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In February 2011, MedPanel, LLC hosted an online survey of sixty-two orthopedic surgeons from practices across the country, divulging industry perspectives on the most innovative hip and knee implant manufacturers. This is the first of an ongoing series with orthopedic surgeons, who are uniquely positioned as end-users to judge innovation.

The responding orthopedic surgeons were asked to select the single manufacturer they believe to be the current leader in innovative hip and knee implants and then were asked to explain their rationale behind this perception.

Most Innovative <u>Hip</u> Implant Manufacturer		
Rank	Manufacturer	Orthopedic Surgeons Selecting
1	Stryker	29%
2	Zimmer	21%
3	Biomet	11%
4	J & J/DePuy	10%
5	Smith & Nephew	10%
6	Wright Medical	6%

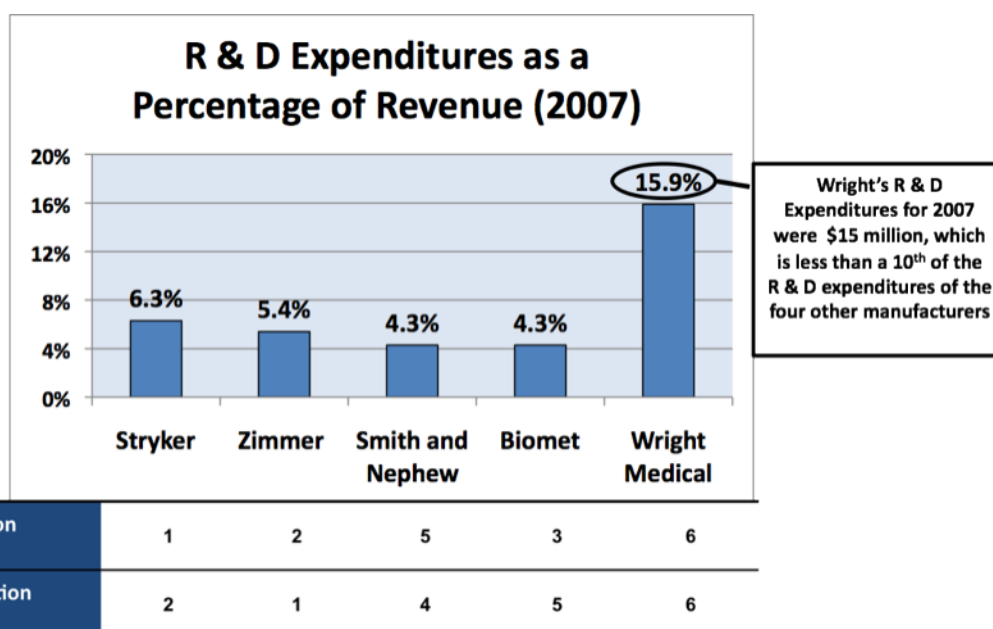
Most Innovative <u>Knee</u> Implant Manufacturer		
Rank	Manufacturer	Orthopedic Surgeons Selecting
1	Zimmer	21%
2	Stryker	20%
3	J & J/DePuy	18%
4	Smith & Nephew	13%
5	Biomet	11%
6	Wright Medical	7%

Hip Implants

Stryker and Zimmer hold dominant positions as the first and second most innovative in the hip space. With respect to Stryker, one orthopedic surgeon states, "Stryker will NOT go along with the crowd and keeps producing a SAFE product. That is innovation that protects both physician and patient." Another indicates, "[Stryker] is not only looking at different bearing surfaces but also with the Bipolar Total Hip, they give multiple options of large bearings without the need for metal on metal." Zimmer advocates point to their trabecular metal cups and revision modular stems as strong product improvements: "[Zimmer was] first out of the blocks with what appears to be a safe modular neck-stem implant years ago. Trabecular metal 'porous metal' surface coating was experimented with early on as well."

Knee Implants

Zimmer, Stryker, and Johnson & Johnson/DePuy are similarly perceived as leading innovators in knee implants. "[Zimmer] has a long track record with knees with variability, longevity, and now incorporating custom aspects." Another orthopedic surgeon says, "The Stryker Triathlon knee system has shown very good results. I expect continued quality products from Stryker." A Johnson & Johnson knee implant supporter suggests, "The RPC knee is simply the best. I think it is the most widely used worldwide."



*Johnson & Johnson/DePuy R & D Expenditures were not evaluated

Effective research and development spending should yield a market advantage in innovation in the future. We tested this hypothesis by looking at R & D expenditures as a proportion of company revenue and correlating it with the innovation index.

The manufacturers allocating the largest percentage of revenue towards R & D in 2007 were perceived by the surgeon community as most innovative in February 2011. In 2007, Stryker allocated 6.3% of its \$6 billion in revenue to R & D, while Biomet put 4.3% of \$2.2 billion in revenue to R & D, a potential factor in the distinction in perceived innovativeness. The exception to this trend was Wright Medical, who put 16% of revenue towards R & D in 2007, but is likely perceived as less innovative due to its relatively limited resources (\$122 million in revenue in 2011 vs. Stryker's \$7.3 billion in revenue).

In 2010 Stryker and Zimmer still led the way in revenue allocated to research and development – 5.4% and 5.2% respectively. If the relationship between R & D expenditures and future innovation holds, you can expect to see these two manufacturers at the forefront of innovation in hip and knee implants in years to come.