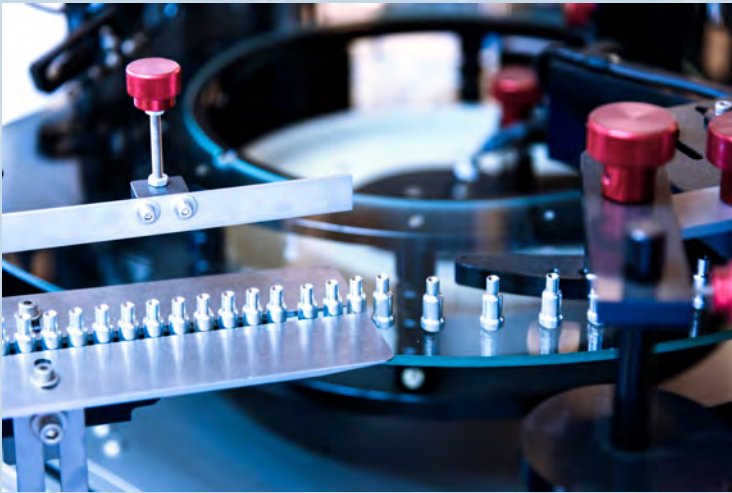


2017 Year In Review





California's Manufacturing Network



A message from James Watson
Manufacturing Extension Partnership
(MEP) Center for California

During the first year of CMTC's five year award to be California's Manufacturing Extension Partnership Center, we have made great progress in building a statewide network to serve small and medium-sized manufacturers (SMMs). Based on our over 25 years of experience as the Southern California MEP Center, our initial focus this year was on Northern California, developing capacity to increase the number of SMMs served and jobs impacted by the MEP Program.

In 2017, our concentration on Northern California has resulted in noteworthy returns. While the number of SMMs served statewide by the MEP Program grew by 8%, the number of SMMs served in Northern California increased by 75% and impacted jobs more than doubled.

Partners in CMTC's newly created "California's Manufacturing Network" have made contributions throughout the State. Their efforts to serve more companies and increase jobs, sales, investments and cost savings have made California Manufacturers more productive and competitive. Our Network partners are identified on page 3.

Last year, the Los Angeles County Economic Development Corporation's Institute for Applied Economics used 2016 project survey data, from third-party client surveys, to determine the economic impact of CMTC's work on California's economy (please see page 4 for details). Highlights from the study included:

- A contribution of \$3.3 Billion to California's GDP
- More than 28,000 created/retained jobs
- More than \$290 Million in state and local tax revenue

This impact can be attributed to the hard work of the CMTC team and our partners in the California Manufacturing Network.

CMTC will continue to increase our service offerings, capabilities and partnerships throughout California to engage SMMs beyond the 1,148 manufacturers served in 2017. CMTC is striving to be the "Go-To" organization for manufacturing in California.

Best Regards,

James Watson
President & CEO
California Manufacturing Technology Consulting

PROGRAM

About CMTC

- CMTC operates through a cooperative agreement between the Hollings Manufacturing Extension Partnership (MEP) Program of the National Institute of Standards and Technology (NIST) under the Department of Commerce for the State of California
- The MEP Program is part of the U.S. Government's efforts to develop and deploy technology, management and technical expertise for improving the competitiveness of small and medium-sized manufacturers
- CMTC is the lead organization of the California Manufacturing Network with service providers located throughout the state
- CMTC exclusively serves small and medium-sized manufacturers who are critical to California, as they represent 90% of job growth for high paying jobs, having a 3-5 job multiplier effect in the economy



Value to Manufacturers

- Serves the unique needs and challenges of manufacturers by focusing exclusively on manufacturing
- A broad array of services proven to impact the bottom line delivered by the California Manufacturing Network
- The ability to offer manufacturers incentives to stimulate improvement activities for growth
- High client satisfaction assured through third-party surveys of CMTC projects

2017 CMTC CLIENT IMPACT

- In 2017, CMTC effectively and efficiently implemented a statewide manufacturing network that produced high client impact

1,148
Manufacturers
Served

11,345
Jobs Impacted

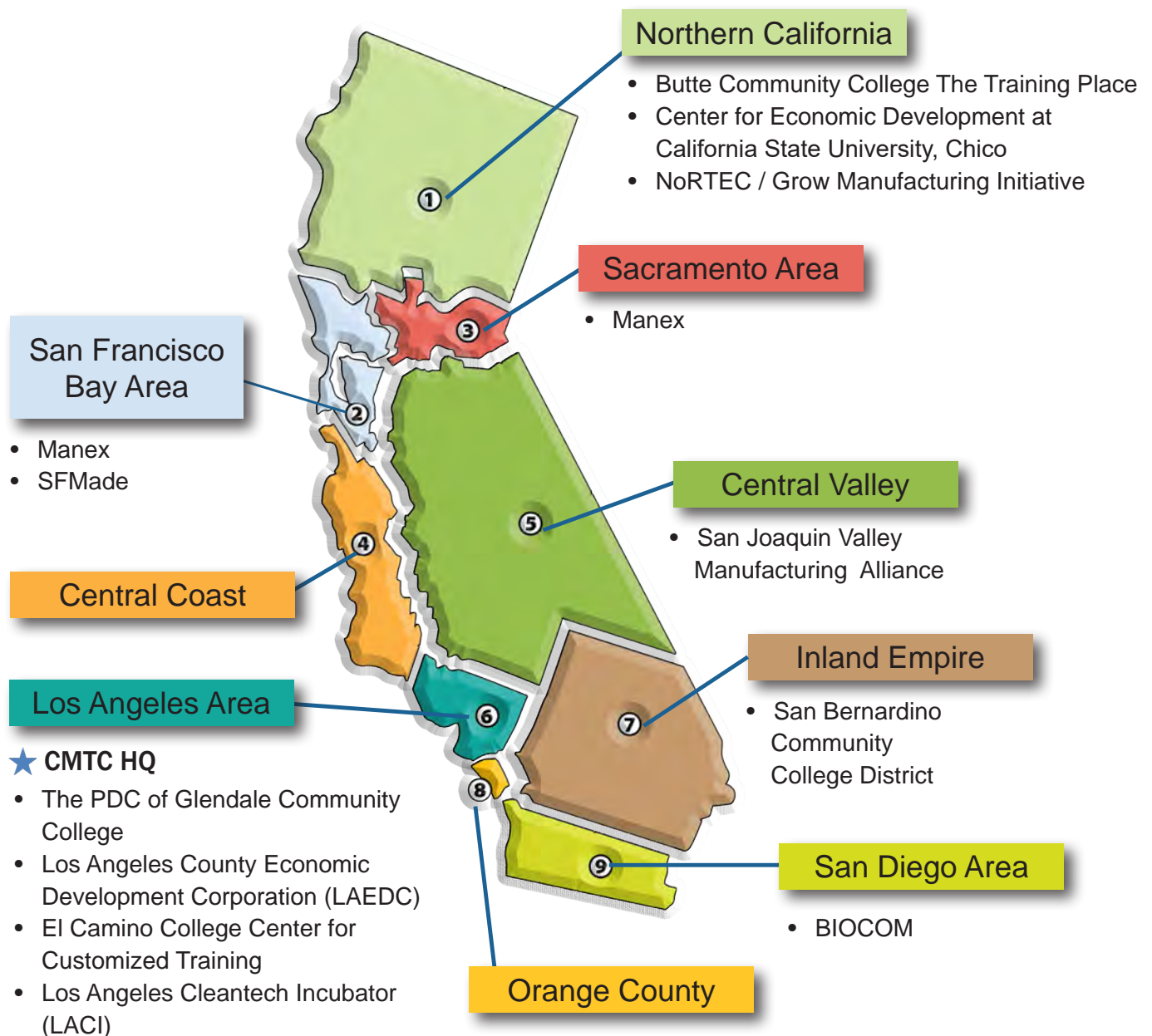
\$101M
Cost Savings

\$751M
Total Sales

\$306M
Total
Investment

CALIFORNIA'S MANUFACTURING NETWORK

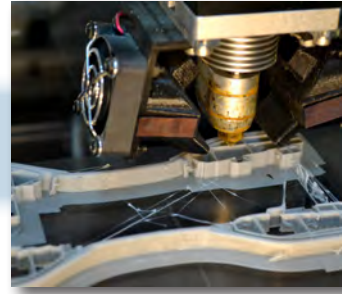
- Our California Manufacturing Network expands CMTC's capabilities and capacity to efficiently serve small and medium-sized manufacturers which augments our statewide services
- The CMTC statewide network of partners works closely with manufacturers to help prepare them to compete at a higher level in the changing global marketplace
- CMTC and our network of partners provides regionally located service providers to select and implement the right programs and services that deliver impact to the bottom line of small and medium-sized manufacturers
- CMTC's statewide partnerships deliver services to meet the unique regional challenges driven by a diverse manufacturing community



CMTC's California Manufacturing Network is the "Go-To" organization to champion and serve the state's manufacturing sector and support a strong manufacturing ecosystem

STATEWIDE CONTRIBUTIONS

CMTC's Contributions to the California Economy



- CMTC, through its California Manufacturing Network, not only addresses the challenges of manufacturing firms statewide, but also works to create impact for manufacturers and the California economy
- CMTC's client impacts contribute to taxes, labor income, employment and the state GDP
- Through its statewide efforts, CMTC has quantified client impact to the California economy in the following areas:



\$3.3 Billion
Contribution to California's GDP



28,363
Total Employment Impact



\$2.0 Billion
Labor Income



\$291 Million
State & Local Taxes



Source: LAEDC Institute for Applied Economics, "MEP in California 2016 Program Results", May 2017

Economic Impact Notes:

- **Contribution to California's GDP** – Calculated using overall impacts including compensation to employees (direct, indirect and induced workers), taxes on production and gross operating surplus.
- **Total Employment Impact** – Uses job multiplier of direct jobs created or retained in 2016 through the work of CMTC to include indirect jobs (jobs supported by purchases made by CMTC client firms and their supplier firms) and induced jobs (jobs generated by the spending of direct and indirect employees).
- **Labor Income** - Income received by the total employees impacted including wages and benefits. This number includes both payroll employees and the self-employed.
- **Local and State Taxes** - Taxes paid by businesses and households supported by direct, indirect and induced activity. This includes personal income taxes, property taxes, sales taxes, corporate taxes and social insurance taxes.

TECHNOLOGY PROGRAMS

Advanced Technology Approach

- Innovations in technologies are rapidly changing the manufacturing sector
- CMTC leverages national and local partnerships to access technology research, manufacturing applications and workforce skills development
 - Manufacturing USA
 - National Labs
 - Universities
 - Community Colleges
- CMTC is developing a suite of services for five technology focus areas that are primed to have significant impact



Manufacturing USA Institutes

- Manufacturing USA is a national network of institutes, each with a specialized technology focus
- MEP is the vehicle to transfer technologies from the Innovation Institutes to small and medium-sized manufacturers (SMMs)
- CMTC has partnered with three of the institutes to provide for technology transfer directly to SMMs



CMTC's Five Technology Focus Areas



Cybersecurity

Enhanced Cyber Resiliency

SMMs are vulnerable to a wide range of risks stemming from cyber threats and hazards. A National Institute of Standards and Technology (NIST) article stated that 62% of breaches impacted SMMs. The average cost to an SMM from a cyber-attack was over \$188,000. CMTC provides a step-by-step approach to assess and monitor against cyber attacks.



Flexible Hybrid Electronics

Next Generation of Electronics Manufacturing

Flexible hybrid electronics (FHE) is an emerging technology that allows electronics mounted on flexible materials to be directly applied to the human body, integrated into clothing or built into structures. These devices can provide real-time information about physiological conditions and motion activities through sensors.



Additive Manufacturing

Manufacturing for Design

Additive Manufacturing (AM), commonly referred to as 3D printing, is now having a significant impact on manufacturing. AM technologies are continuing to advance quickly and SMMs who have been adopting AM processes are achieving benefits in increased innovation, reduced time to market for new products, reduced development costs and less production waste.



SMART Manufacturing

Data Driven Decision Making

SMART Manufacturing combines advanced sensors, controls, platforms and modeling to meet changing demands and conditions in the factory. It is estimated that SMART manufacturing will generate \$371 billion in net global value over the next four years by streamlining design and manufacturing processes.



Robotics and Automation

Enhanced Productivity

Industrial robotics and automation has become a priority for manufacturers as competitive pressures drive change. Teaming human workers with robots on the assembly line will fundamentally change how products are manufactured. Recent studies have shown that the use of robotics and automation is helping boost productivity rather than eliminating jobs.

SUCCESS STORIES

BAYCABLE

Fremont, CA - 85 employees

BAYCABLE was having a hard time finding skilled talent. They decided the best way to meet their needs was to train their current team. Their goal was to create an entrepreneurial workplace where employees drive critical company initiatives, lead change, develop action plans and execute against those plans.



Challenge

- Enhance communication, in particular cross-functionally
- Improve company culture and processes

Solution

- Presented a leadership training series "How to Create an Entrepreneurial Workplace" to BAYCABLE's management team
- The format for the initial program spread this approach throughout the entire company

Results

- Enhanced communication, culture and processes throughout the organization
- Employees took ownership and were motivated to continue improvement efforts
- Reduced number of engineering change orders
- Improved production lead time

"BAYCABLE's endeavor to create an entrepreneurial workplace was successful on many levels. It has helped create incredible empowerment as employees take complete ownership over their team's destiny and make smart decisions that benefit the company and its customers. In addition, through improved communication processes, this program helped take BAYCABLE's culture to the next level."

- Jack Sanford, General Manager, BAYCABLE

Furniture Technologies

Adelanto, CA - 24 employees

FTI specializes in the customized production of wood, plastic, and composite parts. Their skilled designers and CNC router professionals can take an idea, drawing or blueprint and help turn it into a reality.

Challenge

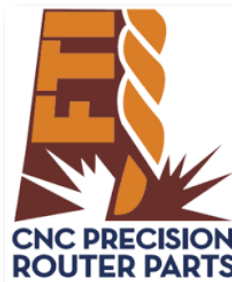
- Create and maintain favorable attention to new customers by creating 21st Century marketing tools for manufacturing success
- Position company for growth and retention of employees

Solution

- Grow domestic and international business opportunities / build a strong sales pipeline
- Develop a brand strategy
- Develop a manufacturing Marketing Plan
- Develop a manufacturing Sales Plan

Results

- \$5,400,000 in increased/retained sales
- 11 jobs created/retained
- \$606,000 in capital investment



"The partnership with CMTC has allowed us to attract new business opportunities and new markets (domestic and international). We appreciate the partnership and look forward to a long lasting relationship. CMTC has made all the difference in our ability to achieve these results."

- Ken Drum, Owner

SUCCESS STORIES

Warren Packaging

Ontario, CA - 16 employees

Warren Packaging provides custom labels and performs specialized paper-converting tasks, including producing corrugated packaging and folding cartons, for use in a variety of businesses.



Challenge

- Demand was growing and the company increased facility space to allow for larger manufacturing capability
- The company began suffering from high lead-times and poor customer satisfaction ratings

Solution

- Implement a Lean Manufacturing rollout to address the company's issues and position the business for growth
- Four subject areas were addressed: leadership and culture; information flow; material flow; and process efficiency

Results

- \$10,000,000 in increased/retained sales
- \$175,000 in cost savings
- 6 jobs created/retained
- 11 jobs retained

"With the support of CMTC, Warren Packaging was able to implement a Lean Manufacturing rollout that resolved issues involving quality, inventory control, and lack of key performance indicators."

- Mike Dittenber, Director, Operations

Galaxy Desserts

Richmond, CA - 200 employees

Galaxy Desserts manufactures company-branded and private-label high-end dessert items through direct sales and retail channels. The company's business is comprised of retail, food service and catalog sales.

Challenge

- Rapid and continuing growth resulted in a move to a new production facility
- The company anticipated expanding its manufacturing facility footprint and associated production lines
- While the organization wanted to grow, it was having difficulty meeting all of their orders
- Management wanted to explore operational improvement opportunities, while concurrently providing comprehensive training of their employees

Solution

- Tailored approach designed to maximize production efficiency and quality
- Involve production personnel to the greatest extent possible in order to transfer knowledge and enable continuous improvement
- Focus specifically on the existing croissant line and packaging area/team to drive high-impact results within two critically important areas to the company's overall business performance

Results

- Changed the plant layout to improve flow
- Increased throughput by 100%
- Reduced per unit cost by 20%



"We've made significant improvements in our processes that have resulted in our ability to double production in our croissant line. With our processes optimized and a team fully trained, we now have an efficient manufacturing operation that is ready to achieve

the product volumes necessary to delight and satisfy our customers."

- Jean-Yves Charon, Co-Founder

SUCCESS STORIES

ATP

Fremont, CA - 112 employees



Applied Thin-Film Products (ATP) is a provider of microwave components and thin-film printed circuit printed boards. ATP has an excellent and growing reputation in the wireless RF and microwave industries, due to its engineering focus, superior processing and products.

Challenge

- ATP required assistance in the implementation of a robust quality management system using ISO 9001:2000 as its foundation
- ATP strived to better manage its processes and foster teamwork by clarifying roles and responsibilities

Solution

- Educated management and staff about the ISO 9001:2000 Standard, scope of work and organizational impact
- Identified and mapped organizational processes, addressing all imposed requirements
- Developed the organization's quality objectives, quality policy, quality manual and quality system
- Established comprehensive approach to document control and access

Results

- The company gained ISO 9001: 2000 certification in May, 2017
- In-depth training and education of 26 key process owners
- Continuous improvement facilitated by a system to consistently measure quality
- Workforce development improvements of \$10,400

"We rapidly gained our ISO certification with the implementation of a robust quality management system. The system has helped us to better manage our processes and deliver greater consistency to our customers."

– Messeret Berhan, Quality Assurance Manager

KAP Manufacturing

San Dimas, CA - 22 employees

KAP Manufacturing was formed in 1997 with the goal of providing customers with the integrity and quality they deserve when it comes to working with a precision machine shop.

Challenge

- Develop KAP Manufacturing's AS9100 Rev. D compliant Quality Management System

Solution

- Provided guidance and roadmap to complete their quality manual
- Published templates and instructions for completing new requirements
- Developed instructions and training to complete internal audits

Results

- \$2,850,000 in increased/retained sales
- 17 jobs created/retained
- \$85,000 in capital investment



"Our contact with CMTC was very professional. They were extremely responsive to our needs and provided highly skilled trainers. The interaction and correlation between CMTC and KAP was seamless."

– Kathy D'Amato, President

SUCCESS STORIES

Scandic Springs

San Leandro, CA - 36 employees

Scandic is a leader in coil springs, fourslide stampings, precision progressive stampings, and CNC wireforming. Scandic is the largest spring and stamping company in Northern California.



Challenge

- Scandic's clients were requesting that they acquire ISO 9001 certification to maintain their current business and to be awarded future contracts
- Additionally, Scandic was looking for ways of becoming Lean, in particular with their high-running product lines

Solution

- Creation of an ISO 9001:2008 Quality Management System, resulting in ISO 9001 certification
- Facilitation of two practical problem solving (Kaizen) events geared toward improving the Value Stream of current operations

Results

- ISO 9001 certification
- \$600,000 in new and retained sales
- \$100,000 in cost savings
- 2 jobs created

"The key to this process was achieving ISO 9001:2008 certification, which we passed with flying colors. As a result, we are a leaner and more profitable business and we have a new sense of where the hidden savings are."
- R. Hale Foote, President

Pico Digital

San Diego, CA - 65 employees

Pico Digital is an international telecommunications technology company serving a variety of markets in more than 50 countries. They are a global leader in the design, manufacture, and support of high-performance, high-value infrastructure, distribution, and customer premise equipment.

Challenge

- Pico Digital's managers and employees realized that they needed to determine the quantity of waste in their production process
- They also needed to evaluate the performance of the product warranty and support process and develop opportunities to improve profitability in the repair depot

Solution

- Conducted a lean diagnostic of the warranty and support service process to determine waste and evaluate performance
- Developed a process map to identify the source and location of performance issues
- Instituted a warranty and support services improvement project implementation plan

Results

- \$24,000,000 in increased/retained sales
- 12 jobs created/retained
- \$100,000 of cost savings
- \$25,000,000 in capital investment



"The implementation of the lean program should allow us to enhance our value-added solutions and forge relationships with customers in new markets and geographies."

- Ian Lerner, CEO

CMTC Leadership Team

James Watson, President & CEO

Jack Van Buren, Chief Financial Officer

John Anderson, Director of Field Operations

Doug Garnee, Director of Human Resources

Gregg Profozich, Director of Advanced Manufacturing Technologies

Cheryl Slobodian, Director of Strategic Partnerships

Gil Gonzales, Director-Northern California Strategic Business Development

CMTC Board of Directors

Anna Kan

Board Chair

CEO & Founder

Mustard Seed Enterprises

Fontana, CA

Paul Sunde

Vice Chairman

Founder

Radcal Corporation

Monrovia, CA

Richard Brent

CEO

Louroe Electronics

Van Nuys, CA

Joe Bussing

Manufacturing Consultant

Simi Valley, CA

Erin Dyer

Vice President

Accurate Dial & Nameplate, Inc.

Glendale, CA

Marwan Hammouri

President & CEO

Brek Manufacturing

Gardena, CA

Tim Hetrick

General Manager

Means Engineering, Inc.

Carlsbad, CA

Tom Lightner

Manufacturing Consultant

Vista, CA

Gary Smith

Vice President

West Coast Operations

D'Addario Woodwinds

Sun Valley, CA

James Watson

President & CEO

CMTC

Torrance, CA

Advancing California Manufacturing



Made in CA

The Made in CA Program is an online program celebrating and connecting the manufacturers that make products within the state. The program has enhanced the visibility of manufacturing statewide and has created a community of manufacturers from Crescent City to San Diego. The best news is that it is a complimentary program offered by CMTC to qualified manufacturers in the state.



California Network for Manufacturing Innovation (CNMI)

CMTC is in a leadership position in CNMI, a statewide collaborative formed to foster the transfer of technology from developers to small and medium-sized manufacturers (SMMs). CNMI provides SMMs access to advanced manufacturing technologies that drive profitable growth and global competitiveness. CNMI conducts annual summits and regional workshops to develop SMM awareness of technological advances in areas such as Additive and Smart Manufacturing.



Manufacturing USA

Manufacturing USA connects people, ideas, and technology to solve industry-relevant advanced manufacturing challenges. Manufacturing USA institutes focus on moving promising, early-stage research into proven capabilities ready for adoption by U.S. manufacturers. CMTC is actively involved in all 14 of the institutes and has embedded staff at NextFlex for flexible hybrid electronics technology, the Clean Energy Smart Manufacturing Innovation Institute for SMART Manufacturing, and the Advanced Robotics Manufacturing Institute for robotics and automation.

Partners Working Together to Support Manufacturing

Business Councils • Business Partnerships • Community Banks • Community Colleges
Economic Development Agencies • Federal Government Agencies • Industry Associations
National Research Laboratories • Non-Profit Associations • Professional Services Alliances
Public Agency Alliances • State and Local Government Agencies • State Colleges and Universities
Training and Development Groups • Workforce Development Boards



California's Manufacturing Network

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