



Contents lists available at ScienceDirect

Trends in Food Science & Technology

journal homepage: <http://www.journals.elsevier.com/trends-in-food-science-and-technology>

Commentary

Cool snacks: A cross-disciplinary approach to healthier snacks for adolescents



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ARTICLE INFO

Article history:

Received 16 June 2013

Received in revised form

6 October 2015

Accepted 11 October 2015

Available online 22 October 2015

ABSTRACT

Young people snack and their snacking habits are not always healthy. We address the questions whether it is possible to develop a new snack product that adolescents will find attractive, even though it is based on ingredients as healthy as fruits and vegetables, and we argue that developing such a product requires an interdisciplinary effort where researchers with backgrounds in psychology, anthropology, media science, philosophy, sensory science and food science join forces. We present the COOL SNACKS project, where such a blend of competences was used first to obtain thorough insight into young people's snacking behaviour and then to develop and test new, healthier snacking solutions. These new snacking solutions were tested and found to be favourably accepted by young people. The paper therefore provides a proof of principle that the development of snacks that are both healthy and attractive to adolescents is possible if based on an interdisciplinary, concerted effort.

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1. Introduction

Snacking, defined as food consumed between the three main meals (de Graaf, 2006), is an important part of the daily life of adolescents. Snacks are among the first food products that adolescents buy with their own money for consumption outside a family context (Brown, McIlveen, & Strugnell, 2000; Nicklaus, Boggio, Chabanet, & Issanchou, 2004). Often snacks have a high content of saturated fat, salt and refined sugar, and the public debate suggests that adolescents tend to eat too much unhealthy food resulting in negative consequences for public health such as obesity and lifestyle-related diseases (Christensen, 2003; Fagt et al., 2004). Public concern has given rise to numerous initiatives, mostly using informational and educational tools, which aim at encouraging people to choose healthier alternatives. However, there is

clearly also a role for new product development. If young people prefer less healthy snack products, somehow the existing more healthy alternatives seem to appear as less attractive to them. There is no reason to believe that healthier alternatives are not chosen just because they are healthier. It is thus worth asking whether it is possible to develop a healthy snack product that adolescents will find attractive.

Developing such a product should be based on a thorough understanding of the target group, its snack preferences and the determinants of these preferences. The importance of consumer insight in the new product development process is scientifically well-established (e.g., Im, Nakata, Park, & Ha, 2003), widely acknowledged in the industry, and has led to a range of tools for consumer-oriented new product development (Grunert et al., 2008). Still, there have been no breakthrough successes in the development of healthy snacks for adolescents. We believe this is because of two major hurdles. First, the dominant approach of analysing food preferences as a result of individual deliberation is generally limited (Kösters, 2009), but may be especially limited in

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the case of adolescents choosing snacks (Weijzen, de Graaf, & Dijksterhuis, 2008). It is now widely accepted that food choice is to a large extent governed by habits and routines (van't Riet, Sijtsema, Dagevos, & De Bruijn, 2011) and that attempts to change behaviours therefore need to be analysed not only based on an analysis of the deliberate formation of preferences, but also on an understanding of how the environment in which such choices take place influence decisions (Dolan et al., 2012). There is also reason to believe that snack choices of adolescents are heavily influenced by social interaction in peer groups (Nørgaard, Hansen, & Grunert, 2013), a phenomenon that, while acknowledged, has received only limited attention in research on consumer food choice (Kuenzel & Musters, 2007). Second, even the most careful consumer insight study does not give clear directions as to how the new product should look like. It needs to be translated into a technologically feasible product specification, and earlier attempts to formalize this process have had only limited success (Benner, Linnemann, Jongen, & Folstar, 2003). The necessary interplay of different disciplines in new product development has received considerable attention in the innovation management literature (Jacobsen et al., 2014), but there are few documented cases on how these different disciplines indeed can play together in successful product development.

In this paper we present the COOL SNACKS project, which was an attempt to develop a healthy snack solution based on fresh fruit and vegetables perceived as attractive by 10–16-year old adolescents. The project was based on the assumption that developing such a product is possible *if* it is based on an understanding of adolescent snack choices that looks not only at individual preferences but also at daily routines and choice/consumption environments, and *if* the insight thus generated is turned into a physical

product in a transparent and systematic way where competencies enabling customer insight and competencies enabling food production interact. The point of departure of the COOL SNACKS project was therefore that such a development process is an interdisciplinary task, i.e. a task combining insight from the social sciences and humanities to obtain a deep understanding of adolescents' existing snacking behaviour, and then supplementing this understanding with insight from food processing technology and logistics to arrive at a solution that is both technically feasible and attractive in the minds of adolescents. The project aims therefore to demonstrate that the development of such a product is possible if the right set of competencies is combined in the process. Fig. 1 summarizes the COOL SNACKS project work flow.

The rest of the paper follows the structure of Fig. 1. We first report a series of studies that had the aim of understanding adolescents' current snacking behaviour, leading to a set of requirements that a healthy, fresh fruit and vegetable-based snack would need to fulfil for adolescents to regard them as attractive. We then describe how this set of requirements was transformed first into product concepts and then into physical prototypes, taking into account a number of technological and logistical constraints. Then we show how the COOL SNACK solutions were tested in a real-world school setting. We close with perspectives for user-driven development of healthy food products.

2. Putting snacking behaviour in context

In order to successfully develop new healthy snacking solutions, we formed an understanding of adolescents' current snacking behaviour through a range of mutually complementary studies: an analysis of adolescents' individual choices of existing snack

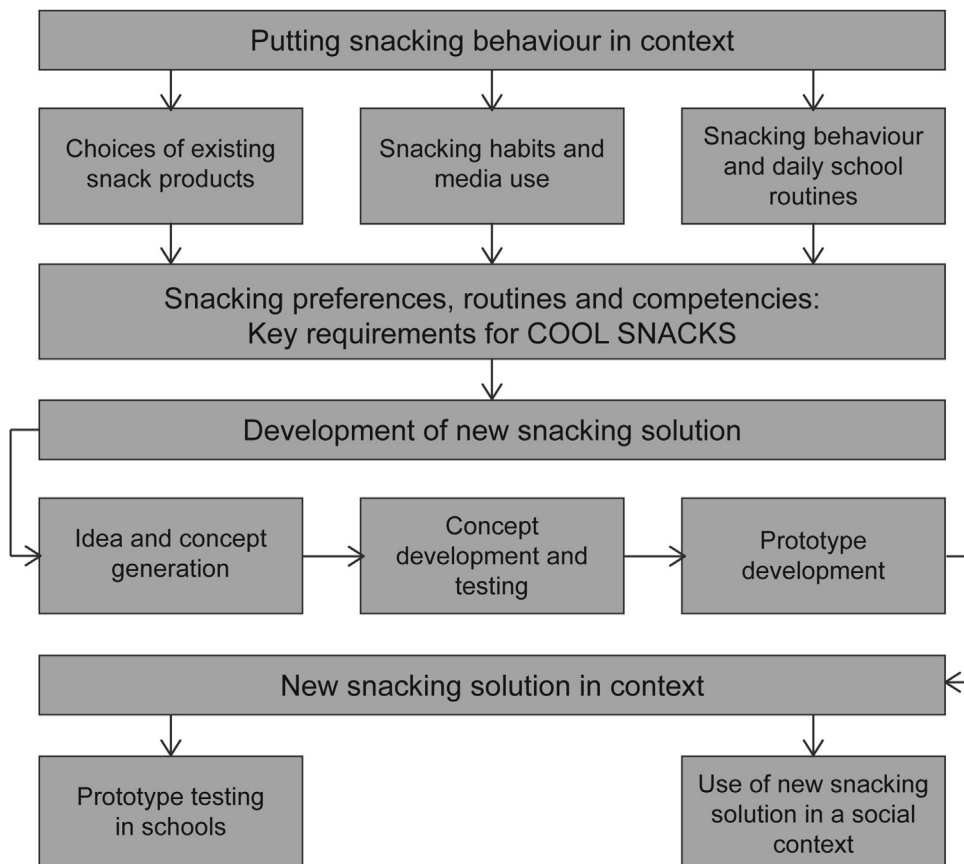


Fig. 1. Work flow in the COOL SNACKS project.

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