Elite Athlete Attitudes toward Technology and Innovation in the Sporting Goods Industry

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In today's economy, gaining an edge in the marketplace is imperative. One way companies gain this edge is through innovation. Sporting goods manufacturers produce and sell over $87 million in sports equipment annually and spend countless hours and financial resources creating innovations touted to improve athletic performances (National Sporting Goods Association, 2008). Despite their best efforts, they still lack the ability to satisfy all of their customers. Elite athletes with disabilities (Paralympians) rely heavily on equipment and the latest technologies and represent one group with needs not readily met by sporting goods manufacturers (Brittain, 2010). These athletes often resort to creating their own products to address gaps in marketplace offerings while improving their individual sport performances (Berg, 2006; Faupel, 2010).

Athletes who develop and/or manufacture their own equipment are what von Hippel (2007) called “lead users” in the innovation literature. Researchers have identified three common attributes of athletes as lead users in the sporting goods industry. First, these athletes typically have significant sport experience and advanced athletic skills. Second, they express frustration with existing mass-market sporting goods, and develop customized products to address marketplace gaps. Third, they often partner with other athletes and manufacturers to create these products, which can profoundly affect the sporting goods industry. Their innovative products can help sport participants advance beyond their present performance levels (Franke & Shah, 2003; Hienert, 2006; Shah, 2000; 2007; von Hippel, 2007).

Researchers have documented the existence of recreational athletes as lead users in sports such as cross-country skiing (Lüthje, 2003), kayaking (Hienert, 2006), sailing (Raasch, Herstatt, & Lock, 2008), and snowboarding (Shah, 2000). Fewer studies have examined elite athletes with disabilities as lead users (Crawford & Stodolska, 2008; Franke & Shah, 2003). The purpose of the study was to examine elite athletes with disabilities and their attitudes toward technology and innovations in the sporting goods industry. The study addressed three research questions:

1. What product gaps do elite athletes see in the sporting goods marketplace?

2. How do elite athletes address the gaps with their sport and technical expertise?

3. How do elite athletes interact with other sport community members to address gaps?

The study was exploratory in nature and used qualitative data collection and analysis, specifically grounded theory, to address the research purpose and questions. Grounded theory was used to generate and develop a theory from data systematically gathered and analyzed (Patton, 2002). The study focused on the athletes and their personal experiences, and the researchers examined the athlete attitudes toward sporting goods technologies and innovations. Purposeful sampling techniques were used to select the athletes, and the techniques helped yield information-rich cases and illuminated the questions under study.

Five athletes participated in the study—two females and three males. Four of the athletes were from the United States, and the fifth athlete was from Japan. Two athletes were wheelchair racers, two athletes competed in wheelchair basketball, and one athlete competed in both sports. The athletes accumulated significant sport experience, playing their respective sports for six to 14 years and participating and competing at regional, national, and international levels.

The data collection process involved semi-structured interviews with the elite athletes and addressed three major
areas: (a) their personal sport history, (b) their attitudes toward technologies and innovations within the sporting goods industry, and (c) their roles as lead users in the sport community. Each recorded interview lasted 25 to 45 minutes.

After collecting the data, the researchers used detailed grounded theory coding techniques and constant comparative analysis as advocated by Strauss and Corbin (1998). The data were analyzed by moving from describing and categorizing to relationship building and theorizing (Glaser & Strauss, 1967). First, open coding allowed the researchers to thematically organize and extract raw data relating to the concepts of “personal history,” “attitudes,” and “roles” (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Second, axial coding helped to cluster the categories as themes began to surface, and preliminary words were identified to describe the emergent themes. Constant comparative analysis was used throughout this stage to ensure the emerging framework was inherently grounded in the data (Glaser & Strauss, 1967). Finally, selective coding allowed the researchers to develop an emerging model illustrating the major concepts, subcategories, categories and their connections (Strauss & Corbin, 1998), leading to a theory about elite athletes as lead users and their attitudes toward sporting goods technologies and innovations.

The study results revealed three major themes: (a) product gaps, (b) addressing the gaps, and (c) sport community involvement. First, the athletes asserted product gaps existed, and they believed the gaps related to accessibility—having limited access to manufacturers and equipment options, research and development, and manufacturers not investing enough resources in creating new equipment or using different materials. Second, to address the gaps, the athletes leveraged their personal technical knowledge, relying upon their extensive sport experience to make minor repairs and/or major modifications to their equipment. The athletes also used this knowledge to create new equipment, whether repurposing products from different sports or developing new products such as gloves and strapping systems. Third, working with sport community members facilitated the innovation process. The athletes viewed teammates, coaches, and manufacturers as part of their community, and used them as resources when discussing existing products, brainstorming ways to address product gaps, and trying out equipment used by other athletes.

From a theoretical perspective, the study extended the innovation literature related to lead users by examining elite athletes with disabilities as lead users. The study found themes similar to those identified in other lead user studies (Franke & Shah, 2003; Hienerth, 2006; Shah, 2000; 2007). The athletes expressed frustration with existing products and leveraged their sport expertise and other community members to address product gaps and develop new products. The study also identified practical implications and suggestions for sporting goods manufacturers such as working more closely with the elite athletes and creating new products to meet their needs. The presentation will review the study’s findings as well as the theoretical and practical implications in more detail.