EVALUESERVE

Evolving surgical technologies in Ophthalmology:

Strategic perspectives, trends and future outlook

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Overview

Key pillars of surgical technologies in Ophthalmology

Benefits

Improved Efficiency:

By streamlining the surgical workflow, these systems can help improve overall efficiency in the surgical process

Enhanced Precision and Safety:

Advanced technologies such as image-guided navigation can help improve precision & lower the risks in surgical procedures leading to enhanced patient safety

Better Data Management:

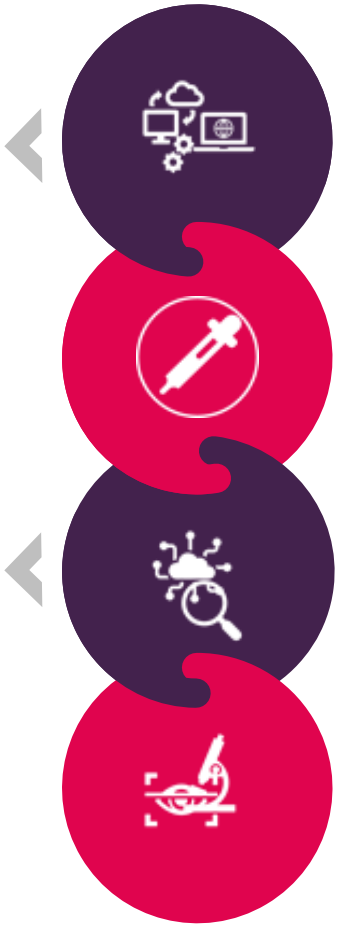
Interconnected workflow systems can help facilitate better data management, including patient data, surgical outcomes, and more

Interconnected Workflow Systems

These systems integrate preoperative, intraoperative, and postoperative phases of the surgical process, streamlining communication and reducing the risk of errors

Advanced Visualization and Imaging Technologies

These technologies provide high-quality imaging of the eye, enabling surgeons to plan and execute surgeries with greater accuracy



Minimally Invasive Techniques

These techniques involve smaller incisions and less tissue disruption, resulting in faster recovery times and fewer complications for patients

Innovative Surgical Tools and Devices to perform complex procedures

These devices, such as lasers and microscopes, are designed to enhance surgical precision and efficiency, and enable surgeons to perform complex procedures with greater ease and safety

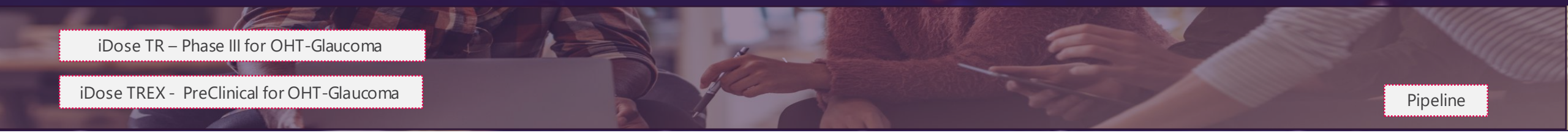
Key Players

Interconnected Workflow Systems

Zeiss	Alcon	J&J Vision	Bausch + Lomb	Topcon
Zeiss Cataract Workflow Zeiss Corneal Refractive Workflow Zeiss Glaucoma Workflow Zeiss Retina Workflow	**Alcon Vision suite SmartSolutions Smart Cataract Workflow**	**Verion Image Guided System Catalys cOS6.0 software**	**Stellaris Elite Vision EyeTelligence digital platform**	**Topcon Harmony**
• Streamlines pre-operative planning • Deeper insights	• Yields fully integrated and connected practices	• Auto measurements & alignment	• Highly customizable • Reduces risks of missing diagnosis	• Reduces time spent managing patient exam data
• Expensive & difficult to learn	• Complex and difficult to use	• Time consuming to set up	• Limited data integration with diagnostic devices	• Limited integration with non-Topcon devices

Minimally Invasive Techniques

GLAUKOS	Alcon	ZEISS	J&J VISION
iStent inject; iPRIME; iAccess PRESERFLO MicroShunt	**Hydrus; CyPass**	**ReLEx SMILE**	**Catalys Precision Laser System**
• Leader in MIGS technology	• Strong portfolio	• Ongoing investment in new technologies	• Catalys Precision Laser System
• Premium pricing	• Recalls and safety concerns	• Higher price tag	• Regulatory challenges & recalls



iDose TR – Phase III for OHT-Glaucoma

iDose TREX - PreClinical for OHT-Glaucoma

Pipeline

Advanced Visualization & Imaging

ZEISS	Alcon	J&J VISION	TOPCON	GLAUKOS	BAUSCH + LOMB
Rescan 700; AngioPlex; Callisto	ORA; NGENUITY; Verion; LenSx	iDESIGN Refractive Studio	Synergy; 3D OCT-1 Maestro	iTrack catheter Kahook Dual Blade	Victus femtosecond laser system
• Diverse portfolio with relatively superior quality	• Intraoperative measurements • Integrated imaging	• Personalization with diagnostic capabilities	• Ongoing investment in new technologies	• Improved visualization	• Strong portfolio
• Requires specialized training • High costs	• Limited options in terms of microscopes	• Longer eye exam time • High costs	• Limited offerings in femto	• Limited offerings	• Limited offerings in 3D imaging

Next gen diagnostic platform - All-in-one office

Pipeline

Innovative Surgical Tools & Devices

Alcon	ZEISS	BAUSCH + LOMB	J&J VISION	GLAUKOS	TOPCON
Infiniti; Constellation; Argos	Opmi Lumera 700; Artevo 800	MSI digital (collab. with Heidelberg)	Veritas Vision System	iLink; iDetect	DRI OCT Triton Plus Aladdin Biometer EyeTrace system
• Hefty investment	• Quality Optics; Ergonomic design	• High resolution imaging • Integration with other systems	• Innovative surgical microscopy options	• Simplify diagnosis and treatment	• Moderate pricing • Cloud-based solutions
• Premium pricing	• Limited mobility • Limited field of view	• Reliance on operator skills • Specialized training	• Limited offerings	• Possible side effects • Regular follow-up	• Requires extensive training

Next gen phaco vit-ret console

Novel delivery system allowing for smaller incision size

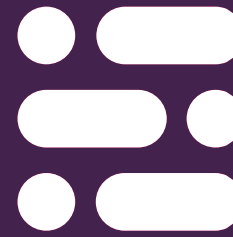
3D Microscope

Next gen surgical Platform - System 202x

iLink Third-Generation

Pipeline

Competitive & Future Outlook



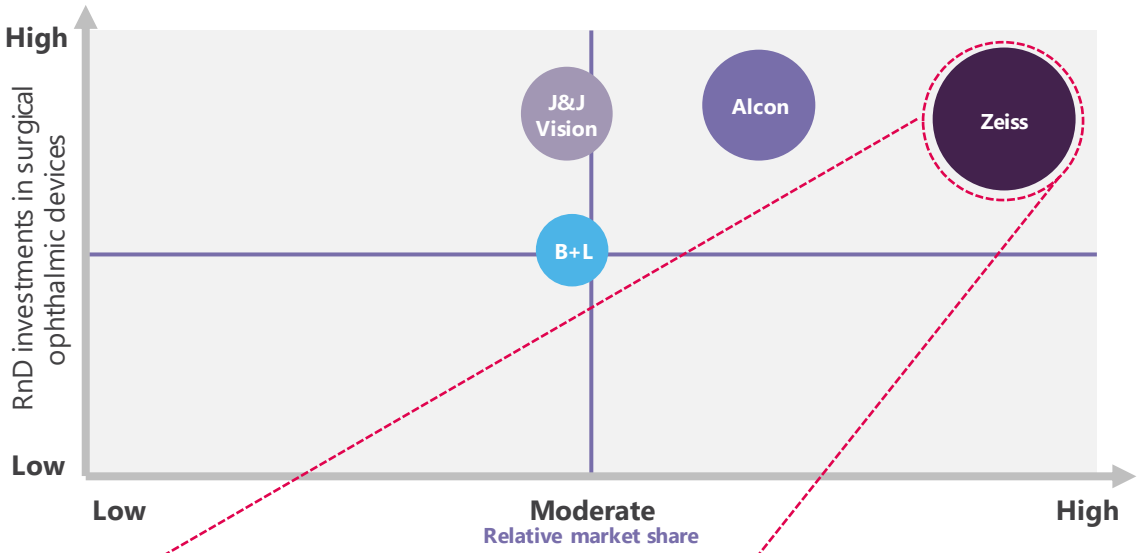
Competitive Outlook

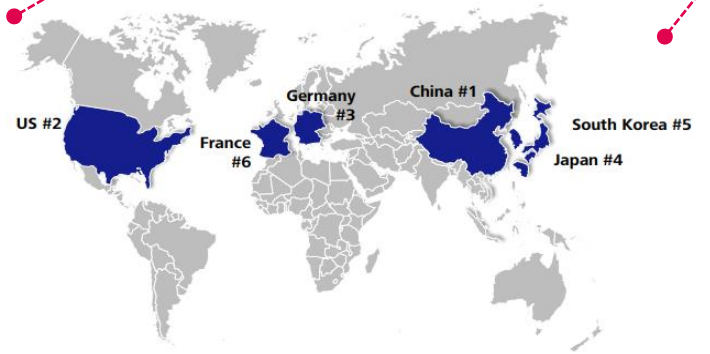
- Carl Zeiss has developed flagship platforms and holds pioneering position in the market. While other players like Alcon & J&J Vision also have their own digital platform in place but not at a flagship level like Zeiss
- The company is actively investing in new technologies to maintain its position

- To integrate its wide range of surgical equipment, Alcon has developed Alcon Vision Suite
- The trend for Alcon is expected to be towards continued investment in these areas, as well as developing workflow solutions and innovative surgical tools

- J&J Surgical Vision has a long way to go to compete with established player like Zeiss in digital ophthalmology space
- Unlike its vision care segment's well-established portfolio, company's surgical vision division has very few options to choose from, although they are premium in nature

- Bausch has a relatively lower market share and R&D investment in ophthalmic surgical technologies compared to other major players
- Post its spin off from Bausch Health, Bausch + Lomb started increasing its R&D investment mainly towards surgical microscopes and eyeTELLIGENCE platform





Compared with other major players, Zeiss has a weaker market position in the US, and has identified the country as a key area for growth. Success here will come from increased adoption of the SMILE laser correction procedure, which currently has a high-single-digit percentage of procedures

Zeiss's top 6 target markets in surgical ophthalmology

Current Trends vs. Future Outlook

	Interconnected Workflow Systems	Minimally Invasive Techniques	Advanced Visualization & Imaging	Innovative Surgical Tools and Devices
Current Trends	Investments towards improving existing software platforms to facilitate better data sharing and communication between devices and teams	There is a growing trend towards the use of micro-incisional and femtosecond laser-assisted techniques, as well as the development of specialized devices for specific surgical procedures	All the major players are looking to develop new imaging and visualization tools, with a focus on improving resolution, accuracy, and ease of use	There is a growing trend towards the development of specialized surgical devices and instruments, with a focus on improving precision, safety, and efficiency
Future Outlook	The focus on interconnected workflow systems is likely to continue, with more emphasis on cloud-based technologies and remote monitoring capabilities, as well as the integration of machine learning and AI to enable predictive analytics and optimize workflows	The trend towards minimally invasive techniques is expected to continue, with more emphasis on the use of robotic systems and AI-powered tools for improved precision and safety. VR and AR technologies are also likely to become more prominent in surgical training & planning	The trend towards more advanced imaging and visualization technologies is likely to continue, with more emphasis on the development of multimodal imaging systems and the integration of AI algorithms for improved accuracy and efficiency	More emphasis on the use of robotics and AI-powered systems for improved precision and safety. The development of new materials and coatings is also likely to become more prominent, particularly in the area of intraocular lenses and other implantable devices

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Thank you!