

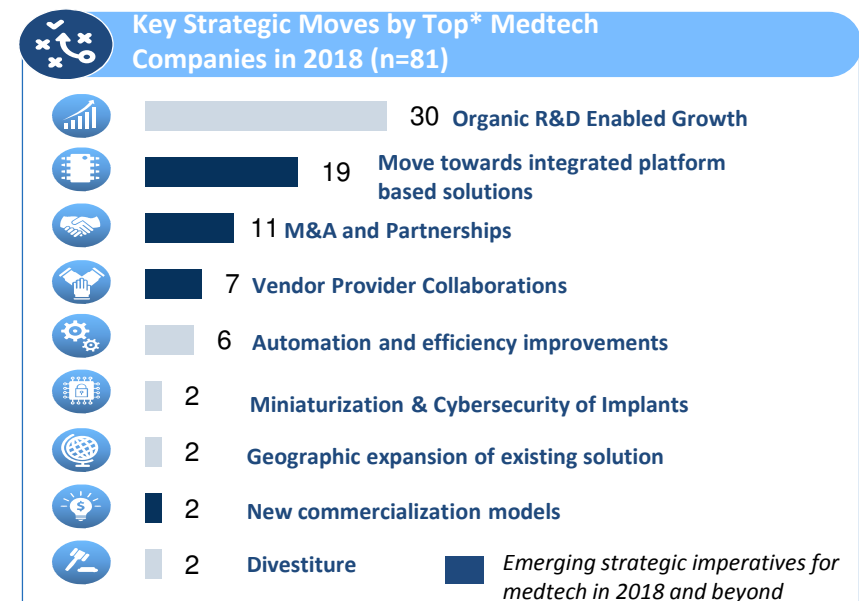
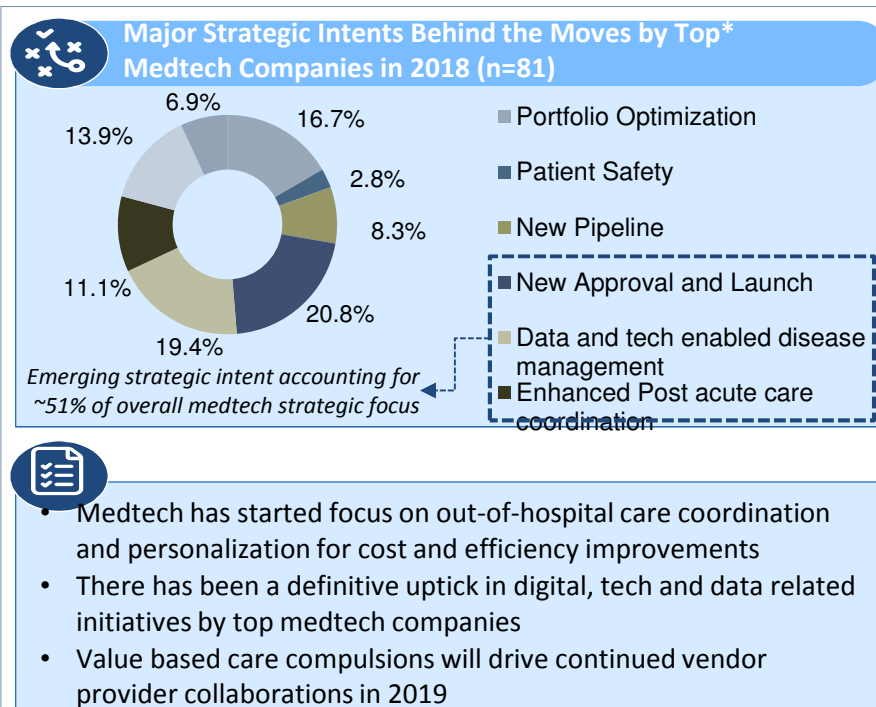
FROST & SULLIVAN



**2019 HEALTHCARE PREDICTIONS UNLEASHED –
GROWTH OPPORTUNITIES, TECHNOLOGY, AND TRENDS**
How Tech and Industry Convergence Will Drive Care Delivery Innovation

2018 Medtech Strategic Snapshot

Medtech companies in 2018, adopted a strategic shift towards achieving tech and data enabled solution efficiencies aimed at enhanced personalization and better post acute care coordination



*Based on analysis of 2018 press releases of 5 medtech giants, viz., Medtronic, J&J, Philips, Abbott Laboratories and Becton Dickinson & Co. "n" refers to number of interpretations out of a total of 70 press releases analyzed

Source: Company Websites; Frost & Sullivan

Key 2019 Medtech Market Predictions

**AI in robotic surgery
would lead to new
applications**



AI, ML and DL enabled surgical robotic systems to witness major breakthroughs in terms of application across new areas such as joint replacement, neuro and spinal surgeries

**Data driven business
models will account for
enhanced medtech
revenues**



4 in 10 medical device companies will invest in data analytics algorithms to drive Insights-as-a-Service and Intelligence-as-a-Service business models which will drive 3-5% of their revenues in 2019

**Augmented and Virtual
Reality Would Enter the
Operating Room**



Augmented Reality (AR) based headsets and surgical navigation systems to witness first ever commercial adoption in Hip, Knee and Shoulder Arthroplasty, Spine Surgery and Osteotomies

**Smartphone would be
the new medical device
accessory for clinicians**



Medical device companion smartphone apps would reduce GP visits by 2-5% in developed markets. Respiratory and mental health solutions to be new growth areas beyond cardiovascular and diabetes

Image Source: Thinkstock, Frost Database, Company Logos

Source: Frost & Sullivan

Key 2019 Medtech Market Predictions

Orthopaedics — Would be the Next Frontier for Clinical Grade Wearables



Medtech will leverage clinical and non-clinical grade wearables to improve post-acute coordination in orthopedic rehabilitation. 2019 might also witness the first ever clinical grade orthopedic wearable.

Robotic Automation of Hospital Processes



Infection control OEMs, in partnerships with robotic automation providers, will offer customized automation consulting solutions representing an addressable market opportunity of \$3.5 billion in 2019

Smart Home Based Aging-in-Place Gets Serious About Core Healthcare Needs



Smart home ecosystems to integrate home based health monitoring, drug delivery and dispensing systems into smart homes designed for aging-in-place, also enabling newer possibilities for telemedicine around continuous care

Oncology to be the new area primed for data driven disruption

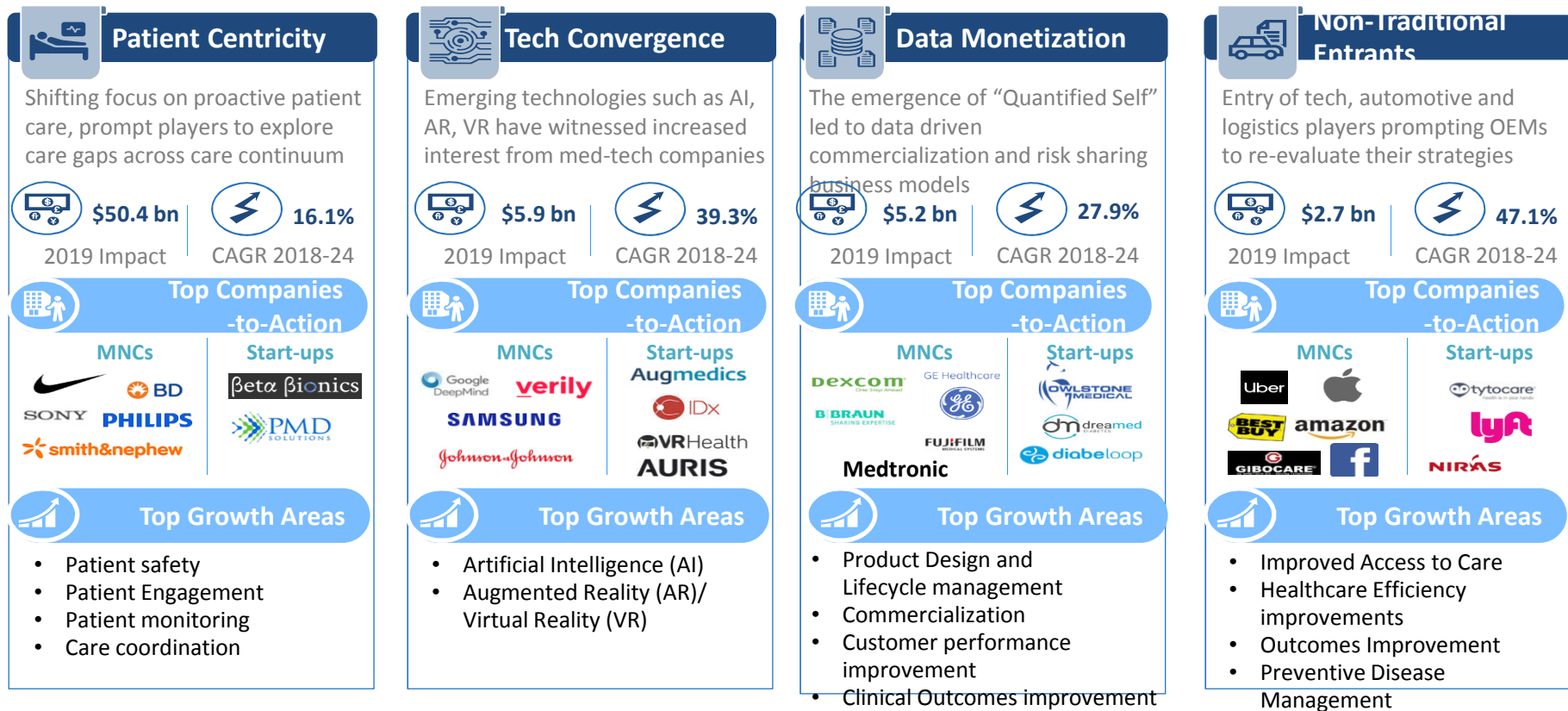


Specialties like lung cancer, driven by the unmet need for early detection and timely intervention, will see increase, in adoption of data driven screening, tracking and workflow platforms to streamline care pathways

Image Source: Thinkstock, Frost Database, Company Logos

Source: Frost & Sullivan

Growth Opportunities for the Global Medtech Industry in 2019 and beyond



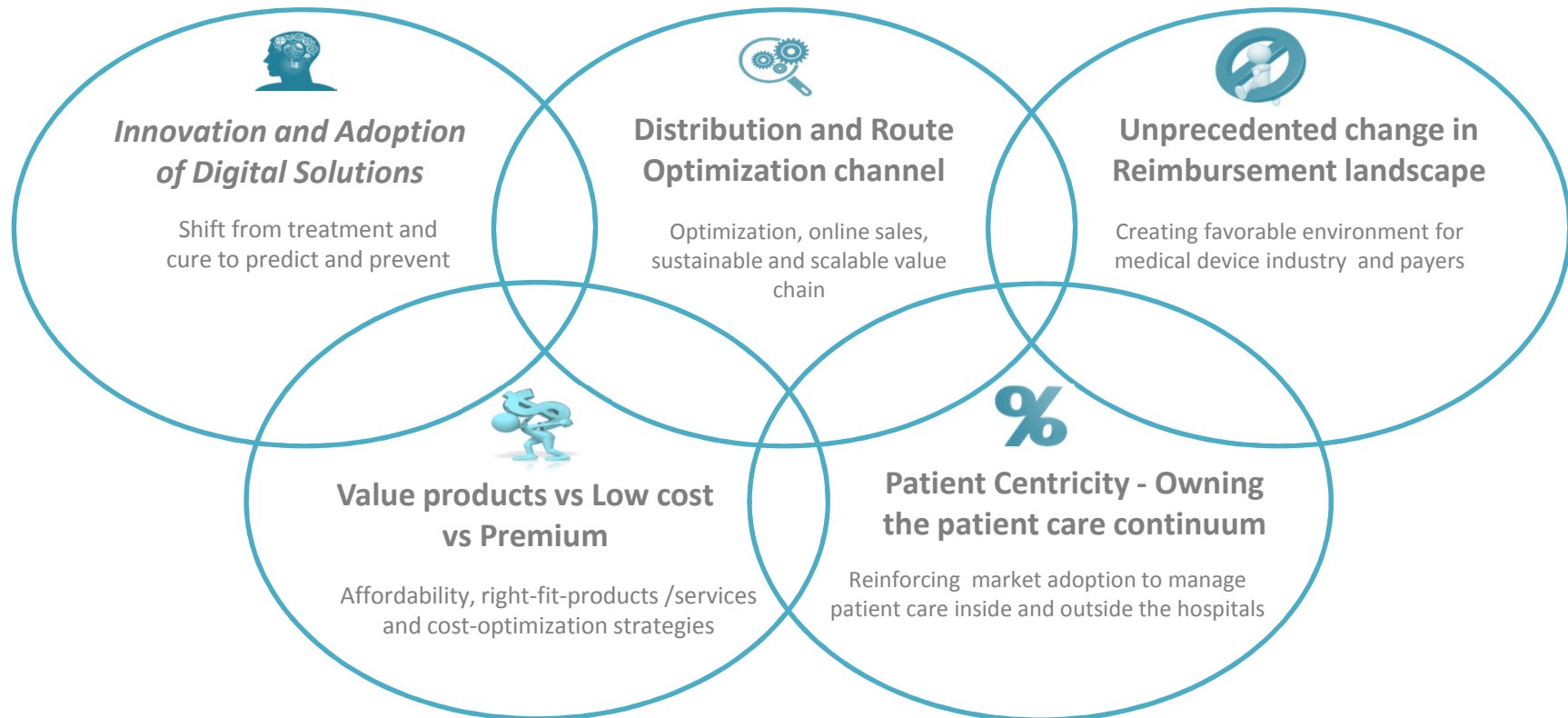
Source: Frost & Sullivan

2019 APAC MEDICAL DEVICES OPPORTUNITIES



F R O S T  S U L L I V A N

Five Big Themes of the APAC Medical Technology Industry

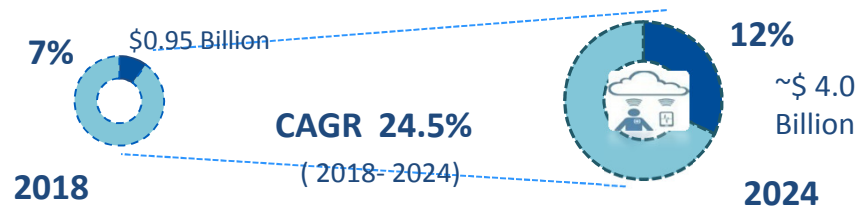


Source: Frost & Sullivan

Theme 1: Adoption of Digital Solutions

APAC will emerge as the fastest growing market in connected medical device segment due to comprehensive and focused attempts by key stakeholders like government to promote the digital adoption

APAC share in global connected medical devices market



APAC Share in global connected devices market is predicted to increase from **7%** to **12%** in next 5 years

Key Take-away

- ✓ APAC will be the fastest growing markets for connected medical device with CAGR of 24.5% during 2018-2024, while global markets are growing at an average 18.6% CAGR
- ✓ Government push for digital adoption, raising smart hospitals, demand from home care segment will stimulate the growth

Share of connected medical devices in total medical device market in APAC



Share of connected devices in the total medical devices market will increase from less than **1%** to **3%** in next 5 years

Key Take-away

- ✓ Japan and China will capture the largest share, around 2/3rd of total APAC's connected device market
- ✓ High cost of devices and stringent reimbursement policies in emerging markets like India, ASEAN will hamper the growth in shorter run

Source: Primary Research; Frost & Sullivan

Increased adoption of complementary technologies like cloud computing, IOMT and Big Data analytics by healthcare institutions across APAC will be a driving factor for medical device firms to further align their strategies toward innovations and digital solutions

Contributory technologies for optimal adoption and usage of connected medical devices

Platform



Cloud Computing
CAGR – 28.6 %

(2018- 2024)

90% of hospitals in APAC are planning to invest , **around \$400 million**, in cloud technologies to explore the innovative solutions for patient centric care



Integrators



Internet of Medical Things
CAGR – 30.29%

(2018- 2024)

Overall market for IOMT healthcare is expected to reach 10.9 billion by 2024



Analyzer



Big Data Analytics
CAGR – 38.7%

(2018- 2024)

52% of Hospitals in APAC are planning to invest around **\$2.5 billion** in next 2 years

Theme 2: Distribution and Route Optimisation

Moving towards digitalized distribution systems

Key elements of distribution	Current level of technology adoption in distribution across major APAC markets				
	China	Japan	Australia	India	ASEAN
E-procurement systems					
Virtual Marketing and training					
Payment systems (Fee, EMIs, Renewals)					
Licensing applications for product usage					
Online purchase (Ecommerce)					

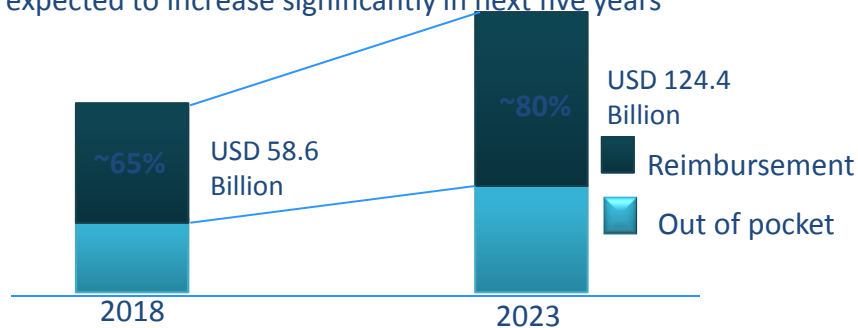
- Over 70% hospitals in India and ASEAN are still following manual procurement systems for medical device purchase, this trend is widely seen in public hospitals
- Standard order to remittance (OTR) time for a product is around 30% lesser in china and Japan, when compared to India, this is attributed to digital transactions for payments, licenses etc.
- Virtual marketing, 3D product experience has gaining popularity in the region, Distributors and OEMs are in early stages of partnering with large hospital groups to expand this model of selling, eventually, the remote hospital segment is beneficiary

Source: Primary interviews and Frost & Sullivan

Low High

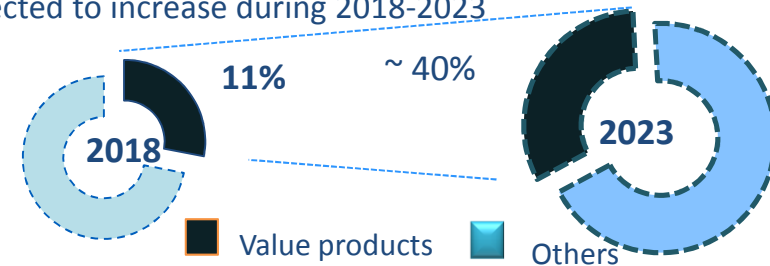
Theme 3: Reimbursement Landscape

Percentage of reimbursements for medical devices in APAC is expected to increase significantly in next five years



- ✓ Increase in private insurance and broader coverage across continuum are the key factors driving the shift
- ✓ India and ASEAN will witness a decrease in % of out-of-pocket expenses, which is currently higher than the APAC's average
- ✓ Value medical products will account for higher reimbursement amount (estimated to be over 90% of its price) and so large portion of incremental reimbursement value in next 5 years is captured by value segment

Share of value products in total medical reimbursements is expected to increase during 2018-2023

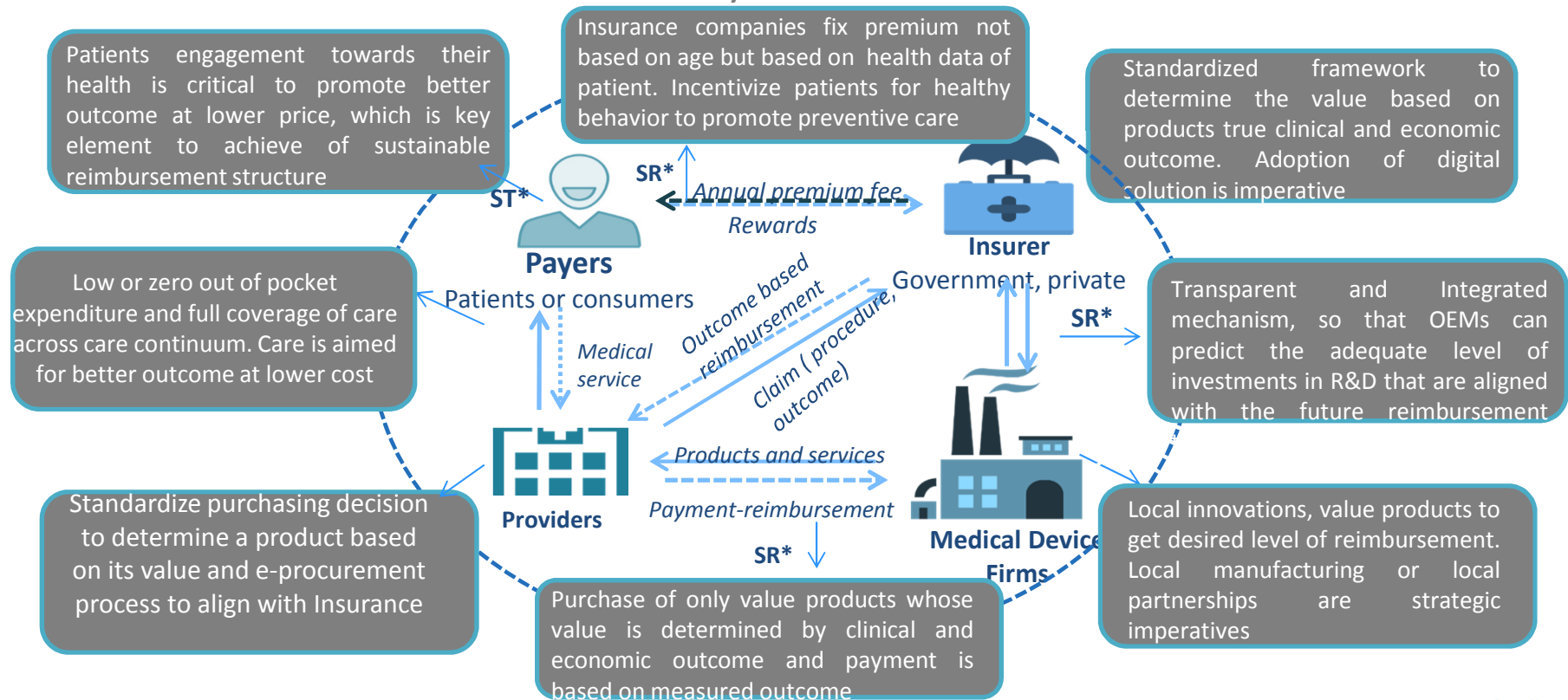


Shift toward outcome based reimbursement will fuel the growth of value products

- ✓ Increasing adoption of integrated mechanism to determine clinical and economic value of product by insurance companies will boost the market for value products
- ✓ Increased transparency in the eco-system will enable OEMs to predict the adequate level of investments in R&D that are aligned with insurance value requirements and the future reimbursement trends

Source: Frost & Sullivan

Reimbursement outlook 2023: 2019 will set the direction for rapid transformation to achieve sustainability

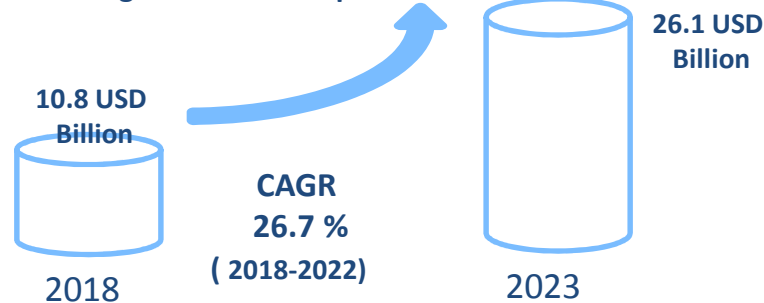


Source: primary interviews; Frost & Sullivan

Theme 4: The Value Product Segment

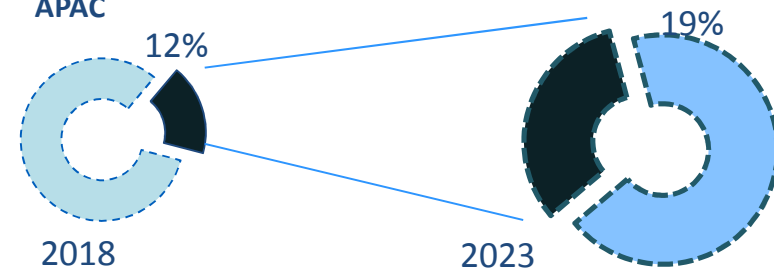
Market for value products is expected to occupy a significant dollar share in total purchase, driven by emerging markets with growing ,tier I, tier II and public hospitals

Exponential growth of value product market in APAC



Value segment is expected to reach USD **26.1** billion by 2023 from **10.8** billion in 2018

Revenue share of value products in total medical device in APAC



Share of value segment in medical device is expected to increase from **12%** in 2018 to **19%** in 2022

**~26%
APAC**



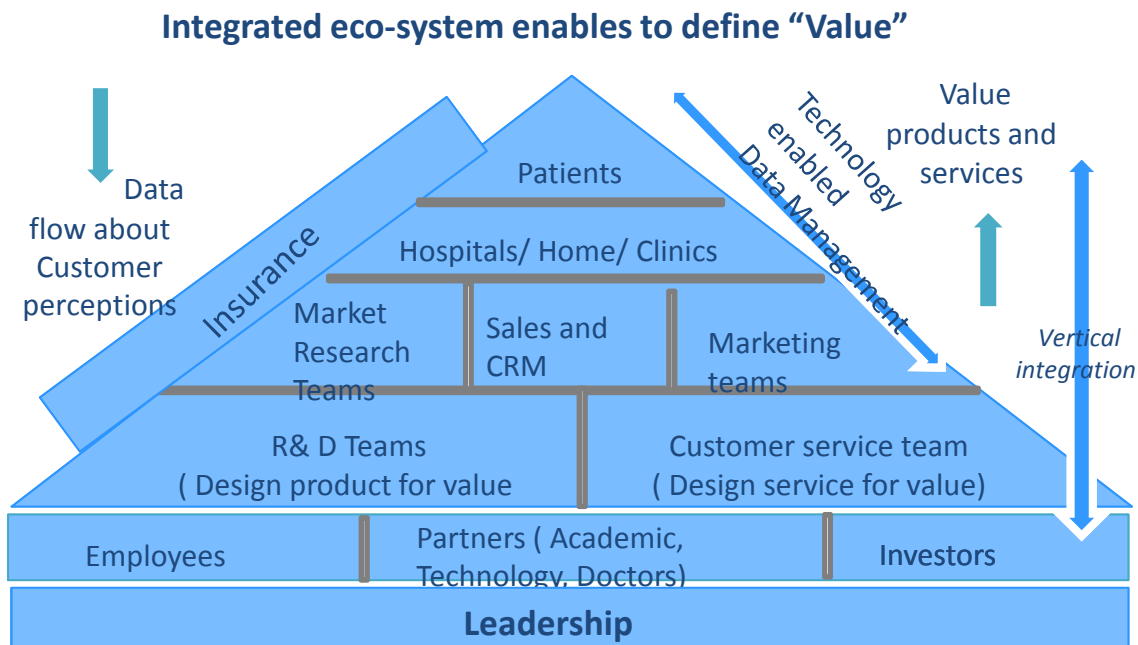
**~10%
Global**

APAC will experience the fastest average growth rate in value product category compared to global, over next five years

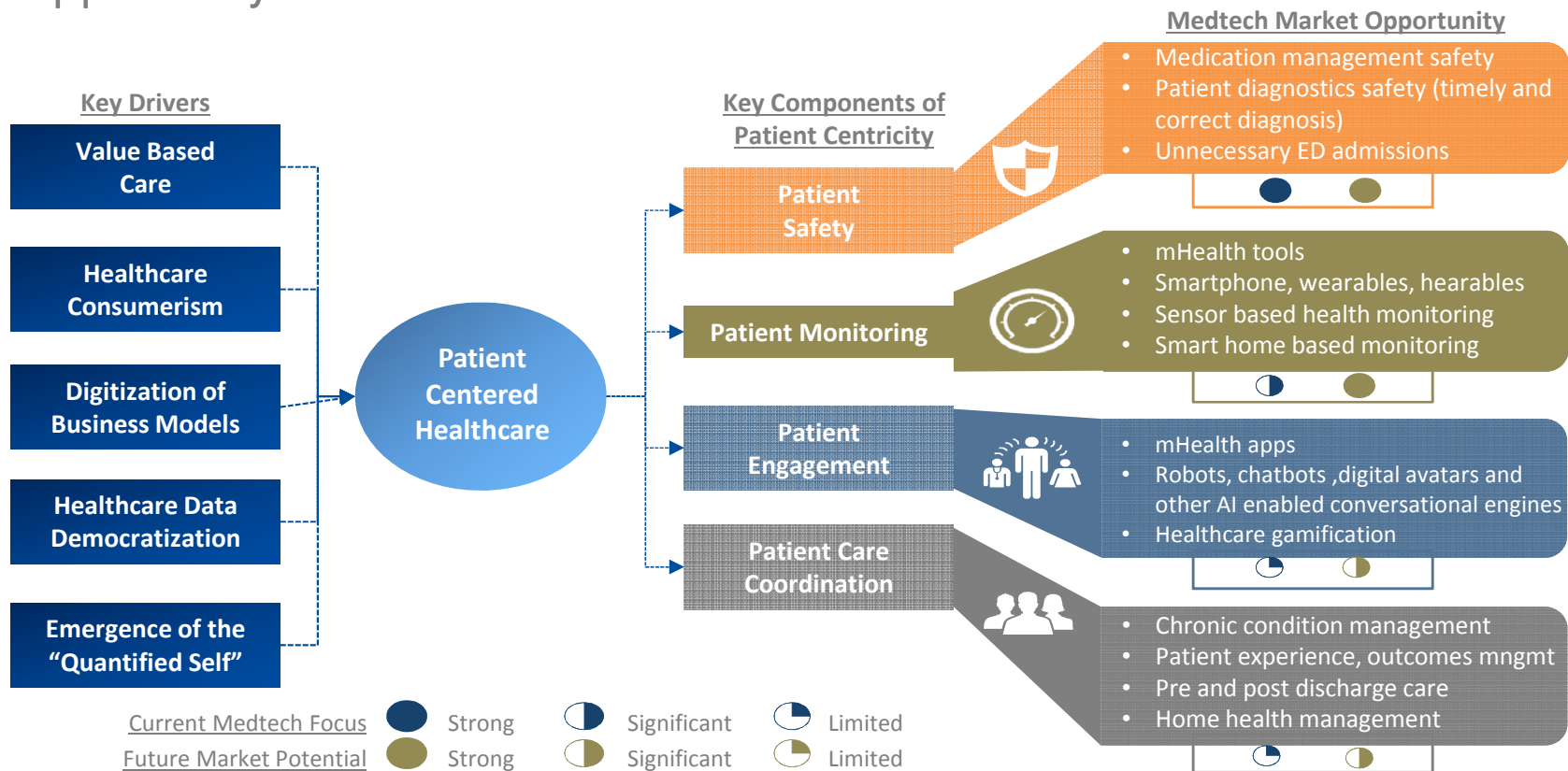
Value product market revenue growth rate

Market shifts + “Hand-me-down” approach in APAC has impacted market growth and resulted in a deeper look at right fit products for markets

An integrated eco-system that enables us to define “VALUE” is critical to success

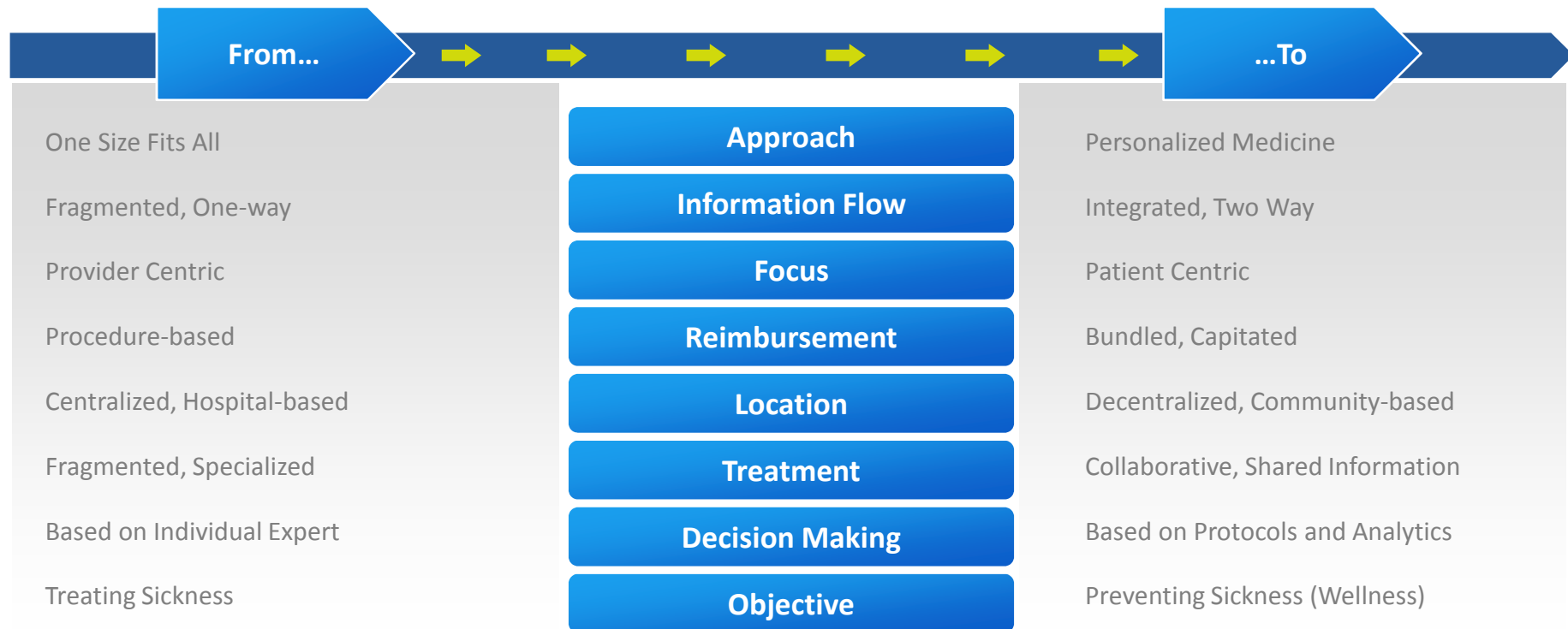


Theme 5: Key Components of Patient Centricity and the Medtech Market Opportunity



Source: Frost & Sullivan

Shaping the Future of Healthcare Personalization, Decentralization, Collaboration and Prevention



Source: Frost & Sullivan

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Appendix

Quantitative market information is based primarily on interviews and therefore is subject to fluctuation. Frost & Sullivan is not responsible for incorrect information supplied to us by manufacturers or users.

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