples back to the customer.

#### Cost Reduction on existing products

Product Development teams also do cost reduction projects. The challenge is to reduce cost without affecting product quality and it is generally not easy. There are a few ways to reduce cost:

1. Ingredient reduction or cheaper ingredients
2. Improve efficiency in the factory
3. Make products simpler to make, thereby reducing waste and saving preparation time.

#### Reformulation on existing products

Existing products sometimes need reformulation for many reasons. These can include:

1. to make products more consumer-friendly – such as by removing MSG
2. to meet new food regulations – such as the 2002 Food Standard Code requirement for 40% fruit in jam
3. to improve quality
4. to reduce cost
5. to use new or improved ingredients

#### Troubleshooting

Even after products are handed over to manufacturing, the Product Development team is still responsible for the products they develop. They are available at any time for production to call to help solve problems with recipes for products. It is not unusual for Product Development staff to get a phone call out of working hours to help solve issues like:

1. products that differ from the specifications – for example, they might be too thin, too thick
2. delays – how long can a product be held in production before it must be packed, especially if there has been a breakdown on the line
3. problems with achieving the right weights in a can.

They do their best to solve issues out of hours over the phone but will come in if necessary – it is not always easy to think of a sensible answer at 2am!

#### Shortages

If there are problems with supply of ingredients or products – such as not enough frozen carrots or recent frosts affecting peach supply – the Product Development team helps to find solutions. In the case of frozen carrots, they may be able to use fresh. When Heinz Wattie's needs to import canned fruit to replace shortfalls, the Product Development team write a specification for the product required and assesses samples from external suppliers.

#### Product transfers

The Heinz Wattie's Product Development team is also involved in transfer projects. Transfers can be from one site in the factory to another, on to an existing production line or a new purpose-built one, or the moving of an existing production line from factory to factory.

New Product  
Development  
[The idea](#)  
[The laboratory](#)  
[From lab to factory](#)  
[Final steps](#)  
[Other activities](#)

Related links:  
[New stir-fry sauce](#)  
[Enterprise Links](#)

Published:  
May 2008

