A composite image featuring a green-tinted F-35 fighter jet in the center, with a pilot's profile in a blue-tinted helmet on the right. The background is a green circuit board pattern.

01/01/2022

Creation Technologies Overview

creation
TECHNOLOGIES



Creation Technologies Strategy

Aerospace/Defense



Medical Devices



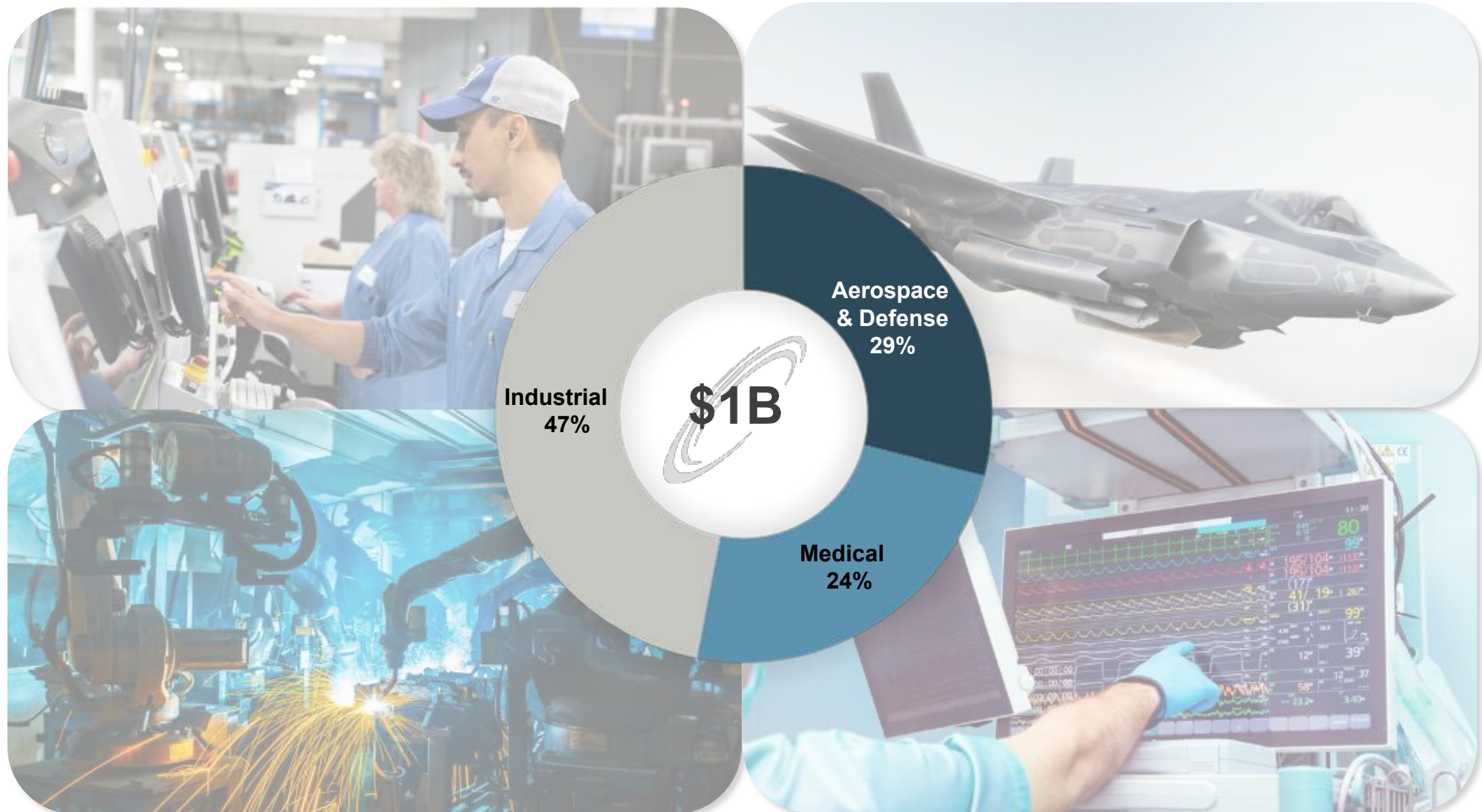
Tech Industrial



MEDIUM VOLUME / HIGH RELIABILITY

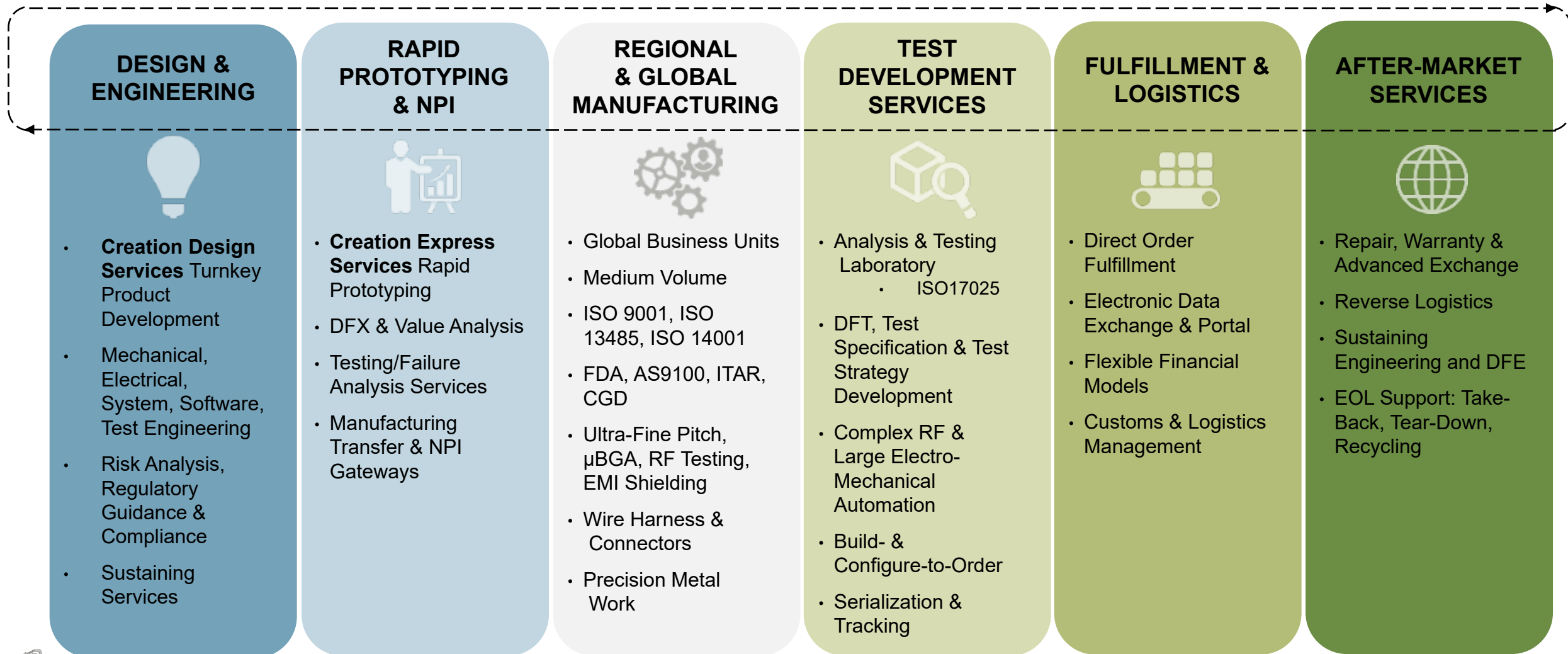
- 14 Manufacturing Locations
- Customer Focused Teams
- 4,400 Employees
- End-to-End Solutions

Creation Revenue by Industry



Responsive Solutions for your Entire Product Lifecycle

24/7 VISIBILITY WITH CREATION VISION



Global Solutions and Teams Committed to your Success

ALBUQUERQUE • BOISE • BOSTON • CHANGZHOU • DALLAS • DENVER • HERMOSILLO • MEXICALI

24/7 Access In
Vision Customer
Portal

Customer-
focused Systems
and Business
Model

Lean Thinking &
Entrepreneurial
Culture

Proven
Excellence Since
1991



14 Manufacturing
Locations /
30+ SMT Lines

2 Design Centers

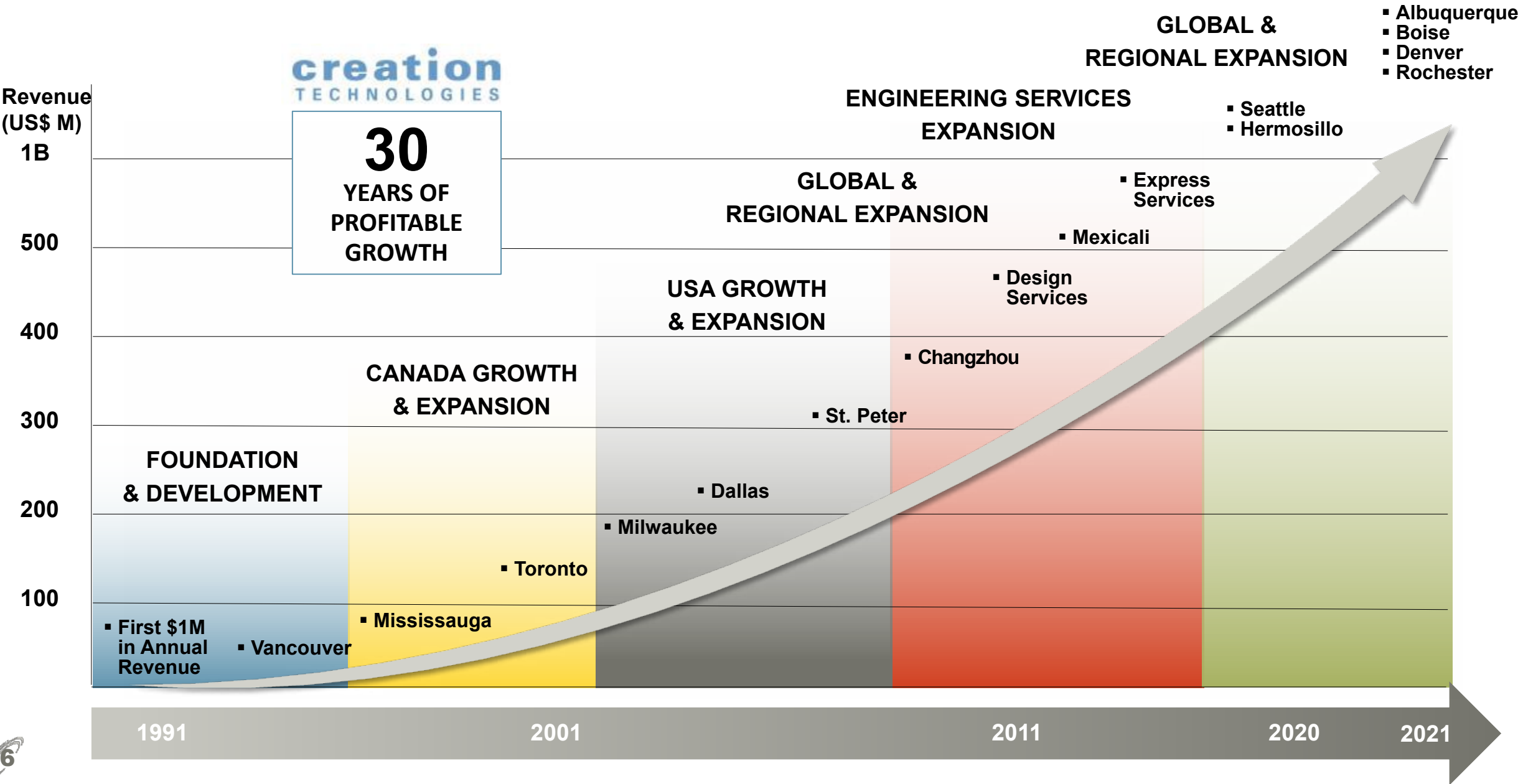
1 Rapid
Prototyping Center

4,400 People In
Engineering, Supply
Chain, Operations

200+ Leading
OEMs

MILWAUKEE • MISSISSAUGA • ROCHESTER • SEATTLE • ST PETER • TORONTO • VANCOUVER

Ongoing Investment to Support Customer Growth



Our Customer-Focused Teams

PROGRAM MANAGER

- Activity Direction
- Order Management and On Time Delivery
- Achievement of Metrics

Planner

- Supply and Demand
- Plan for Every Part
- Inventory Management

Buyer

- Tactical Procurement
- Push/Pull/Cancel
- Setup and Maintenance of Part Attributes

CFT LEADER

- Team Leader
- Big Picture
- Strategy & Improvement
- Customer Satisfaction

Manufacturing Engineer

- NPI and Pilot Production
- Sustaining Engineering
- ECO Management

Quality Engineering

- Product Quality Partnership
- Quality System Effectiveness
- Supplier Quality Management

Team Leader & Manufacturing Team

- Assembly
- Productivity Improvements
- Executing to Plan



Manufacturing Floor



OEMS Face Complex Business Drivers

GLOBAL TRENDS

**RIISING CUSTOMER
EXPECTATIONS**

**RAPID SHIFTS IN
TECHNOLOGY**

**CHANGES IN
GLOBALIZATION**

M2M & IOT

CURRENT ENVIRONMENT

Supply chain scarcity &
volatility

Labor shortages

Unreliable global logistics

Inflation pressures

CREATION RESPONSE

Customer intimacy

Tailored supply chain
strategies

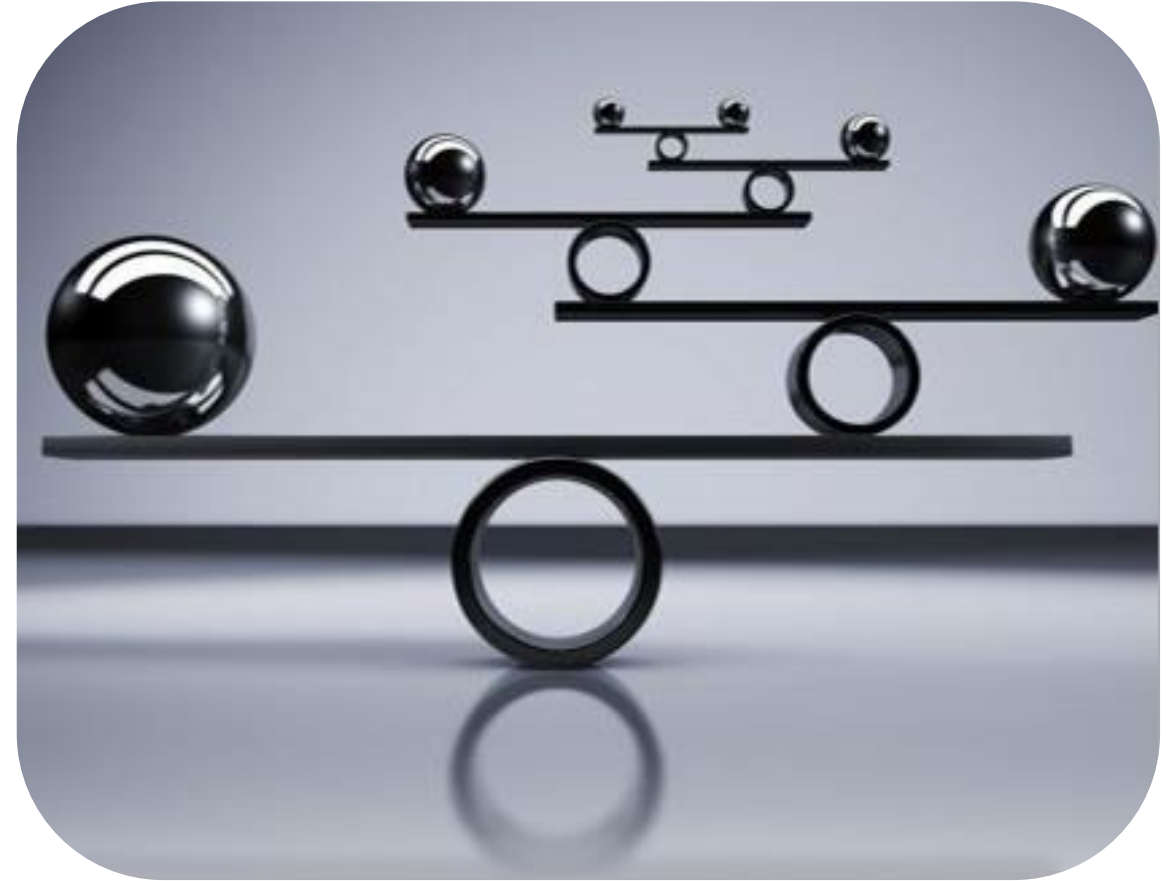
Utilizing global facility
footprint

Longer term planning horizon

Navigating the post pandemic Supply Chain

CUSTOMER SPECIFIC PROGRAMS:

- Supply Chain Risk Analysis
- Alternate Sourcing Recommendations (VAVE)
- Extended PO Coverage Beyond Lead Times
- Safety Stock Programs
- Inclusion on Supplier Strategic Programs (e.g. Microchip)
- Executive Level Engagements within the Supply Base
- Allocation Discussions



Delivering Results to our Customers



Honored by our customers and **CIRCUITS ASSEMBLY** for the 7th consecutive year!

Our Core Values



Certifications, Registrations & Regulatory Agencies









Controlled Goods Directorate (CGD)



Japan's Pharmaceutical Affairs Law (PAL)



Aerospace & Defense

creation
TECHNOLOGIES



Medical


creation
TECHNOLOGIES



Tech Industrials

creation
TECHNOLOGIES

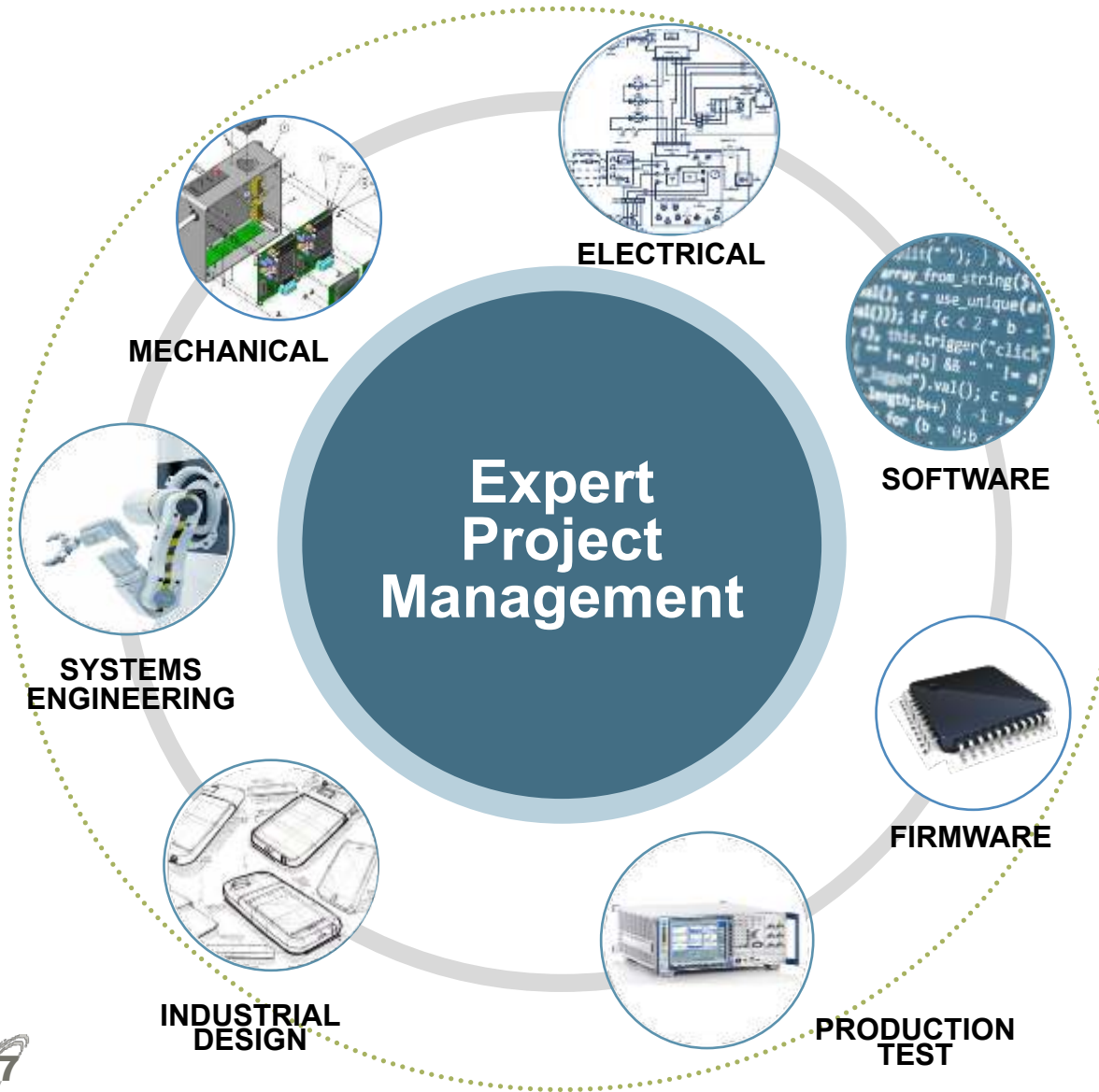




Solutions & Capabilities

creation
TECHNOLOGIES

Product Development and Sustaining Engineering



COMPLETE PRODUCT DEVELOPMENT CAPABILITIES

DESIGN
WITH A
MANUFACTURING MINDSET

New Product Introduction

CONCEPT / DESIGN VERIFICATION

- Dedicated NPI Product Manager
- DFX Analysis
- Best-in-Class DFM Tools (ex. Valor)
- Rapid Prototyping
- Design Services
- Test Development
- HALT – Highly Accelerated Life Testing

PRE-PRODUCTION

- Secondary DFX Analysis
- Data Verification
- Documentation Development
- Production Readiness
- Qualification Builds
- Materials Procurement Analysis

PRODUCTION / MAINTENANCE

- Continuous Improvement
- Value Engineering
- ECO Management
- Warranty / Repair Analysis
- Upgrades & Service

WE HAVE SUCCESSFULLY LAUNCHED MORE THAN 5,000 NEW PRODUCTS IN THE PAST 3 YEARS!

Creation Express Services – Rapid Prototyping

**2-3 DAY
QUOTE TURN**

**PCB FABS IN
3, 5 OR 10 DAYS**

**BUILD IN
<= 5 DAYS TURN**

- Quick-Turn Consignment, Turnkey or Hybrid Materials Management
- Dedicated SMT Lines Optimized for Prototyping, Flying Probe, AOI & X-ray Available
- Seamless Collaboration & Manufacturing Transfer to your Business Unit of Choice
- Ability to Produce Quickly with Minimal Documentation
- Extreme Flexibility with Late Design & Engineering Changes
- Design for Manufacturing (DFM) and other DFX Reviews

EXPRESS SERVICES CAPABILITIES

- SMT Optimized for Prototyping: My-Data MY100, MY300
- Multiple Package Types & Sizes to 0201s
- Processing of Cut Tape with Short Leaders (<5-10 Pockets)
- Screen Printing: Ekra E5 & Elite E-6920
- SRT BGA Rework
- Fixture Design & Development
- Press Tooling, Alignment Jigs, Oven/Wave Pallets
- Documentation Development & System Maintenance
- Design for Manufacturing Review
- SMT & Manual Assembly Teams

Customer-centric Supply Chain

EXECUTION

CUSTOMER-FOCUSED TEAMS

- Focused Implementation of Customer Demand
- Minimized Inventory Exposure & Risk
- Responsive, Agile, Adaptive

Procurement Specialists Materials Specialists Local Engineering

CUSTOMER PROCUREMENT

BUSINESS UNIT SUPPLY CHAIN

- Customer & Local Supplier Relationships
- Materials Management to Support Customer Demand

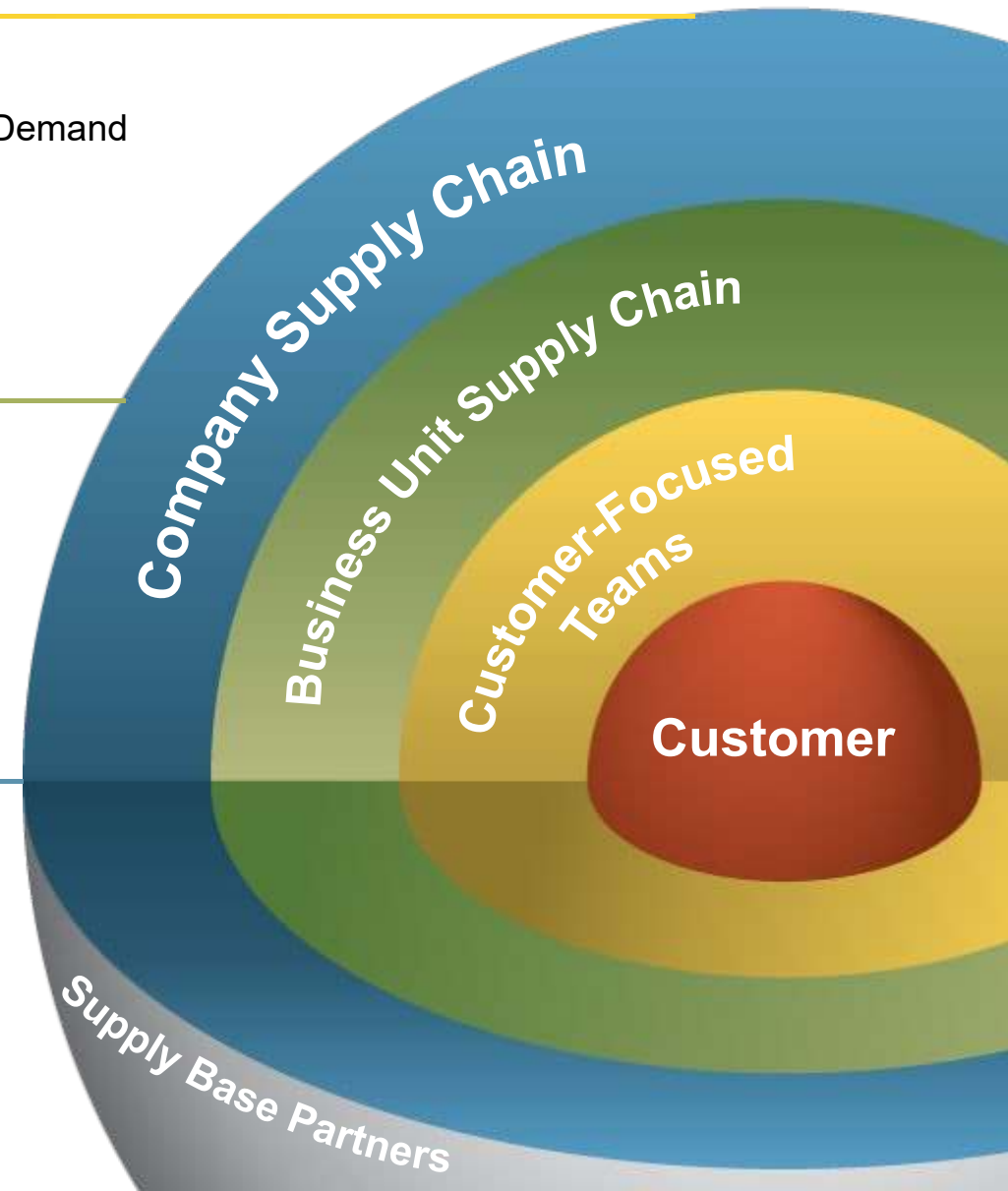
Supply Chain Leader Shipping / Receiving

STRATEGY & SOURCING

COMPANY SUPPLY CHAIN

- Supply Base Management, Global Sourcing, Pricing Leverage, Supplier Development, Common Purchasing, Common Engineering
- Best Practices Development & Deployment

Commodity Management International Purchasing Office Freight & Logistics Central Purchasing



Manufacturing & Integration

PCBA MANUFACTURING &

Engineering prototyping and specialty low-volume manufacturing

Low-to-High Volume PCB Assembly (PCBA)

Complex double-sided PCBs, flexible circuit technology

Ultra-fine pitch (0201), μ BGA, double-sided BGA

Automated conformal coating, potting and encapsulation

Complex RF Electro-Mechanical

Lead-free wave and automated selective wave soldering and complete RoHS-compliant assembly

Clean-room environments

SYSTEMS INTEGRATION

Electro-mechanical systems manufacturing

Rackmount enclosures, PCMCIA cards, servers, backplanes, displays and consoles

Device programming
Custom cables and harnessing

Fiber-optic assembly, optical splicing

Commissioning and configure-to-order (CTO) of both systems and software

Serialization and product-tracking, asset management

Direct order fulfillment (DOF), repair & warranty

WIRE HARNESS & CONNECTORS

Team: Staff with > 20 years of Design Manufacturing and Management experience.

Design & Engineering Support – build to print, design assist, Full-service Engineering

Custom Cable Assembly – Multiple wire types, Various shieldings & protective covers, Insulation resistance, HighPot & Automated final Testing

Complete Electro-Mech Assy & Box Build - Full Integration of wires, metals, and PCBA's. Full verification & Test

PRECISION METAL WORK

Team: Staff with > 50 years of Manufacturing and Management experience.

Advanced Engr Support – DFM, 3D modeling, Reverse Engineering, Chassis & Enclosure Design

Precision CNC Machining – Horizontal & Vertical machine centers, Size 20x30x50 Material options (Alum, Brass, Steel, Stainless, Casting, Alum Forge Plastics)

Custom Metal Fabrication – Fiber Optic Laser for material 0.020 – 1.250, CNC Turret Punch Press for Louvers, Hinges, Knockouts, MultiAxis Forming of complex boxes (up to 250T)

Interconnect Solutions

For Life-Saving and Mission Critical Products



CABLE AND WIRE HARNESS MANUFACTURING

- Custom EMI/RFI Shielding
- Over molded cables with custom material compounding
- Harnessing for Complex Assemblies



CUSTOM TOOLING

- On Site Machining Centers for Tools
- Custom Applications
- Enclosures
- Mounting Grommets
- Splice Molds
- Y-Junctions



CUSTOM OVER MOLDING

- In-House tooling design and manufacturing
- Quick change tooling and TPU materials
- Reduced assembly cost, lead-time and weight

Precision Metalworking

For Life-Saving and Mission Critical Products



PRECISION CNC MACHINING

- High Speed Machining
- Horizontal and Vertical Machining Centers
- Variety of Material Options:
 - Aluminum
 - Brass
 - Steel
 - Stainless Steel
 - Castings
 - Aluminum Forgings
 - Plastic
- Size Range: up to 20"x30"x50"



CUSTOM SHEET METAL FABRICATION

- Fiber Optic Laser Cutting
 - Produce metal blanks of extreme complexity with no tooling required
- CNC Turret Punch Press
 - Turret presses where products require formed features punched into product
- Multi-Axis Forming
 - Form highly complex boxes in one set-up



COMPLETE ELECTRO-MECHANICAL ASSEMBLY & BOX BUILD

- Reliability testing and custom software/hardware system configuration
- Logistics management and direct order fulfillment to the end customer
- Welding: MIG, TIG, Projection Welding

Test Development Services

Provides full turn-key test system design and development services for all Creation Sites and customers

Strong focus on DFT and Test Strategy to provide the optimum test approach for each product

Test systems cover both board and final assembly including Functional Test, Boundary Scan, Burn-in, Environmental and Safety Testing

Test system design capabilities:

- Test Specification Design
- Electro-Mechanical Design
- Fixture Integration
- Software Design
- Project Management

Analysis & Testing Laboratory

Team: Staff with 25 years of counterfeit component risk mitigation & methodology experience.

Root-Cause Failure Analysis – solutions for Product Design Failure, Low Yields, Poor Performance, Degradation

Inspection & Authenticity Testing – Capabilities inc. Counterfeit Component Detection., Lot Acceptance, Construction Analysis

Reliability Qualification Services – Destructive Physical Analysis (DPA), Environmental & Accelerated Life Test, Up Screening, Burn In

Component Analysis & Test Laboratory

ROOT-CAUSE FAILURE ANALYSIS

Solutions for Product Design Failure, Low Yields, Poor Performance, Degradation

INSPECTION & AUTHENTICITY TESTING

Capabilities include Counterfeit Component Detection, Lot Acceptance, Construction Analysis

RELIABILITY & QUALIFICATION SERVICES

Destructive Physical Analysis (DPA), Environmental & Accelerated Life Test, Up Screening, Burn In

SOLVE CHALLENGES

Electronics Manufacturing Experience

Multi-disciplinary Approach

Forensic-style Investigation

MINIMIZE RISK

High-quality Testing Standards

Tailored Testing Plan

Expert Team

DELIVER SOLUTIONS

Quick Turnaround Time

Flexible Solutions

Seamless Integration with Manufacturing

TESTING CAPABILITIES

ISO/IEC 17025:2017 Accredited	AS6081 Suitable
DFARS Compliant	MIL-STD-750 Compliant
MIL-STD-1580 Compliant	ANSI/ESD S20.20:2007 AS5553 Compliant
DLA QTSL Suitability	MIL-STD-202 Suitable
AS6171 Accredited	ITAR Registered
MIL-STD-883 Compliant	IDEA-STD-1010 Compliant
IPC Validation Services Certified	GEIA-STD-006 Compliant



Fulfillment and Logistics

WE PROVIDE THE FOLLOWING LOGISTICS SERVICES:

- Expedient & Cost-Effective Shipping
- Compliance with All Customs Import and Export Requirements Worldwide
- Cargo Insurance
- Freight Claims Processing
- Product Take-Back
- Total Control of All Forward & Reverse Logistics Issues



After-Market Services Tailored to Customer Needs

24/7 VISIBILITY WITH CREATION **VISION**

REPAIR & WARRANTY MANAGEMENT



- System & Component Repair and Debugging
- Refurbishment & Cosmetic Repair
- Hardware & Module Upgrades
- Software & Firmware Upgrades

VALUE ENGINEERING



- Failure Analysis
- Inline Root Cause Corrective Action (RCCA)
- Closed-Loop Feedback to Manufacturing & Design Teams
- DFX

FORWARD & REVERSE LOGISTICS



- Advanced Exchange (Replacement)
- "B" Stock Management
- Warehousing & Distribution
- Global Logistics Support
- Product End-of-Life Support

END-OF-LIFE MANAGEMENT



- Sustaining Eng & Environmental Compliance Services
- Product Take-Back Services (3rd Party)
- Asset Recovery & Part Reutilization (3rd Party)
- Product Recycling & Waste Management (3rd Party)

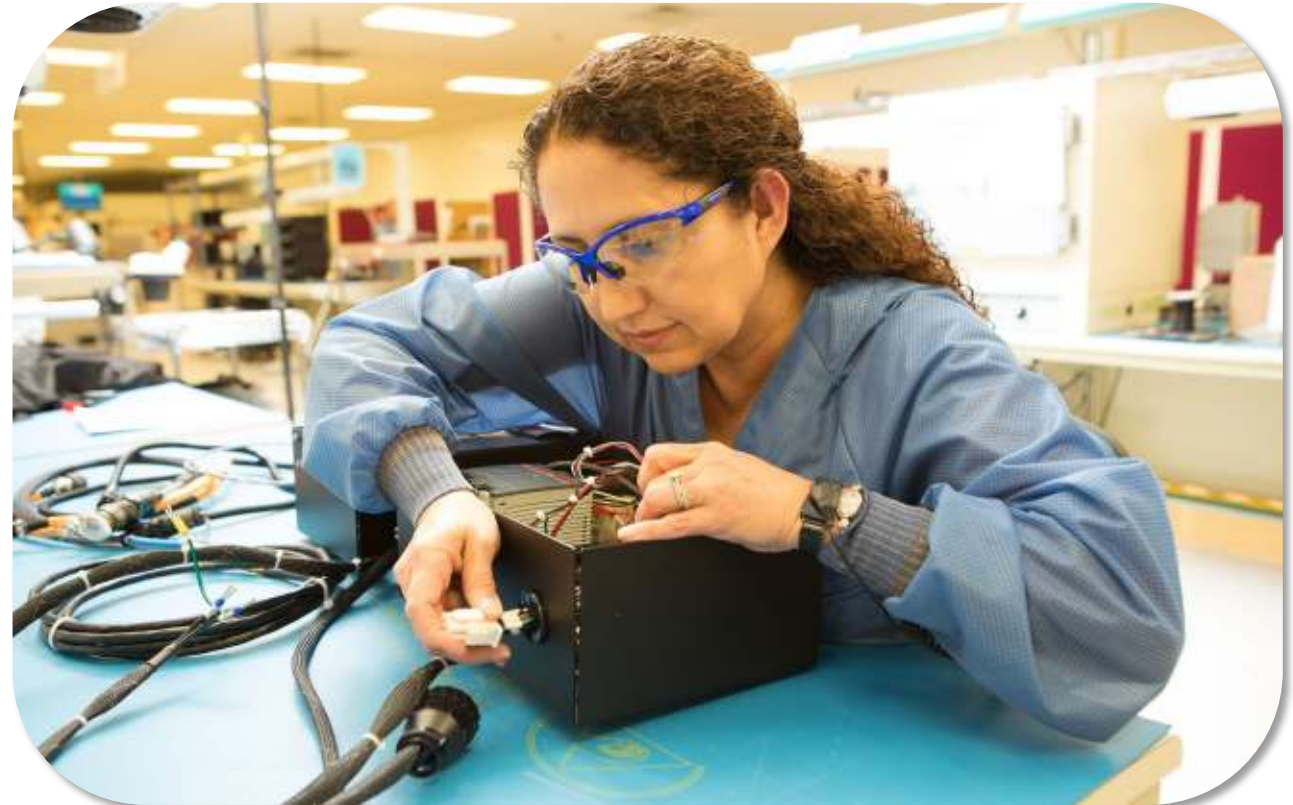
Business Unit Overviews

creation
TECHNOLOGIES



Albuquerque, NM

- Focused 100% on A&D
- 72,000 Square Foot Facility
- 2 SMT lines
- On-site Defense Logistics Agency (DLA) approved lab as part of the Qualified Testing Supplier List - the only such qualification in the EMS industry
- Defense program certifications – Nadcap, Defense Security Service, AS9100, ITAR, ISO9001, ISO17025, ANSI/ESD S20.20
- IPC Class 3; IPC J-STD-001; IPC-A-610; IPC/WHMA-A-620



Boise, ID

- 70,000 Square Foot Facility
- 240 Team Members
- 5 SMT Lines
- Cable & Wire Harness Assembly
- AS9100D, ISO 13485, ISO 9001 and ITAR certified



Changzhou, China

- 75,000 Square Foot Facility
- 3 SMT lines
- 220 People
- ISO 9001, ISO 13485, ISO 14001-Certified
- 1 Black Belt/Lean Coach, 9 Green Belts
- Located in Jiangsu Province
- 90 minutes from Shanghai



Dallas, TX

- 62,000 Square Foot Facility
- 3 SMT Lines
- 150 People
- 2 shifts
- ISO 9001, ISO 13485, AS9100D
- ATEX, FM, CE, ITAR, TUV, and UL



Denver, CO

- 31,000 Square Foot Facility
- 150 People
- 3 SMT Lines
- AS9100D, ISO 13485, ISO 9001 and ITAR certified
- Future home of Product Development, Test Development, Express Prototype and NPI Gateway facility - LEAP Product Realization Center



Hermosillo, Mexico

- 205,000 Square Foot Facility
- 4 SMT Lines With Capacity For 13 SMT Lines
- 200+ Employees
- Fully Integrated EMS Solutions, System Integration & Test, Forward And Reverse Logistics
- ISO 9001:2015 , ISO 13485:20162 , UI



Mexicali, Mexico

- 125,000 Square Foot Facility
- Calexico, California: Warehouse and distribution
- 520 People
- 6 SMT Lines
- ISO 9001, ISO 13485, C-TPAT, FM, UL, CSA, VDE, TUV, Ex, and IATF-16949 (TS compliant), preparedness for ISO-14000.



Milwaukee, WI

- 93,000 Square Foot Facility
- 4 SMT lines
- 300 People
- ISO 9001, ISO 13485
- FDA, CSA, CE, ITAR, TUV, UL, FM
- Our Lean Journey: 3 Black Belts,
26 Blue Belts, 4 Green Belt,
134 Kaizen Events, 1 Lean Sensei



Mississauga, ON, Canada

- 68,000 Square Foot Facility
- 3 SMT lines
- 280 People
- ISO 9001, ISO 13485, AS9100D
- NIST SP 800-171, FDA, CSA, CE, CGD, TUV, UL, FM, InMetro
- Our Lean Journey: 2 Black Belts, 1 Green Belt, 11 Blue Belts, 75 Kaizen Events, 12 Cells with Daily Kaizen



Rochester, NY

- 154,000 Square Foot Facility (Silver Hills)
- Custom Built, State-of-the-Art Facility
- 5 SMT lines
- 650 People
- IPC Class 3; IPC J-STD-001; IPC-A-610; IPC/WHMA-A-620; ISO9001; FDA Registered; ISO13485; AS9100; ITAR; NADCAP
- Combines current precision metals operation along with expanded Electronic Assembly



Rochester, NY

- 86,000k Square Foot Facility (Jet View)
- Capacity for 2 SMT Lines
- 50 People
- Combines current precision metals operation along with expanded Electronic Assembly
- ISO9001; ISO13485; FDA Registered; ITAR; AS9100



Seattle, WA

- 64,000 Square Foot Facility
- 3 SMT Lines
- 250+ Person Staff
- ISO 9001:2015:1997, ISO 13485:2016:2007, AS 9100:2012 FDA, ITAR, UI, CE



St. Peter, MN

- 50,000 Square Foot Facility, 11 Acre Lot
- 3 SMT Lines
- 230 People
- ISO 9001, ISO 13485, AS9100D
- FM, CE, ITAR, UL, CSA and ETL
- 2 Black Belts, 3 Blue Belts, Ongoing Kaizen Events and 3 Cells with Daily Kaizen



Toronto, ON, Canada

- 77,000 Square Foot Facility
- 3 SMT lines
- 280 People
- ISO 9001, ISO 13485, ISO 14001
- CSA, CE, ITAR, TUV, UL, ETL, CGD
- Our Lean Journey: 22 Blue Belts, 3 Green Belts, 2 Black Belts, 78 Kaizen Events, 16 Cells Doing Daily Kaizen



Vancouver, BC, Canada

- 130,000 Square Foot Facility
- 6 SMT Lines
- 380 People
- ISO 9001, ISO 13485
- ATEX, CSA, CE, ITAR, TUV, UL, ETL, CGD, IECTX and FDA
- 1 Black Belt, 14 Green Belts and 1 Blue Belt, 5 Cells with Daily Kaizen, A3 methods, Cellular Manufacturing, 100+ Kaizen Events





Thank You

