

MEDICAL DEVICE INDUSTRY

IN MEXICO



GRUPO PRODENSA



About this ebook

The Prodensa E-Book provides context to the growing medical device industry in Mexico and its capabilities for manufacturing operations due to strong talent and a well-positioned market. This E-Book serves as a guide reference to professionals conducting research, project management, labor development, corporate knowledge transfer, and site selection, among others.

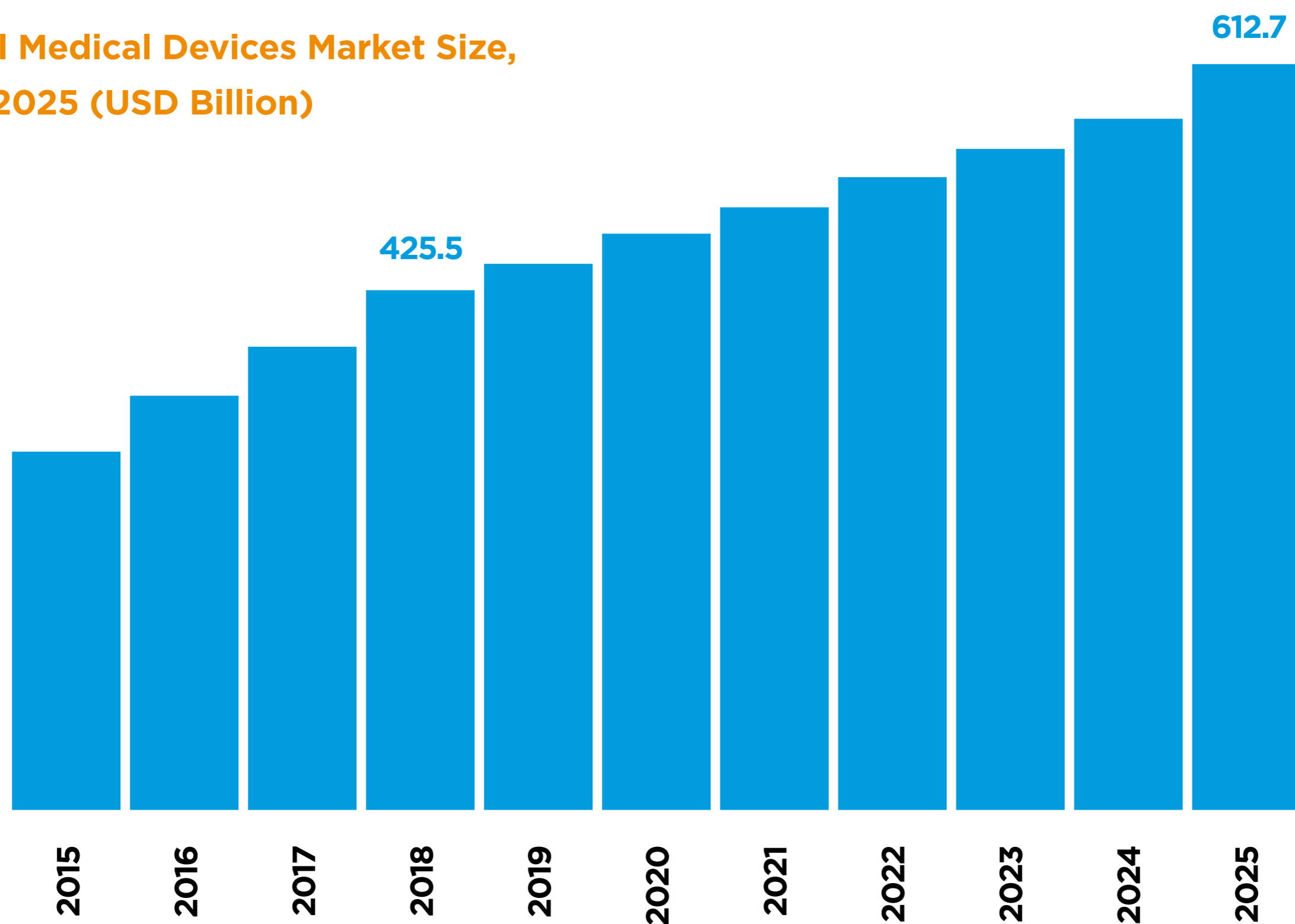




GLOBAL INDUSTRY OVERVIEW

THE MEDICAL DEVICE INDUSTRY IS EXPECTED
TO REACH \$612.7 BILLION DOLLARS BY 2025.

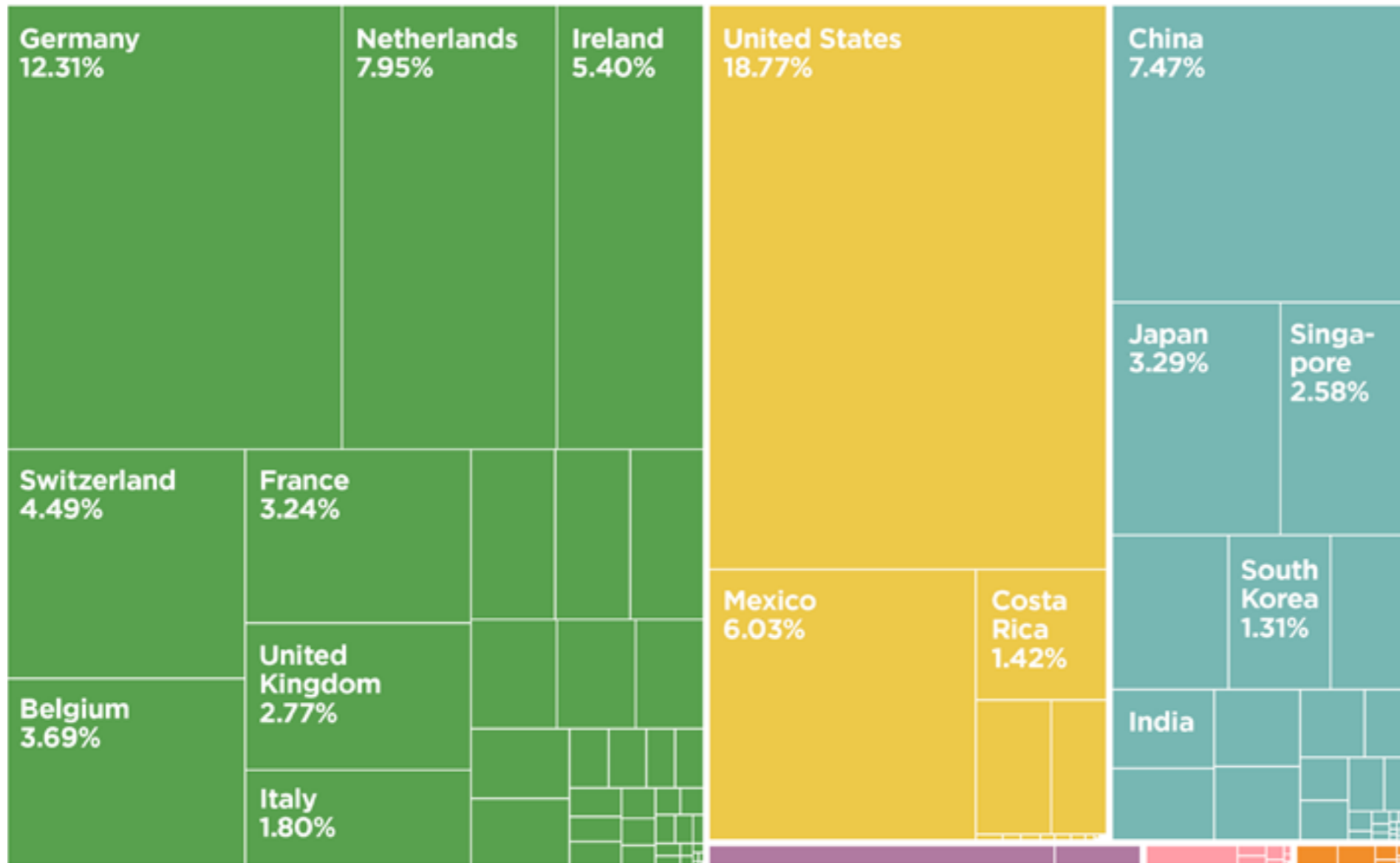
Global Medical Devices Market Size,
2015-2025 (USD Billion)



Source: fortunebusinessinsights.com



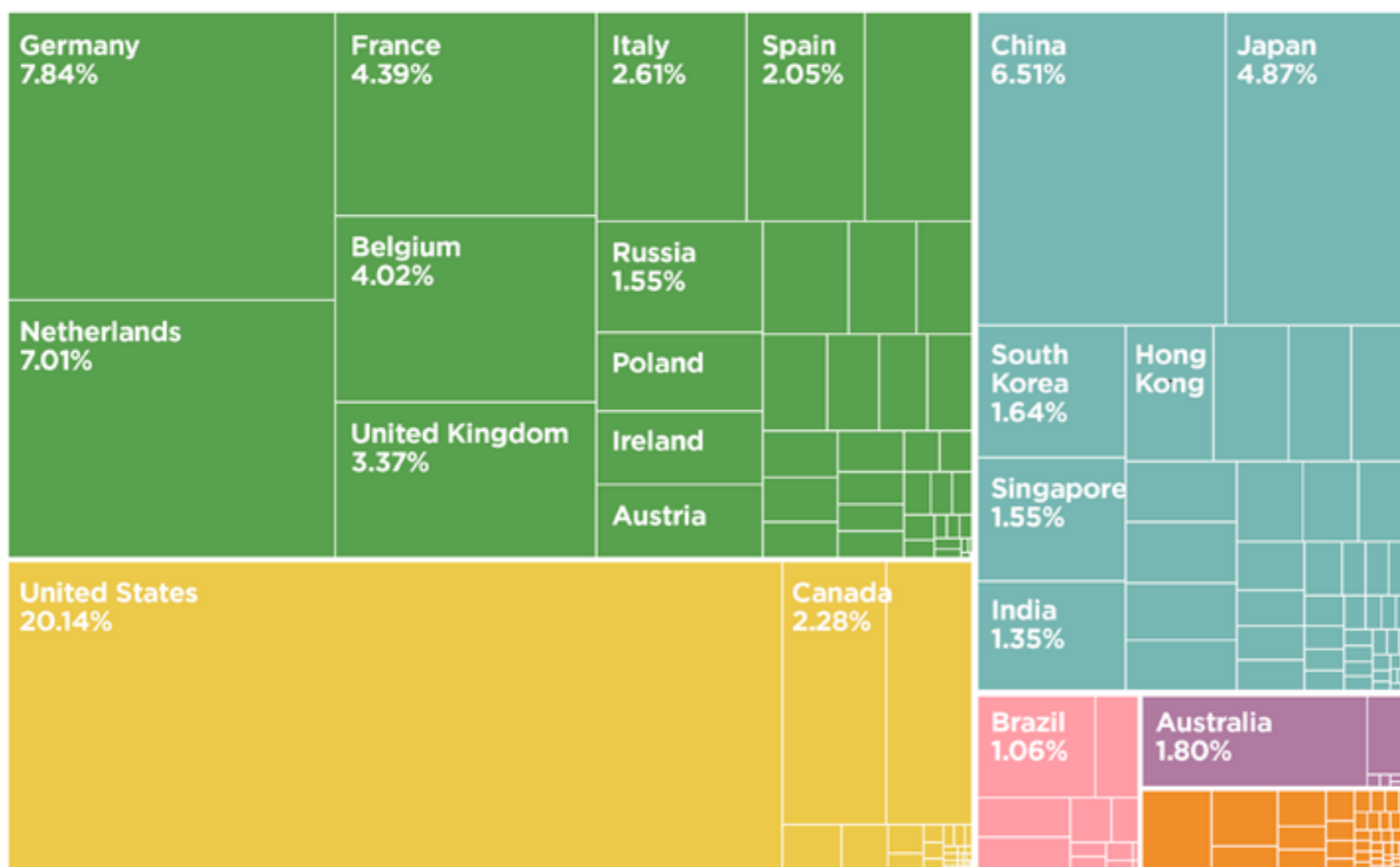
Global Exports Medical Devices, Percent of Total (2019)



Source: OEC.world (2019) considering HTS codes 3005, 3006, 401511, 84192, 9018, 9019, 9020, 9021, 9022, 9033, 9402

- Africa
- North America
- Antartica
- Oceania
- Asia
- South America
- Europe

Global Imports Medical Devices, Percent of Total (2019)



Source: OEC.world (2019) considering HTS codes 3005, 3006, 401511, 84192, 9018, 9019, 9020, 9021, 9022, 9033, 9402



THE TOP 3 APPLICATION SEGMENTS IN THE GLOBAL MEDICAL DEVICES MARKET:



IN-VITRO
DIAGNOSTICS



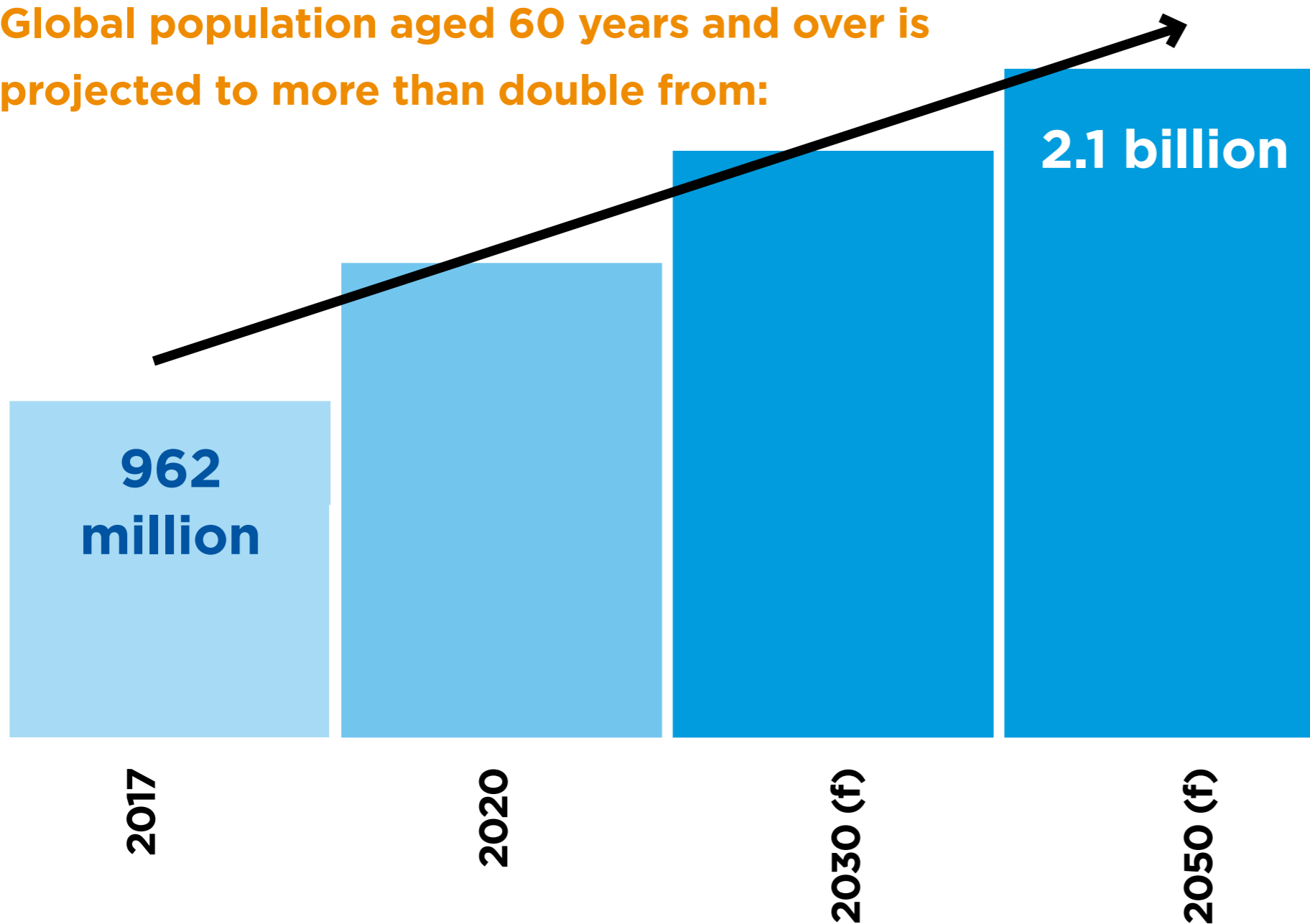
CARDIOVASCULAR
DEVICES



DIAGNOSTIC
IMAGING

THE MEDICAL DEVICE INDUSTRY IS DRIVEN BY THE MARKET, AND THE CULTURES AROUND THE WORLD

Global population aged 60 years and over is projected to more than double from:



And global prevalence of diabetes among adults is projected to increase by over 50% by 2045 in addition to almost 30 million new cancer cases annually by 2040. Other market drivers include higher focus on novel technologies and growing adoption of home care devices.

Sources: idf.org, cancer.gov

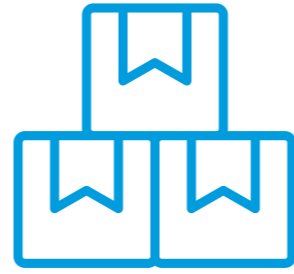




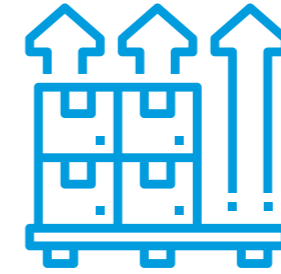
MEXICO HAS EMERGED AS A TOP CONTENDER FOR SUPPLYING THE WORLD WITH THE GROWING NEED OF MEDICAL DEVICES.



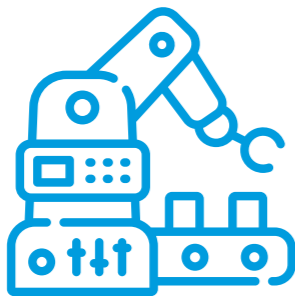
150,000
employees
in the industry



\$14.7 billion
in exports (2020)



Top exporter to the
United States



8th largest global
manufacturer



3rd largest
medical importer



Global leader in FDA,
CE & ISO 13485
certified
manufacturing facilities



70% of facilities
operate in controlled
environments

In fact, many of the top medical device companies call Mexico home...



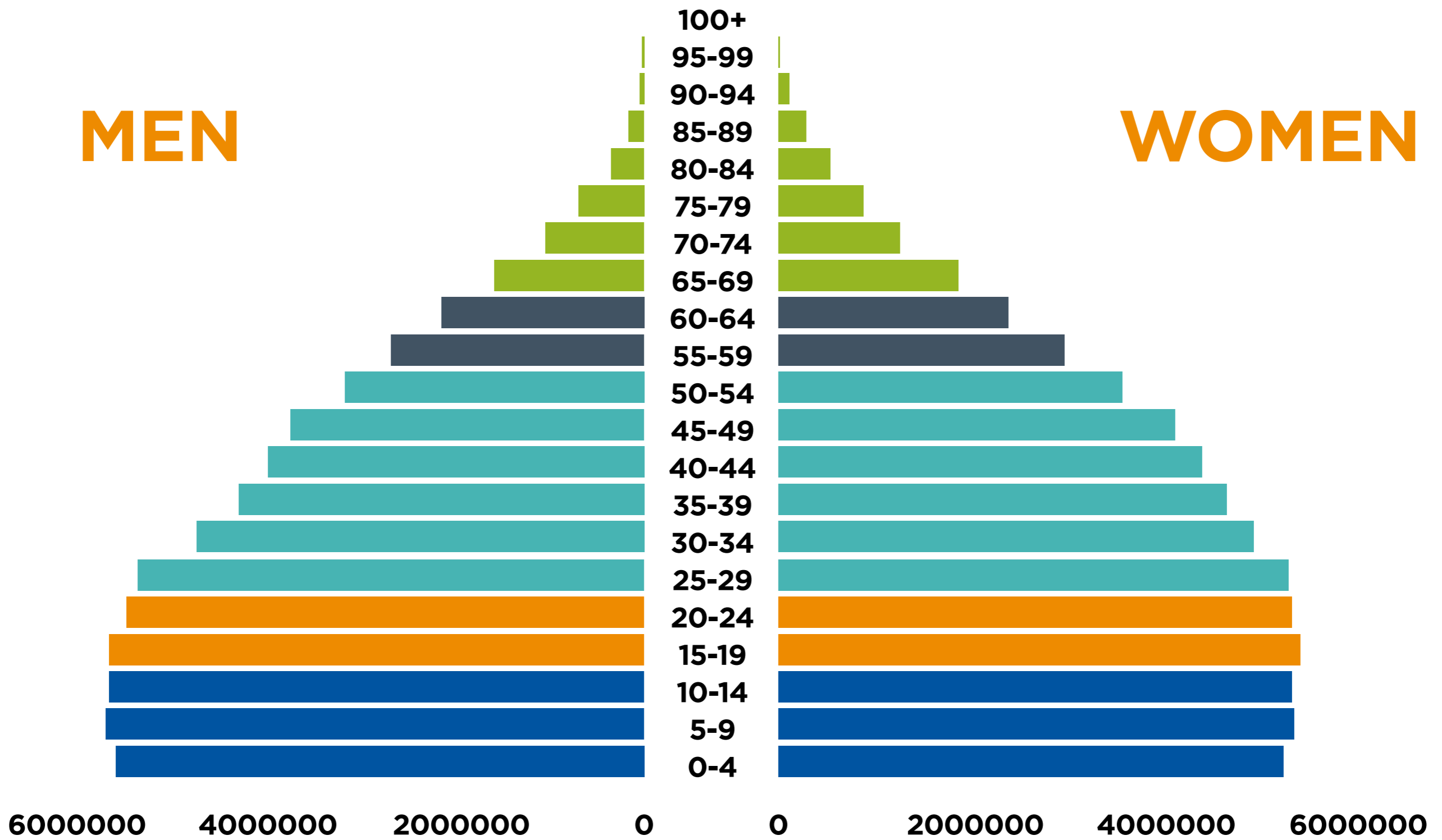
- **MEDLINE**
- **MEDTRONIC**
- **JOHNSON & JOHNSON**
- **PHILIPS**
- **GE MEDICAL SYSTEMS**
- **SIEMENS**
- **SMITHS MEDICAL**
- **CARDINAL HEALTHCARE**
- **BECTON DICKINSON**
- **ABBOT LABORATORIES**
- **STRYKER CORP**

...due to Mexico's favorable trade agreements with major trading partners in almost every region of the world. Several FTA's include specific annexes for medical devices to avoid obstacles to trade, promote trade facilitation, include regulatory cooperation and alignment, and to make the process more efficient and in shorter terms.

Pacific Alliance / Trans-Pacific Partnership Agreement / USMCA



...and Mexico's growing talent pool. In fact, the average age in Mexico is just under 30 years. Careers in the medical device industry are one of the fastest growing sectors in Mexico. They provide competitive salary and benefits for a growing working class.



Source: INEGI

Fully Burdened Cost (USD) per Month	
Production Operator / General Labor	\$ 660.00
Maintenance Technician	\$ 1,202.00
Manufacturing Engineer	\$ 2,978.00

Source: Prodensa proprietary data



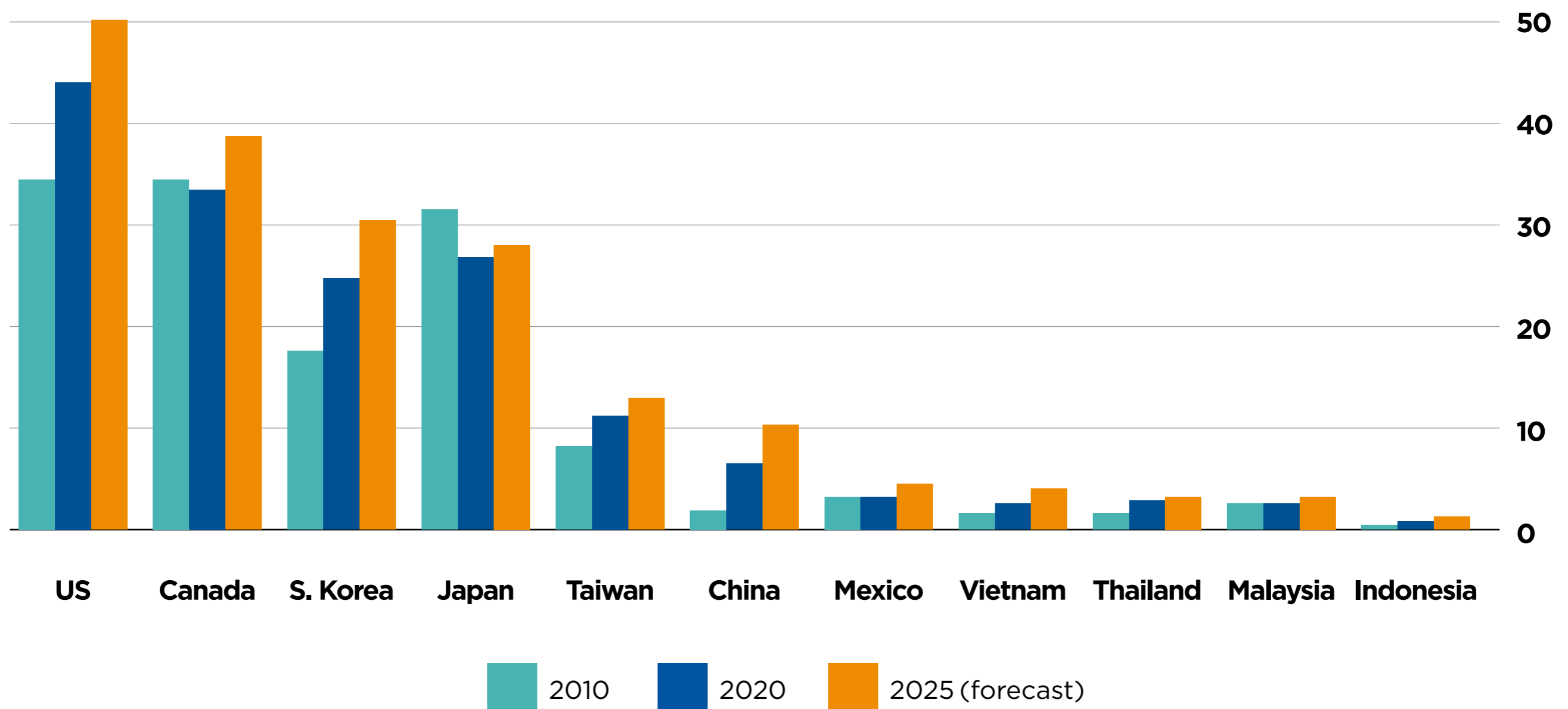


MEXICO'S MEDICAL DEVICE INDUSTRY

Over the past years, many important companies have reshored medical device operations to North America. The reshoring drivers include: proximity to customers, governmental incentives, skilled workforce, infrastructure, corporate image, productivity, among others. Reshored medical device operations **created over 20,000 jobs in 2020 throughout North America.**

Source: reshorenw.org

Mexico's production costs have stayed competitive with those of Asia
(av manufacturing labour cost; US\$/hour)



Source: The Economist Intelligence Unit



THE IMPORTANCE OF MEXICO IN THE GLOBAL AND NORTH AMERICAN CONTEXTS CONTINUES TO INCREASE. IN 2020, THE UNITED STATES IMPORTED \$7.14 MILLION (16%) FROM MEXICO.

US imports of medical equipment and supplies manufactures (NAICS 33911), 2020			
Products	Imports from MX (US\$ Millions)	Imports from MX/global imports	Product complexity
Surgical & medical instruments	4.94	28%	High
Surgical appliances & supplies	1.82	9%	Medium
Dental equipment & supplies	0.02	1%	High
Ophthalmic goods	0.36	7%	High-Medium
Dental laboratories products	0	1%	High
Total imports	7.14	16%	

* The Product Complexity Index indicates the level of know-how and investment required to make the product. The higher the PCI result, the more complex the product.

Source: US Census Bureau and US International Trade Commission

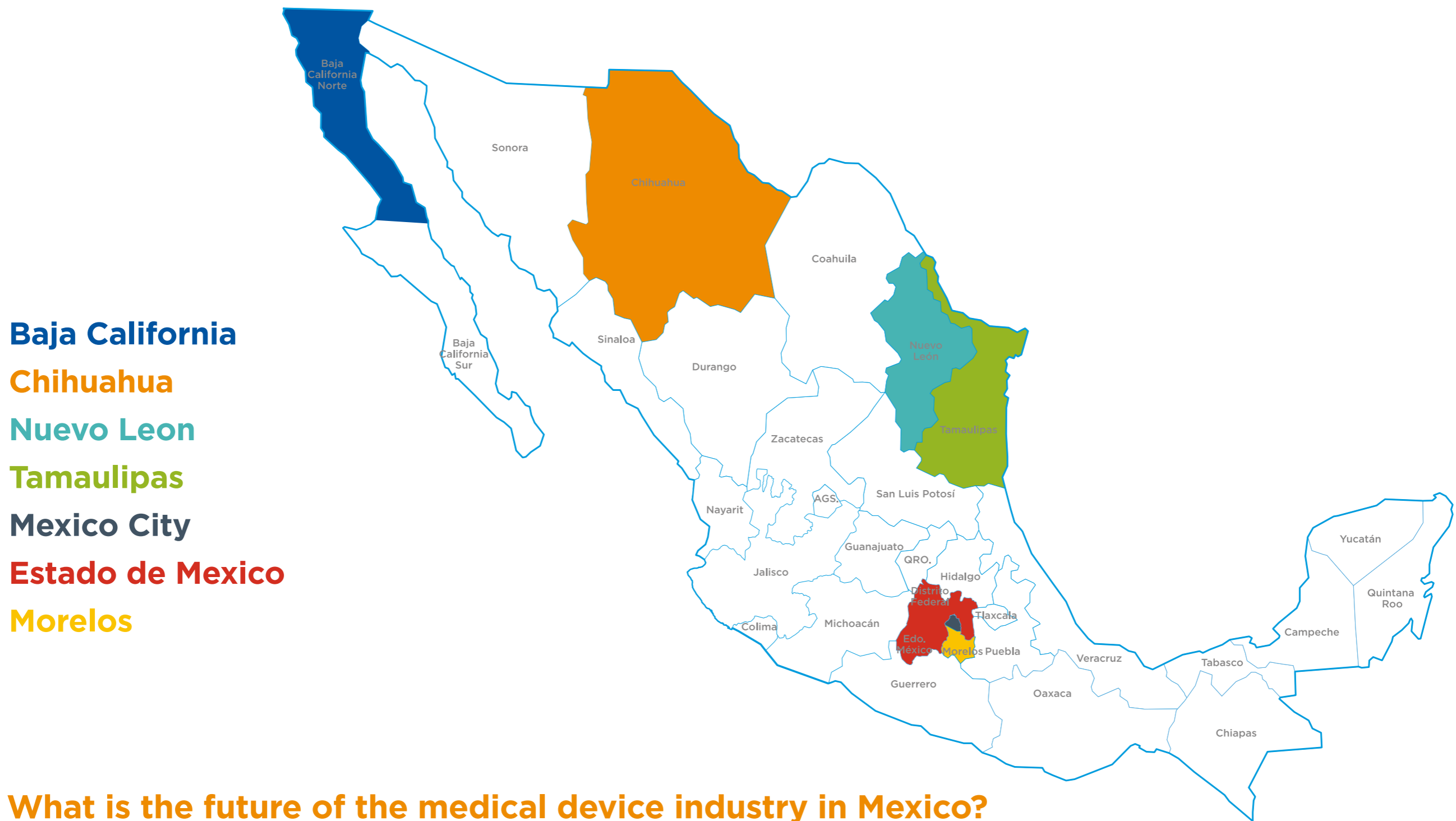
Advantages to manufacturing medical devices in Mexico include a competitive cost of over 20% (KPMG, 2010) to the United States, including close to 4 times the after-tax profit in addition to overall operational efficiencies and more flexibility.





Mexico is prepared to take on the growing need for low-cost medical device manufacturing, with specialized clusters of manufacturing operations. Baja California, specifically Tijuana, has the largest concentration of medical device manufacturing companies in all of North America (including the United States).

Medical Device Clusters in Mexico



What is the future of the medical device industry in Mexico?

Opportunities	Challenges
Sophisticated industry that values innovative, high-quality medical technologies	Regulatory timeframes are one of the biggest obstacles to entering the Mexican market
Advanced yet cost-effective products that deliver strong healthcare outcomes will perform best	COFEPRIS, the regulatory body, offers several registration routes, but submission process is time consuming and requires follow-up
Greatest demand for medical devices in preventative care, diagnostic imaging, dental products, patient aids, orthopedics and prosthetics	Fiercely competitive import market from US manufacturers, which control more than 50% of the Mexican import market



SPOTLIGHT INSIGHTS FOR THE MEDICAL DEVICE MARKET IN MEXICO

The medical device manufacturing sector in Mexico has shown steady growth in the last decade, at a rate of almost 8% (KPMG, AMID). During 2020, the supply chains were disrupted at the global level, which ultimately created opportunities for Mexico.

We see companies in this sector every week looking at options in Mexico because they can find a number of industrial buildings ready for production, with capacity to adapt clean rooms and maintain high quality standards. There is a growing and experienced workforce, and some of the largest manufacturing clusters in Mexico are just a short distance from the United States.

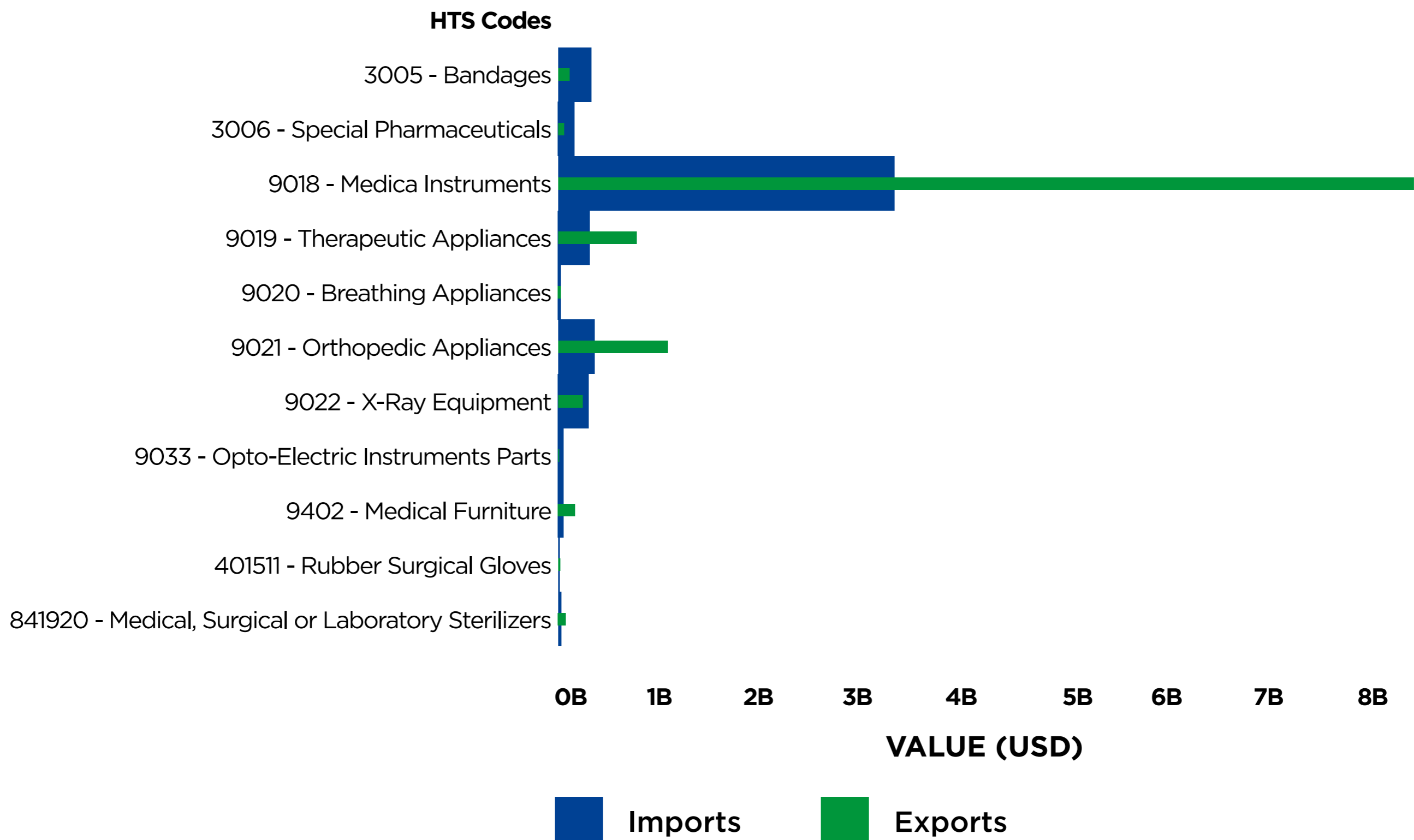
While Mexico continues to grow in exports its medical device sector is more consolidated. It represents an obvious option for companies looking to expand operations into a cost-competitive country while still maintaining proximity to their North American market.

**CARLOS
LOYOLA**
Business
Development
Director



MANY OPPORTUNITIES EXIST IN MEXICO THAT POINT TO CONTINUED GROWTH IN THE MEDICAL DEVICE SECTOR.

As the top exporter of medical devices in Latin America...



...the geographical location of Mexico allows companies to respond to global demands and take advantage of shifting market needs by manufacturing close to the top global market, the United States.



Medical Device Products with the Highest Growth During the Pandemic		
High Growth 100%+	Growth 50-100%	Growth 5-50%
Defibrillators	Blood Analyzers	Suction Equipment
Patient Monitoring	Medical Diagnostic Equipment	Electromedical Equipment
Arterial Implants	Injection Equipment	Medical Probes
Oximeters	Medical Instruments	Electrosurgical Equipment
Electrocardiography	Ophthalmology Equipment	Cannula & Valves
Infusion Pumps	Surgical Points	Disposable Hemodialysis Lines
Energy Transducers	Medical Balloons	Modular Circuits
Tweezers	Medical Stimulators	Ultrasound Machines
	Blood Pressure Measurement Equipment	Angiography
	Surgical Equipment	Peritoneal Dialysis
	Medical Scissors	Sample Kits
	Suture Articles & Equipment	
	Dialysis & Hemodialysis Equipment	
	Drainage Systems	

Source: CANIFARMA and Global Health Intelligence (GHI), 2021



Mexico's domestic sector represents a great opportunity for foreign and domestic investors in the medical device sector. Expenditures of medical services are primarily consolidated in a public health system.



Public Health
Institutions



Private Health
Institutions

Source: trade.gov

Total healthcare expenditure, including medical devices,
account for **5.6% of Mexico's GDP, or US \$71B.**

Source: INEGI, 2019

And Mexico continues to import a large quantity of required medical devices, leaving opportunities for investment in domestic production.



Domestic Medical
Device Consumption



Mexican Imports
of Medical Devices

Sources: AMID, 2020 & SIAVI, 2020

Strategies being implemented to increase domestic consumption:

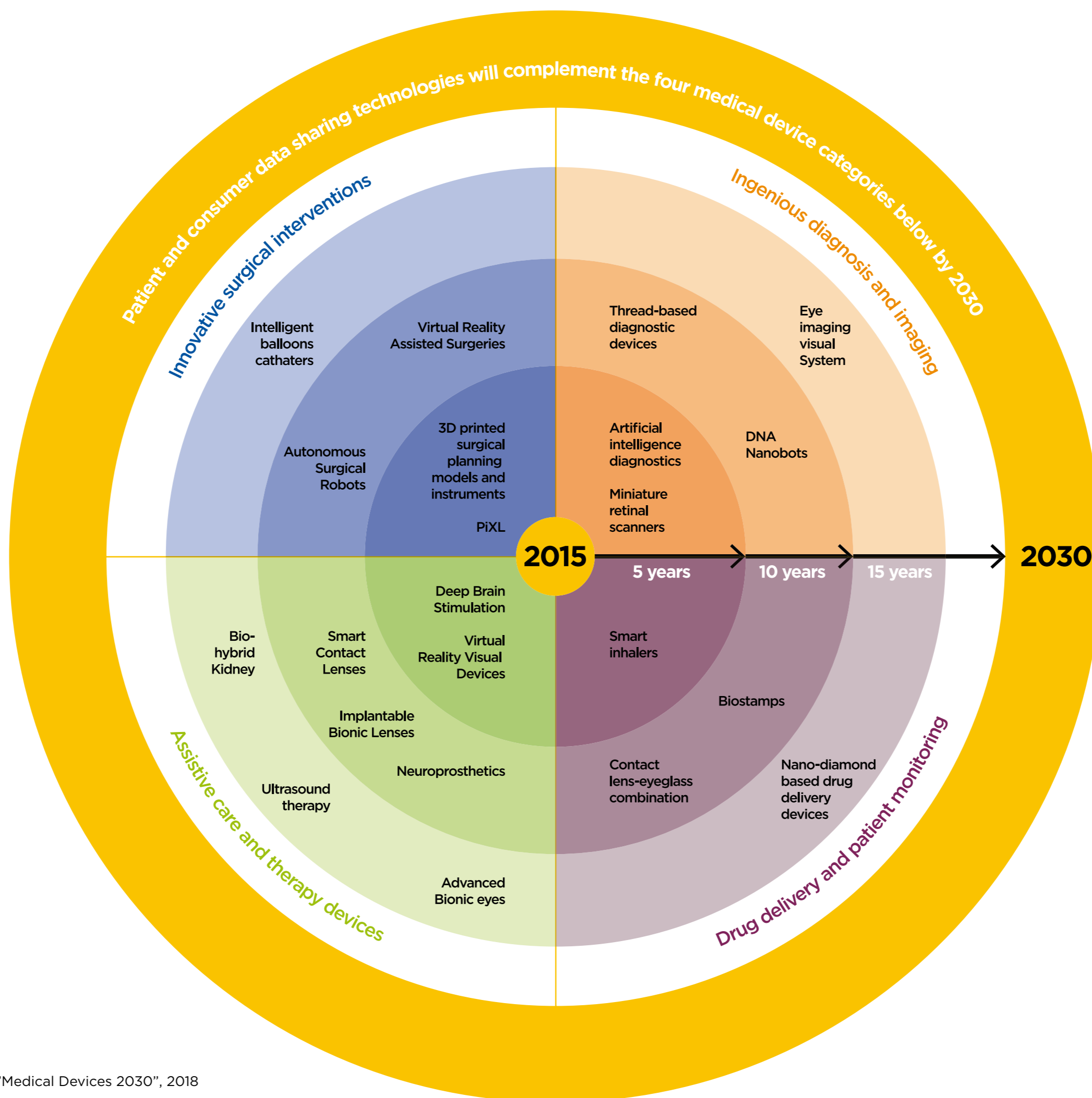
- Endorse the commitment to fight corruption
- Regulate processes at hand with the Federal Commission for the Protection Against Health Risks
- Work closely on training on medical devices with the Mexican Social Security Institute of Security and Social Services
- Establish schemes for the purchase of medical devices that benefit the patient



Mexico represents a great potential for medical device production for export as well as domestic consumption. With rising manufacturing costs in other major global production markets, Mexico is emerging as a sustainable and logical destination to serve the top import markets of the world.

The future of medical devices is technology, and Mexico is poised to provide the talent to help companies achieve innovation.

Medical Devices Technology Roadmap to 2030



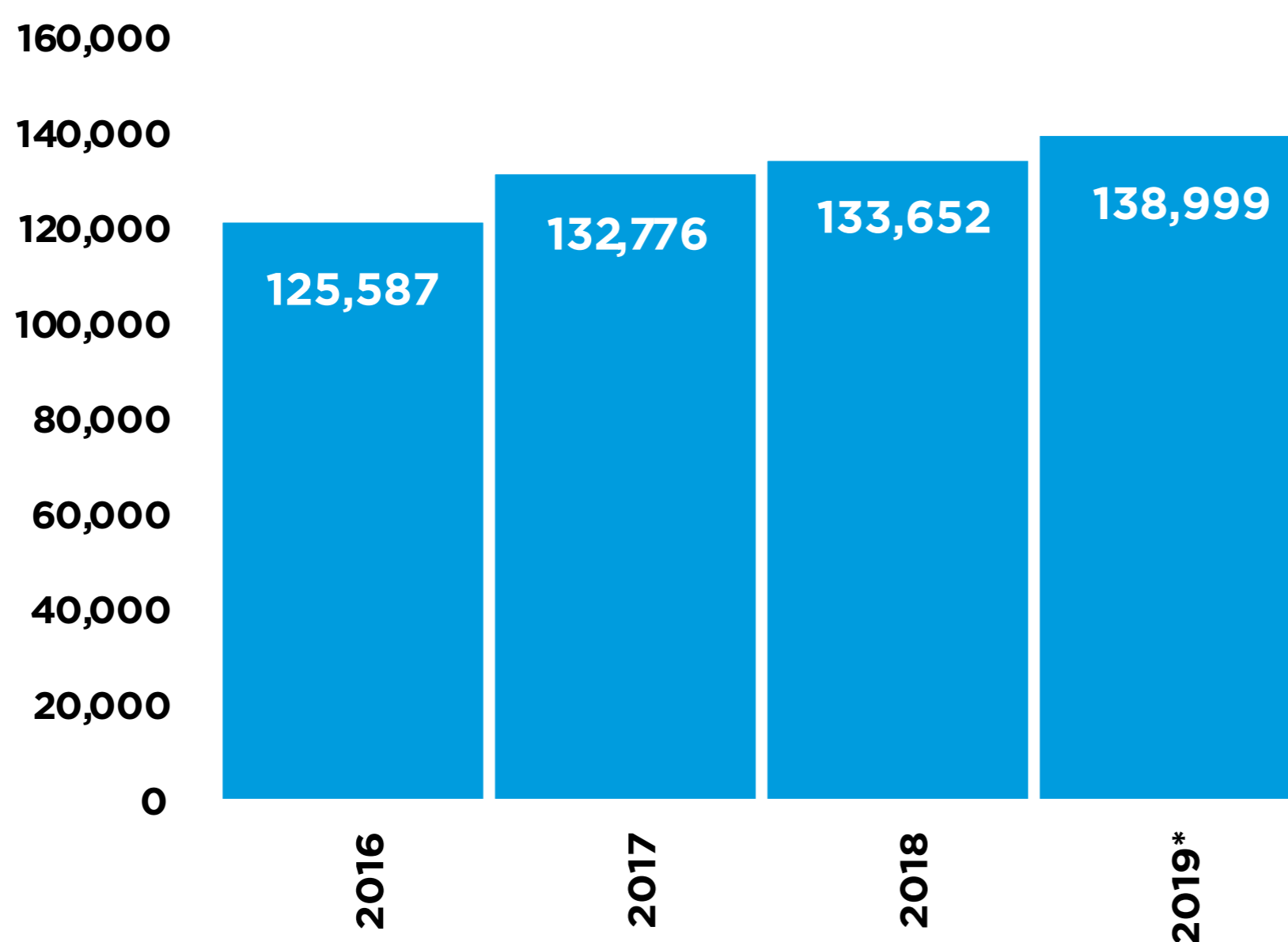
Sources: KPMG "Medical Devices 2030", 2018



MEDICAL DEVICE TALENT IN MEXICO

MEXICO PROVIDES A GREAT SOURCE OF TALENT FOR NEW COMPANIES. THE NUMBER OF EMPLOYEES IN THE MEDICAL EQUIPMENT MANUFACTURING INDUSTRY HAS BEEN GROWING FOR THE PAST YEARS.

Number of employees in the medical equipment manufacturing industry in Mexico from 2013 to 2019

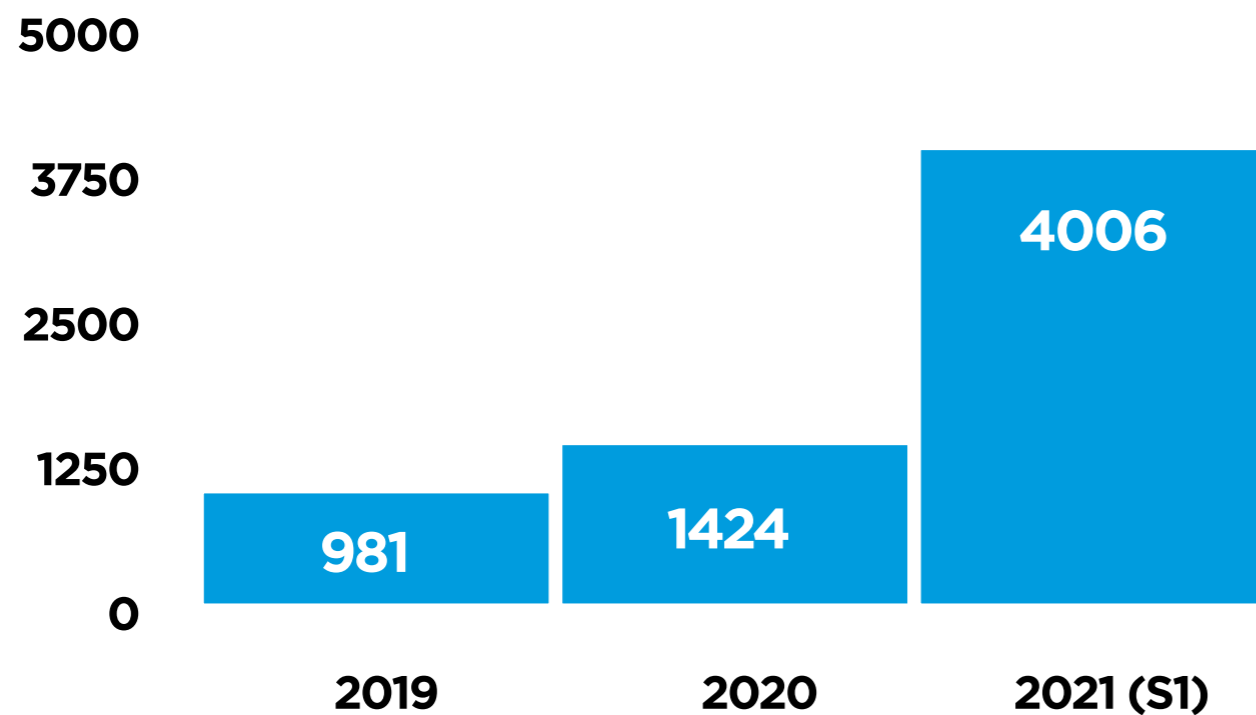


In addition to continual sector growth, the importance of the Mexican medical device industry helped supply the world with life-saving products during the COVID-19 pandemic. According to the Mexican Association of Innovative Medical Devices (AMID) pandemic-related medical device output increased 5-20 times to meet the global demand, including face masks, ventilators, and Personal Protection Equipment.

Note(s): Mexico; 2016 to 2019 non-electronic equipment and disposable material for medical, dental and laboratory use; also includes ophthalmic equipment
Source: INEGI



In fact, an important company producing ventilators and face masks for the global market has experienced a 181% growth rate in hirings since 2020, just in the first semester of 2021 alone.

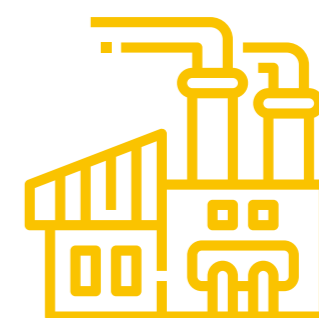


Universities are adapting with new career paths in biomedical engineering, prosthetics manufacturing, chemical pharmaceutical biology, among others. In the 2019-2020 academic year, over 140,000 students graduated from careers related to medical device manufacturing:



120,000

MANUFACTURING &
ENGINEERING



8,000

AUXILARY HEALTH
DISCIPLINES



12,000

BIOLOGY &
ENVIRONMENTAL SCIENCE

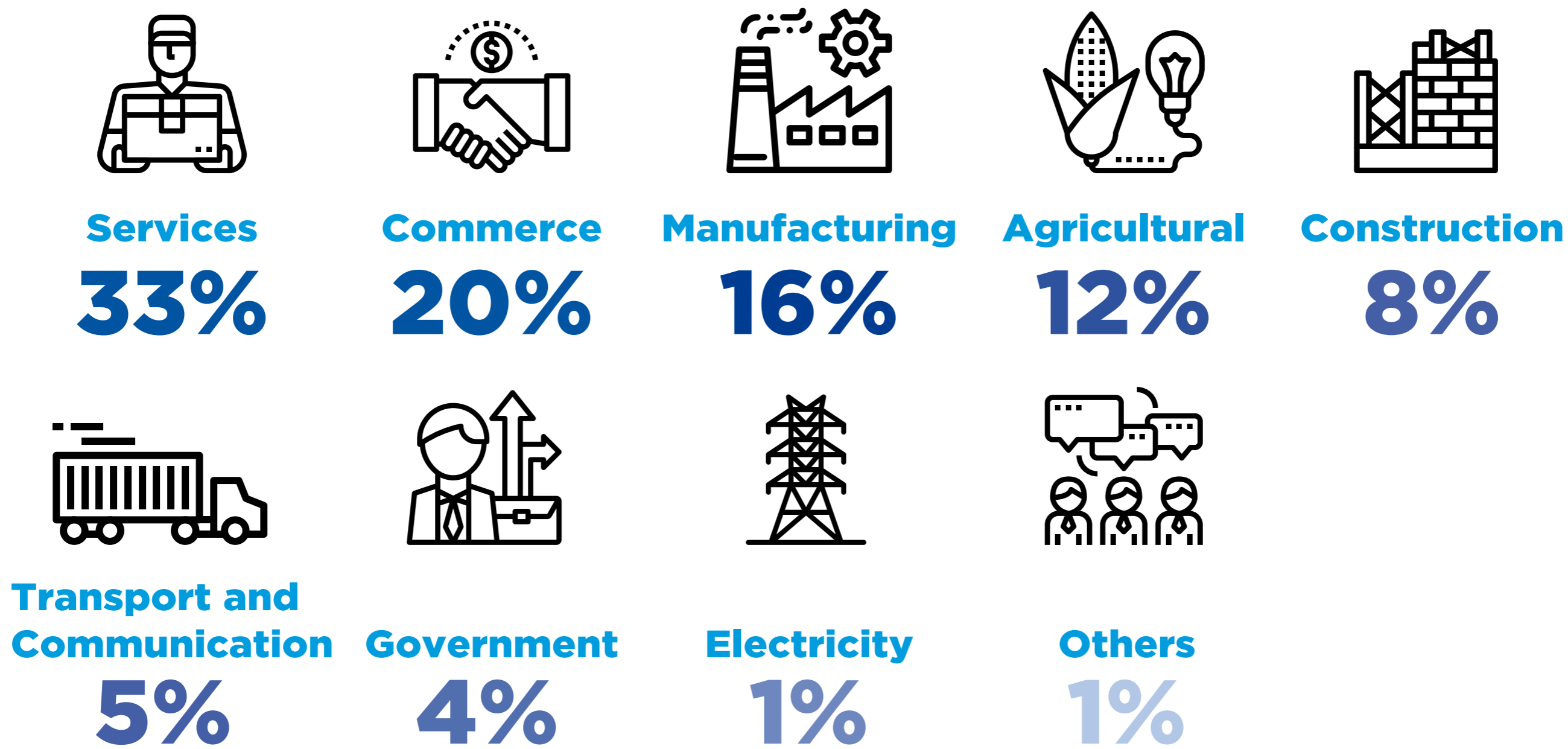


Source: ANUIES (Asociación Nacional de Universidades e Instituciones de Educación Superior)

In fact, numerous patents have been obtained through the many R&D facilities in Mexico, from students, faculty and professional collaborations.



About 16% of Mexico's Economically Active Population are employed in manufacturing. The industry has helped to grow a stronger middle class by providing steady growth and good benefits.



Source: INEGI

Ciudad Juarez and Tijuana are the top cities in which qualified staff with experience in the medical devices industry can be found. The salaries of some of the most demanded positions in the industry are shown below:



Fully Burdened Cost (USD)			
	USD/ HOUR	USD/ MONTH	USD/ YEAR
Production Operator / General Labor	\$ 3.21	\$ 660	\$ 7,920
Specialized Operator / Skilled Labor	\$ 4.17	\$ 858	\$ 10,296
Maintenance Technician	\$ 5.84	\$ 1,202	\$ 14,424
Production Supervisor	\$ 12.23	\$ 2,515	\$ 30,180
Manufacturing Engineer	\$ 14.48	\$ 2,978	\$ 35,736
Quality Engineer	\$ 13.93	\$ 2,865	\$ 34,380
Master Scheduler	\$ 13.91	\$ 2,862	\$ 34,344

Source: Prodensa proprietary data



SPOTLIGHT BECOMING AN EMPLOYER OF CHOICE IN MEXICO - MEDTRONIC

Medtronic employs around 15,000 people in Mexico throughout their 5 facilities. To attract and retain talent, the key competencies for every employee- current or future- have been redefined. Leadership Expectations, the characteristics and attitudes that are valued in their talent which are beyond the technical skills or prior experience required for a particular position.

**EMMANUEL
SAUCEDO**
Northeast
HR Manager

SHAPE - ENGAGE - INNOVATE - ACHIEVE

Medtronic is committed to hiring young talent, articulated by their 18-month scholarship program for recent graduates working full-time with them. Additionally, 40% of vacancies are filled internally, and 15% through the Referral Program.

Understanding and adapting to the Mexican labor culture by striving to be an Employer of Choice has proven very successful for Medtronic, proven by their continued growth in a highly competitive market.



INSTITUTIONAL AFFAIRS IN MEXICO

THERE ARE CHALLENGES TO DOING BUSINESS IN MEXICO, SOME ONGOING AND OTHER NEW AND UNIQUE TO THE CURRENT SOCIO ECONOMIC ENVIRONMENT

Infrastructure

Political
landscape

Rule of law

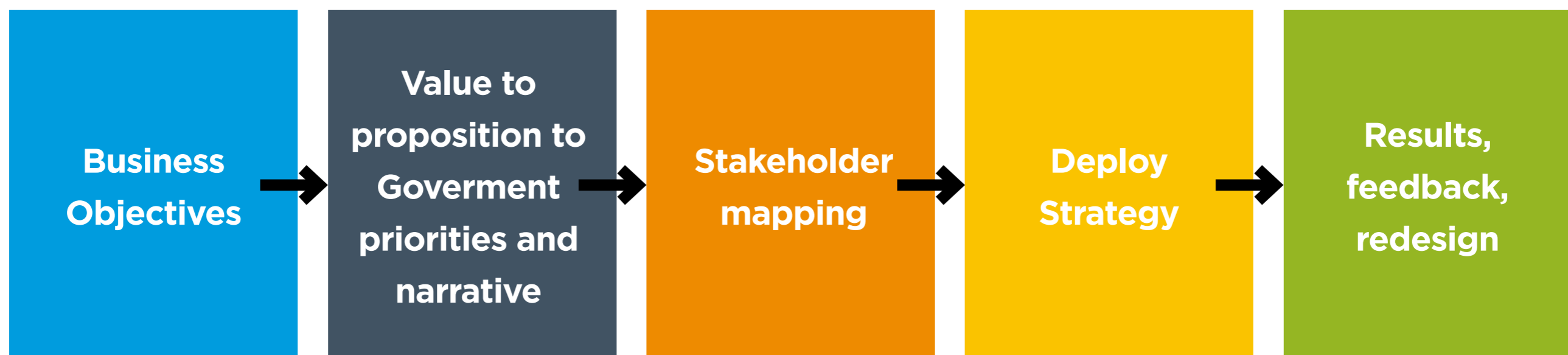
Compliance

Community
engagement





After 2018, the political landscape changed in Mexico in the way companies interact with the current administration. The key is to link business objectives to President AMLO's vision and design a value proposition that can then be deployed directly and indirectly.



Relevant considerations:

- The traditional lobbyist is seen as part of the system that has put private sector interest over Mexico's
- Business is conducted in Spanish
- New bureaucracy is on a learning curve in regards to technical knowledge
- Indirect is more efficient than direct messaging to start interest on a particular topic
- Local is as relevant as federal; not everything happens in Mexico City
- Support on the implementation of USMCA is key for AMLO and his relevant team
- Companies that help on "social responsibility" and on the priorities of the government will be heard
- Compliance has become one of the key targets for the government, and also a great tool for companies that work on it
- Using key U.S. allies to support our case, directly and indirectly, is also key for a successful strategy



SPOTLIGHT - SOCIAL RESPONSIBILITY PROGRAMS IN MEXICO

It's prime time for companies to ramp up their focus on social responsibility. There is a growing need for companies to create and maintain a long-term relationship with the community through Social Responsibility Programs. Social Corporate Responsibility (SCR), in simple terms, means a business's obligation to pursue achievable and good long-term goals for its people in a community and the world at large.

SCR can improve the customer's perception of the company's brand but also a commitment to the community and other social issues that have a big effect in society. It is also a sign of accountability to investors, as those businesses that are socially responsible appear more attractive. At the same time, it is a key consideration for positive institutional relations in the current political administration.

Not all SCR issues have to be in the area in which the business is developed. Some examples can also focus on government priorities in areas such as education, migration and environmental sustainability.

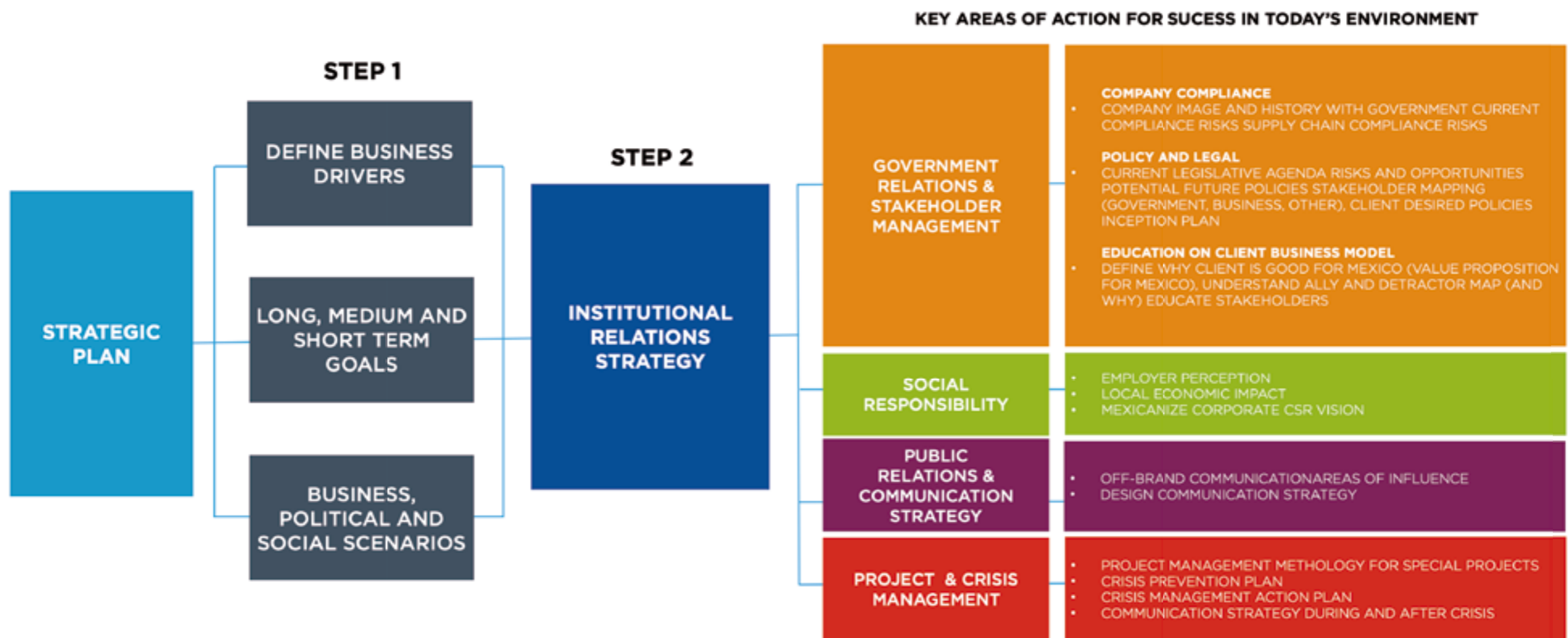
**MONICA
LUGO**
Institutional
Relations
Director



**ISABEL
CLAVIJO**
VP of
Institutional
Relations



CORPORATIONS IN MEXICO SHOULD SEEK A SUSTAINABLE FUTURE IN AN EVER-CHANGING AND GROWING MARKET.



SUPPORTED ON

MANAGEMENT SYSTEM
(TEAM, PROGRESS, REPORTING, COMMUNICATIONS, ACCOUNTABILITY, RESULTS)





Prodensa is a Mexican advisory and project management firm with 35 years of experience supporting companies in Mexico – from strategic advisory and startup support of new operations to ongoing compliance, talent development and business continuity consulting

Over 1,000 international corporations have trusted their Mexican operations to our local experts.

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