



# Encapsulation: perfumes and beyond, a moving target to aim

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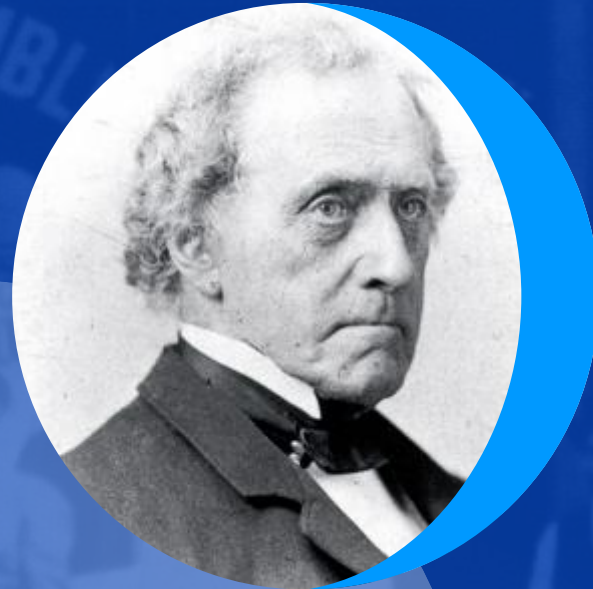
**Abstract:** Unique particles can enable **consumer satisfaction** and change the rules of the game in future detergent products. They can impact ingredient use and enable new product forms. Novel encapsulations platforms provide us with freedom to formulate, design new forms and new effects, and deliver new benefits and new cost savings.

This encapsulation platform for perfumes has arguably been one of the **biggest transformations in the fragrance industry** over the last 50 years. Continuing this journey, encapsulation will enable more consumer benefits in different ways. Once the platform is applicable to other ingredients, new product propositions can become reality. We can anticipate new degrees of freedom in formulation, new horizons in the use of unique ingredients... but **what are the contradictions** that need to be solved to get to such a bright future?

# P&G: Our Heritage



William Procter



James Gamble

We are a company founded in  
and grown by partnerships.

It's in our DNA. It's who we are. How we work.

# P&G at a Glance

Every day, P&G serves nearly 5 billion people around the world with trusted, quality brands they love to use.

## BRANDS

**23** Billion-Dollar Brands sold in **180+** Countries



## BUSINESS & OPERATIONS

**178** Years in Business

**\$83** Billion in Annual Sales (FY13/14)

**4** Industry-Based Sectors



**5** Regional Selling and Market Operations

ASIA  
EUROPE

LATIN AMERICA  
NORTH AMERICA

INDIA, MIDDLE EAST  
AND AFRICA (IMEA)

Beauty  
Health & Grooming  
Fabric & Home Care  
Baby, Feminine & Family Care

## INNOVATION

**\$2 Billion**  
R&D Investment in 2014

Circa **8.000** Employees  
in R&D worldwide

A stylized world map in shades of pink and purple, showing the continents.

**40.000+** Active Granted  
Patents

**P&G** |  connect + develop <sup>SM</sup>

Partnering externally to accelerate innovation across the company through open innovation. Today, this has resulted in >2000 successful partnerships.

## PEOPLE

**110.000+** Employees

**43%** Women Managers  
Globally

## CITIZENSHIP

 **8 Billion Liters**  
of safe drinking water  
provided to keep children and  
their families healthy

 **70** Sites  
around the world at  
zero manufacturing  
waste to landfill

# P&G in Europe

## 4 Research and Development Centres Connecting Europe

**Newcastle Innovation Centre**  
Fabric Care

**Greater London Innovation Centre**  
Beauty, Grooming, Personal Health Care

**Brussels Innovation Centre**  
Fabric and Home Care

**German Innovation Centre**  
Baby Care, Feminine Care, Oral Care,  
Grooming, Hair Care

**2000+** scientists  
in Europe

## From Europe to the World



more than  
**1 Billion**  
consumers use Ariel



more than  
**800 Million**  
men start their day  
with Gillette



every **4** seconds a  
Hugo fragrance is  
being sold somewhere  
in the world



more than  
**50 Million**  
babies experience the  
comfort and dryness  
of Pampers diapers  
every year

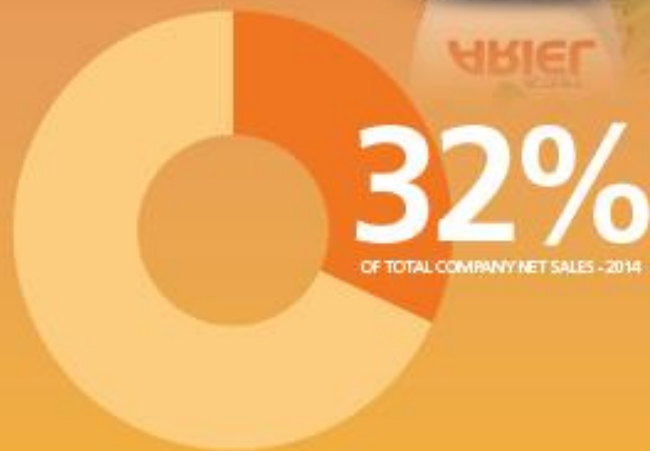
Where deep mastery meets unique capability.  
Connected regionally, reaching globally.

50 years of excellence at  
the Ariel Innovation Center in Brussels.



# P&G, a Company of Brands

## Fabric and Home Care



### GLOBAL BUSINESS UNITS

Fabric Care

Home Care

### CATEGORIES

Fabric Enhancers, Laundry Additives,  
Laundry Detergents

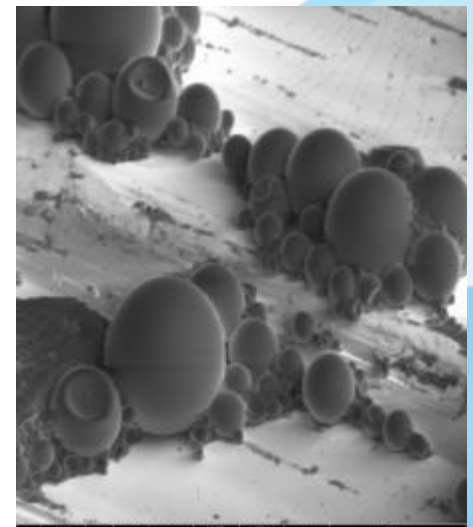
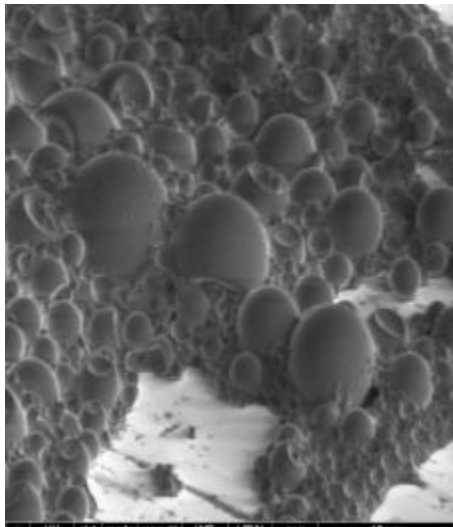
Air Care, Dish Care, Surface Care, P&G  
Professional



# Novel Encapsulation Platforms

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Unique particles can enable consumer delight and change the rules of the game in future detergent products with impact on ingredient use and product forms.



# Some New Possibilities - Laundry

- Detergents can have multiple active ingredients that are incompatible
- Controlled release of ingredients



# Some New Possibilities – Non-P&G

- Pharmaceutical Ingredients can be released when and where needed
  - pH sensitive capsules can e.g. only release *after* passing through stomach
  - Different capsules can break at different times => controlled release over time
  - Ingredients can be “protected” from digestion by capsules, ...
  - Mutually incompatible (in storage) drugs can be combined in one dosage.
- Sensory ingredients kept “fresh” in storage to give dramatic use impact:
  - Taste-ingredients that are released in the mouth only
  - Fresh Perfume ingredients that are released only when exposed to air.
  - Tactile ingredients that are released only in contact with skin
  - Sound – creating effects (analoguous to fizz)
  - Visual effects from capsules which release ingredients when exposed to light

# Right on target

So you begin to see why microcapsules perfectly fit this theme:

- The right ingredients
- The right time
- The right location

Right on Target !



# Case study – Perfume capsules

- Perfumes
- Challenges for Laundry
- Laundry Detergent before capsules



# Perfume capsule's in Laundry

- Perfume not all released at once.
- Possibility to optimize particles to release different perfumes at different times.
- Better perfume stability – no need to worry about impact of other ingredients



# Perfume Capsule's in Laundry

## IMPACT:

- Dramatically improved Consumer-Delighting Experience
- Reduced Perfume usage / waste
- Simplified Formulation

What's not to love?

Well, there are some challenges too ...



# Technical Challenges - SUPPLY

- Making the capsules ...
- ... with the active ingredients inside !!
- And transport them





# Technical Challenges - MAKING

- Incorporating the microcapsules in products:
- Stability of microcapsules in the product



# The future

“the best way to predict the future is to invent it.” Alan Kay

- Many opportunities to make better products;
- Many contradictions to be solved;



connect + develop<sup>SM</sup>

Working together to invent it

Thank you!!

Touching lives, improving life. *P&G*<sup>TM</sup>