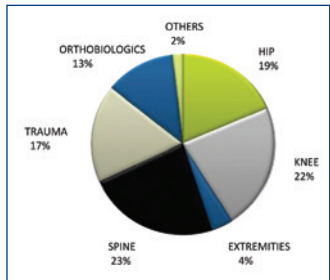


# MARKET MAPPING & CONTRACT MANUFACTURING

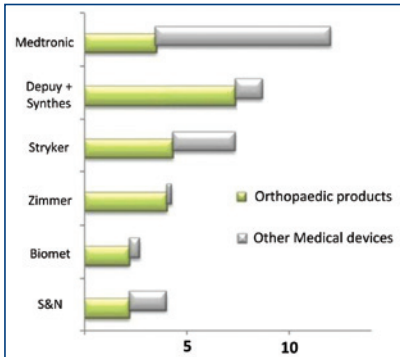
## Worldwide Orthopaedic Market

Worldwide Orthopaedic market covers devices for reconstruction of bones, as replacement, and fracture fixation, as temporary implant, spinal & orthobiologics. Most leading companies are active in all segments.

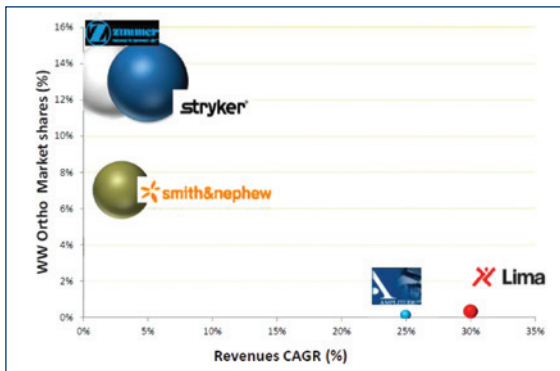
65% of the 32 B US\$ (2010) is served by global players with sales and manufacturing worldwide.



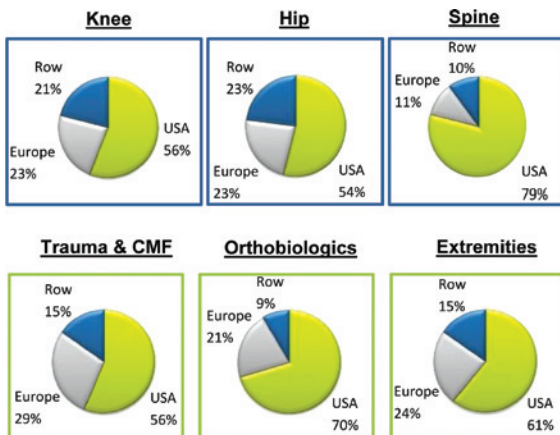
Revenues of the Major Orthopaedic Companies (B\$)



## Majors Vs Challengers: Majors save ranking & Challengers growth!



## Worldwide implant market in value: geography

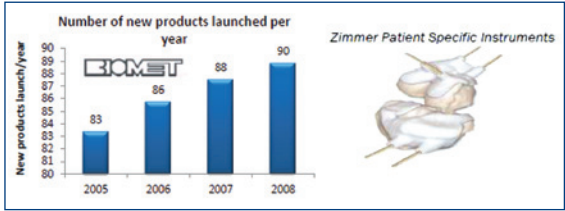


## Innovations & new products driving the market :

- customized instruments and implants,
- minimally Invasive Implants and Instruments,
- cementless products,
- orthobiologic products,

- high end materials (Ceramic, PEEK, PLA, Bioglass...),
- new processes (Additive, Trabecular metals, Metallic foams...),
- ...

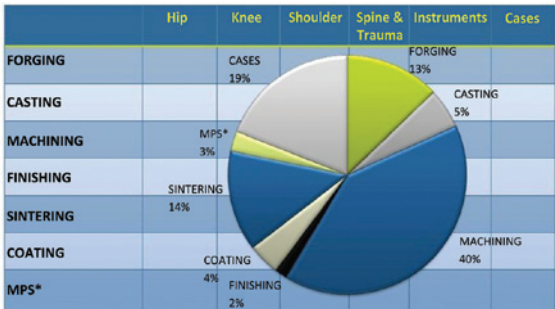
In the past 9 years, BIOMET introduced 800+ new products in the market.



## Trends of Orthopaedic Contract Manufacturing

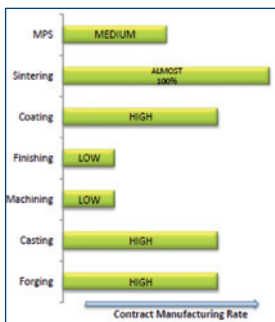
### Contract Manufacturing segmentation

Orthopaedic Contract Manufacturing Market by Services

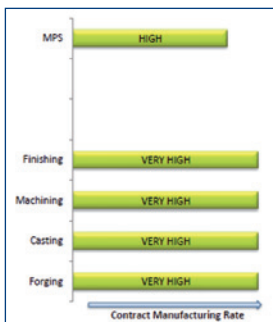


\*Mps : Marking, Packaging, Sterilization

Contract Manufacturing rate for IMPLANTS



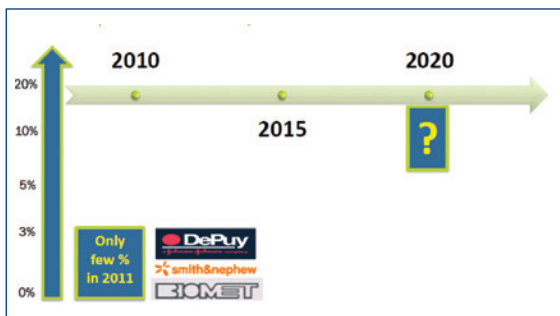
Contract Manufacturing rate for INSTRUMENTS



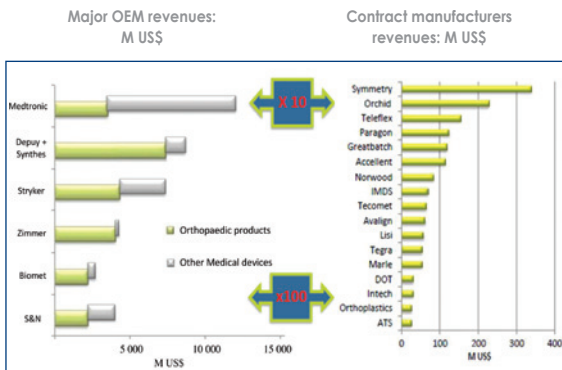
Most of machining and finishing is done internally, as OEM are looking for global contract manufacturers.

### Estimated % of instruments made in BRIC countries by certain major OEMs

Estimated % of instruments manufactured in BRIC countries in worldwide annual production for DEPUY, SMITH & NEPHEW and BIOMET.

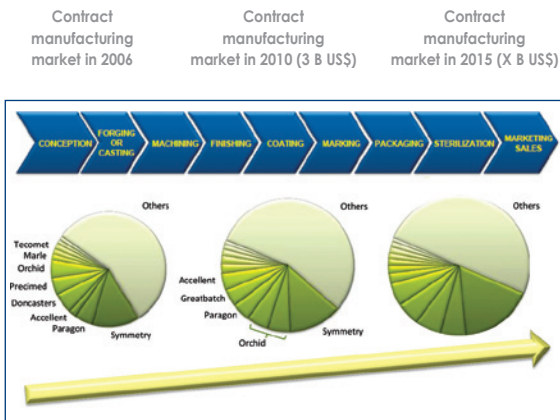


## The Orthopaedic suppliers are relatively small, compared to OEM



Top 15 account for just more than 1 B US\$.

The cake is growing for contract manufacturers.



# Contract manufacturing market

## Contract manufacturing market chain value



## Future outlook

OEM are looking for Contract Manufacturers who are recognizing mutual interdependency and targeting common goals



- Concentration in the OEM orthopaedic market continues.
- OEM are moving towards a focused supply base, with a consolidation of vendors.
- The OEM sold facilities to contract manufacturers, an expected trend for the future.
- China is becoming the new investment place for manufacturing generic instruments and local use, but the main part of implants and customized instruments will not switch from Europe or US to BRIC countries.
- The Challengers Vs Majors: a double digits growth for challengers ... however majors are losing market shares or staying stable.
- OEMs need structured suppliers ready to:
  - Deliver within shorter lead times, with flexibility.
  - Be efficient in terms of less waste and thus reducing manufacturing costs.
  - Share with them more responsibility and risk concerning regulatory constraints.
  - Get more outsourced business, trend is clear, second tier not yet organized but welcome.
  - Increase customer value with a broader range of products and services.

## Partner

*AVICENNE was founded in 1992 by Ali Madani.*

*Avicenne is a world's leading marketing and consulting companies helping international companies and public institutions make decisions on strategy, finance, operations, product development, market research and new technologies applied to Orthopaedic Implants and Medical devices.*

*AVICENNE conducts its analysis worldwide through international offices in France (Paris), the USA (San Diego), Japan (Tokyo) and Austria (Vienna), providing sustainable and in-depth information for decision-makers in highly innovative industries.*

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