R&D Case Study – Q4

Supporting product evolution

Welcome to R&D, Unilever's ideas factory. Our purpose is to build brands through benefit- led innovation, unlocked through science and technology. To help us achieve this, we invest €1 billion into research and development annually as well as making more than 300 patent applications each year.

You've joined the programme into the "Design" area within the Personal Care category. This team takes the breakthrough science and technology created by the "Discover" team and develops these into new branded products that the "Deploy" team then takes to

market. You've just met with the Marketing Manager for Dove Men+ Care who has briefed you on their proposal for the next stage in this brand's evolution.

The Dove Men+ Care brand saw huge growth following their recent #RealStrength campaign. This campaign focused on fatherhood and while this was successful in establishing an emotional connection between consumers and the brand, the marketing team is hoping to broaden the brand's target market through new positioning within the antiperspirant deodorant range.

The new concept is based on "natural power" using active ingredients that inspire a more organic image. Zinc oxide partially inhibits the bacterial growth that is the main cause of body odour. It's also not absorbed into the skin, alleviating some common concerns around the long-term safety of some antiperspirants. Inclusion of this new ingredient will allow us to state an additional benefit to the product, beyond a new fragrance.

The new range is currently undergoing a feasibility study and, as part of this, the R&D Technical Project Lead, Carlo, has asked you to investigate the impact of introducing the new active ingredient - zinc oxide -into the manufacturing process with the relevant factory managers. He's made some initial calculations around the volumes each factory would need to produce during the first phase of the new product's launch in order to sufficiently meet the anticipated demand.

	Ireland	Mexico	Indiana
Brand launch Units per week for 8 weeks	1,000,000	3,000,000	1,440,000
Launch total	8,000,000	24,000,000	11,520,000

Units per week post launch	500,000	2,000,000	900,000

Proposed ingredients for new Dove Men+ Care Natural Power anti-perspirant deodorant

Aluminium Zirconium (active ingredient) Tetrachlorohydrex GLY, Cyclopentasiloxane, Stearyl Alcohol, C12-15 Alkyl Benzoate, PPG- 14 Butyl Ether, Hydrogenated Castor Oil, Fragrance (Parfum), Dimethicone (polymethylsiloxane), Polyethylene, Steareth-100, Helianthus Annuus (Sunflower) Seed Oil, Butylated hydroxytoluene (anti oxidant), Zinc Oxide (0.05%)

Email

To: You

From: Alicia Marino, Factory Manager

Subject: Zinc Hi,

I've received Carlo's summary of the new plans for Dove Men. I understand that he's already had provisional acceptance of the plans from our counterparts in Mexico and Ireland. In Indiana we've experienced reputational damage in the past when chemical contaminants resulting from our manufacturing processes were linked to the pollution of the local area's watershed. Clearly, we've more than addressed this since Project Neutral in 2010 but the matter remains in recent memory.

Waste degeneration at the Indiana site now relies on naturally occurring bacteria in the system to break down our waste. The introduction of zinc compromises the system's ability to do this. Additionally, we cannot risk any anthropogenic emissions of the mineral into the air or water where, at certain levels, it can be toxic to living organisms.

As part of Project Neutral, we calculated the kiloliter volumes of common waste material the system was capable of processing safely each week I attach for your information the system's capability for handling ZnO. ZnO by-product is calculated at 1% per liter of manufactured product (where 1 liter = 1000 g). I also attach our current weekly (7 day) run rates in the deodorant category, and looking at these against the desired volumes, I cannot see how Indiana would manufacture this new product without introducing risk into the environment.

Please make sure that this is taken into consideration as part of the feasibility assessment.

Regards, Alicia

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Alicia Marino, Indiana Factory Manager

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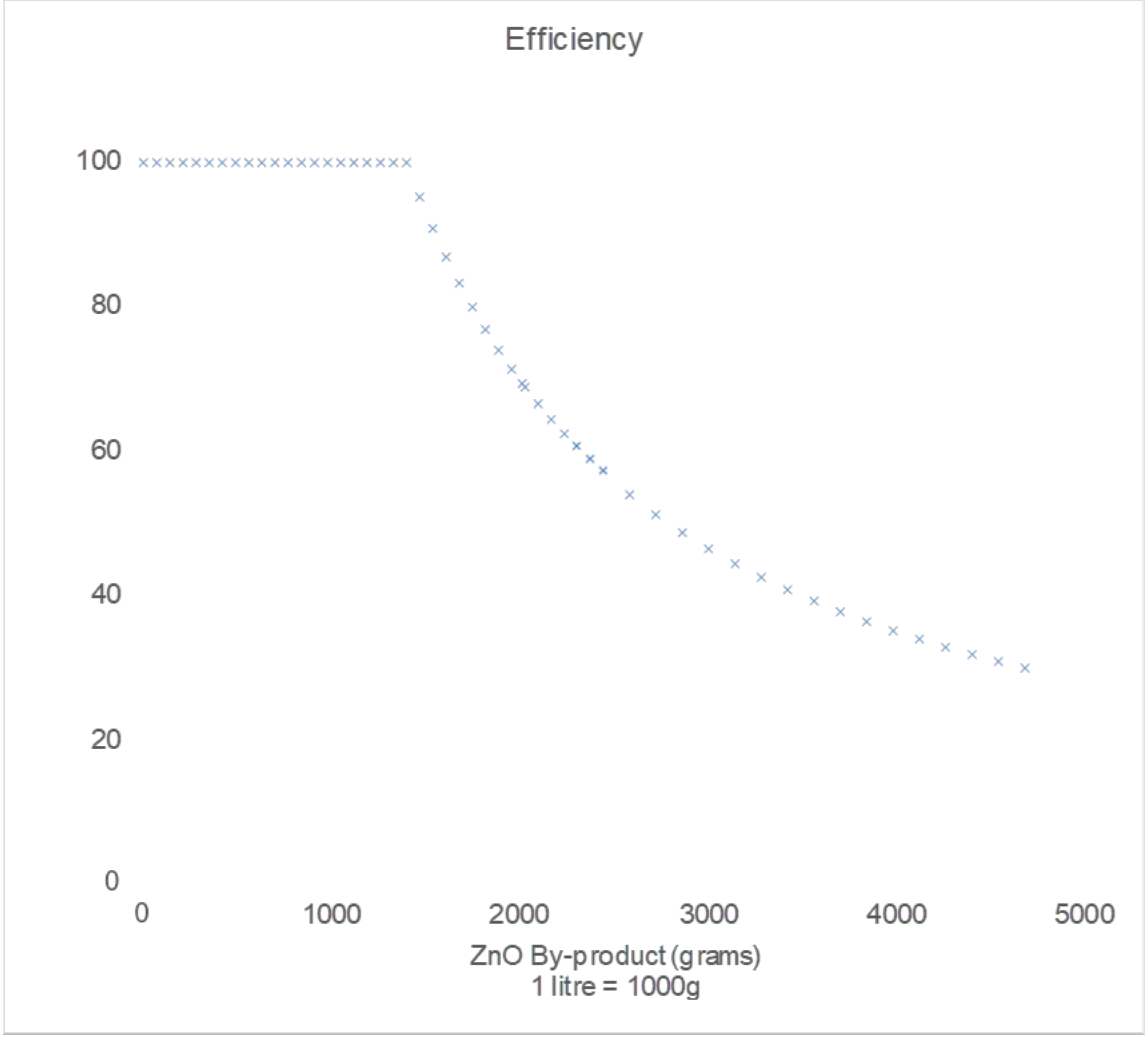

Fig 1. ZnO waste degeneration

	Units per Minute	Units per day/24 hr shift
Deodorant (100ml)	400	576,000

Fig. 2 Current run rate per 7 day week

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