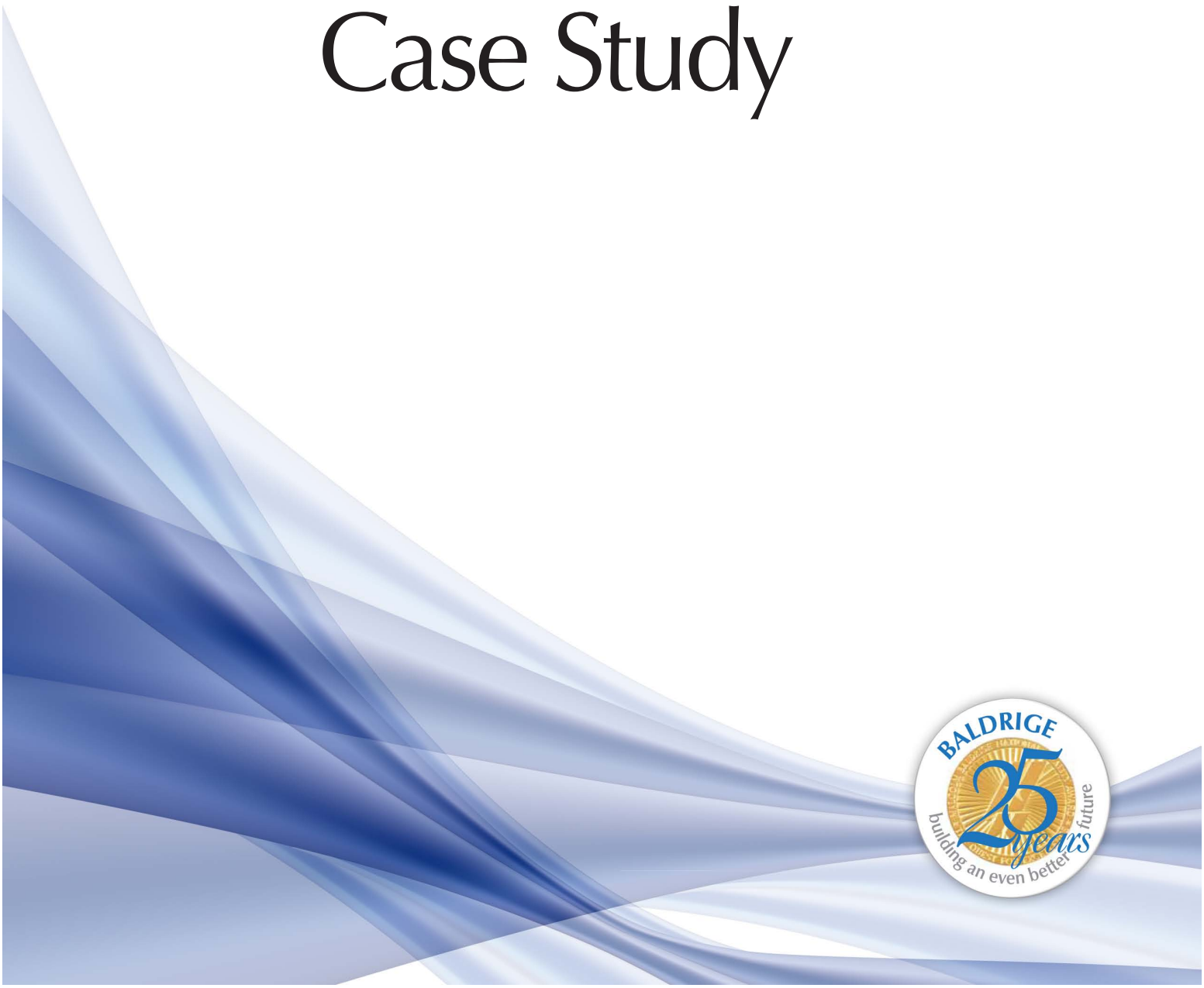
2013

Collin Technologies Case Study



Baldrige Performance Excellence Program

National Institute of Standards and Technology (NIST) • United States Department of Commerce

July 2013

To obtain Baldrige Program products and services, contact

Baldrige Performance Excellence Program
Administration Building, Room A600
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Gaithersburg, MD 20899-1020

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Web: **http://www.nist.gov/baldrige**

The *Collin Technologies Case Study* is a fictional Baldrige Award application prepared for use in the 2013 Malcolm Baldrige National Quality Award Examiner Preparation Course. The fictitious case study organization is a small, high-tech manufacturer in the electronics (interconnect) industry. The case study illustrates the format and general content of an award application. However, since the case study serves primarily as a tool for training examiners to evaluate organizations against the 2013–2014 Criteria for Performance Excellence, the application does not address all Criteria requirements or demonstrate role-model responses in all Criteria areas. Please refer to the *Collin Technologies Feedback Report* to learn how the organization scored and to see its strengths and opportunities for improvement.

There is no connection between the fictitious Collin Technologies and any other organization, named either Collin Technologies or otherwise. Except for several national and government organizations, the other organizations cited in the case study are fictitious.

NIST, an agency of the U.S. Department of Commerce, manages the Baldrige Program. NIST has a 100-plus-year track record of serving U.S. industry, science, and the public with the mission to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. NIST carries out its mission in three cooperative programs, including the Baldrige Program. The other two are the NIST laboratories, conducting research that advances the nation's technology infrastructure and is needed by U.S. industry to continually improve products and services; and the Hollings Manufacturing Extension Partnership, a nationwide network of local centers offering technical and business assistance to small manufacturers.

Suggested citation: Baldrige Performance Excellence Program. *2013 Collin Technologies Case Study.* Gaithersburg, MD: U.S. Department of Commerce, National Institute of Standards and Technology. http://www.nist.gov/baldrige.

CONTENTS

2013 ELIGIBILITY CERTIFICATION FORM

This document contains the Eligibility Certification Form and checklist for the 2013 Malcolm Baldrige National Quality Award. Before filling out the form, please see *Is Your Organization Eligible?* (http://www.nist.gov/baldrige/enter/eligible.cfm) on our Web site.

The form uses text fields ( ) that expand as you type. To enter text, place your cursor in the field, click to highlight the field, and begin typing. Use the Tab key to navigate to the next field.

In addition to the general eligibility conditions and eligibility category requirements detailed on our Web site (see *Is Your Organization Eligible?* (http://www.nist.gov/baldrige/enter/eligible.cfm), your organization must meet ONE of the criteria listed below to apply for the Baldrige Award. If you have questions, please call (877) 237-9064, option 3.

If using criteria 2, 3, or 4, please fill in the information requested below**.**

1. My organization has won the Baldrige Award.	Yes	Your organization is eligible (five-year rule as stated on page 7 is still in effect).	No	Continue with statement 2.
2. Between 2008 and 2012, my organization received the top award from an award program that is a member of the Alliance for Performance Excellence.	Yes	Your organization is eligible. Award program: State Center for Performance Excellence (SCPE) Year of top award: 2012	No	Continue with statement 3.
3. Between 2008 and 2012, my organization applied for the national Baldrige Award, and the total of the process and results band numbers assigned in the feedback report was 8 or higher.	Yes	Your organization is eligible. Year: Total of band scores:	No	Continue with statement 4.
4. Between 2008 and 2012, my organization applied for the national Baldrige Award and received a site visit.	Yes	Your organization is eligible. Year of site visit:	No	Continue with statement 5.
5. More than 25% of my organization's workforce is located outside the organization's home state.	Yes	Your organization is eligible.	No	Continue with statement 6.
6. There is no Alliance for Performance Excellence award program available for my organization.	Yes	Your organization is eligible.	No	Call 877-237-9064, option 3.

.

1. Your Organization

Official name	Collin Technologies
Other name	
Prior name	*(if changed within the past 5 years)*

Headquarters address: 624 Industrial Court, Nashville, TN 37217

2. Highest-Ranking Official

☒ Mr. ☐ Mrs. ☐ Ms. ☐ Dr.

Name	Georgio Michelli
Job title	Chief Executive Officer
E-mail	georgio.michelli@CollinTech.com
Telephone	615-555-8162
Fax	615-555-3932

Address: ☒ Same as above

3. Eligibility Contact Point

Designate a person who can answer inquiries about your organization. Questions from your organization and requests from the Baldrige Program will be limited to this person and the alternate identified below.

☐ Mr. ☐ Mrs. ☒ Ms. ☐ Dr.

Name	Michelle Blanton
Job title	Director, Performance Excellence
E-mail	michelle.blanton@CollinTech.com
Telephone	615-555-4586
Fax	615-555-3958

Address: ☒ Same as above

Overnight mailing address: ☐ Same as above *(Do not use a P.O. box number.)*

4. Alternate Eligibility Contact Point

☒ Mr. ☐ Mrs. ☐ Ms. ☐ Dr.

Name	Jeffrey Mercier	Telephone	615-555-2618
E-mail	Jeff.mercier@CollinTech.com	Fax	615-555-3976

5. Application History

a. Has your organization previously submitted an eligibility certification package?

☒ Yes. *Indicate the year(s). Also indicate the organization's name at that time, if different.*

Year(s)	1992, 1999
Name(s)	

☐ No

☐ Don't know

b. Has your organization ever received the Malcolm Baldrige National Quality Award?

☐ Yes. Did your organization receive the award in 2007 or earlier?

☐ Yes. *Your organization is eligible to apply for the award.*

☐ No. *If your organization received an award between 2008 and 2012, it is eligible to apply for feedback only. Contact the Baldrige Program at (877) 237-9064, option 3, if you have questions.*

☒ No

c. *(Optional; for statistical purposes only)* Has your organization participated in a state or local Baldrige-based award process?

☒ Yes. Years: 1993, 1997, 1998, 2011, 2012

☐ No

6. Award Category

See Is Your Organization Eligible? (http://www.nist.gov/baldrige/enter/eligible.cfm) *on our Web site*.

a. Award category *(Check one.)*

Your education or health care organization may use the Business/Nonprofit Criteria and apply in the service, small business, or nonprofit category. However, you probably will find the sector-specific Criteria more appropriate.

For-Profit	Nonprofit
☒ Manufacturing	☐ Nonprofit
☐ Service	☐ Education
☒ Small business (≤ 500 employees)	☐ Health care
☐ Education	
☐ Health care	

b. Industrial classifications. List up to three of the most descriptive NAICS codes for your organization (see NAICS list included at the end of this document). *These are used to identify your organizational functions and to assign applications to examiners.*

3344		

If you are unable to respond to any item,
call (877) 237-9064, option 3, before submitting this form.

7. Organizational Structure

a. For the preceding fiscal year, the organization had in

- ☐ up to $1 million
- ☐ $1.1 million–$10 million
- ☐ $10.1 million–$100 million
- ☐ $100.1 million –$500 million
- ☒ $500.1 million–$1 billion
- ☐ more than $1 billion

⇨

- ☒ sales
- ☐ revenue
- ☐ budget

b. Attach a line-and-box organization chart that includes divisions or unit levels. In each box, include the name of the unit or division and the name of its leader. Do not use shading or color in the boxes.

☒ The chart is attached.

c. The organization is _____ a larger parent or system. *(Check all that apply.)*

☒ not a subunit of *(Proceed to item 8.)*

☐ a subsidiary of ☐ controlled by ☐ administered by ☐ owned by

☐ a division of ☐ a unit of ☐ a school of ☐ other _____

Parent organization		Address	
Total number of paid employees*			
Highest-ranking official		Job title	
Telep one			

Paid employees include permanent, part-time, temporary, and telecommuting employees, as well as contract employees **supervised by the organization. Include employees of subunits but not those of joint ventures.*

d. Is your organization the only subunit of the parent intending to apply for the award? *Based on the parent organization's size, the program may accept multiple applications within or across award categories from subunits (see* Is Your Organization Eligible? (http://www.nist.gov/baldrige/enter/eligible.cfm).

☐ Yes ☐ No *(Briefly explain below.)* ☐ ☐ Don't know

e. Attach a line-and-box organization chart(s) showing your organization's relationship to the parent's highest management level, including all intervening levels. In each box, include the name of the unit or division and its leader. Do not use shading or color in the boxes.

☐ The chart is attached.

f. Considering the organization chart, briefly describe below how your organization relates to the parent and its other subunits in terms of products, services, and management structure.

g. Provide the title and date of an official document (e.g., an annual report, organizational literature, a press release) that clearly defines your organization as a discrete entity.

Title | Date

Attach a copy of relevant portions of the document. If you name a Web site as documentation, print and attach the relevant pages, providing the name only (not the URL) of the Web site.

☐ Relevant portions of the document are attached.

h. Briefly describe the major functions your parent or its other subunits provide to your organization, if appropriate. *Examples are strategic planning, business acquisition, research and development, facilities management, data gathering and analysis, human resource services, legal services, finance or accounting, sales/marketing, supply chain management, global expansion, information and knowledge management, education/training programs, information systems and technology services, curriculum and instruction, and academic program coordination/development.*

8. Eligibility Determination

See also Is Your Organization Eligible? (http://www.nist.gov/baldrige/enter/eligible.cfm).

a. Is your organization a distinct organization or business unit headquartered in the United States?

☒ Yes ☐ No *Briefly explain*.

b. Has your organization officially or legally existed for at least one year, or since April 2, 2012?

☒ Yes ☐ No

c. Can your organization respond to all seven Baldrige Criteria categories? Specifically, does your organization have processes and related results for its unique operations, products, and/or services? For example, does it have an independent leadership system to set and deploy its vision, values, strategy, and action plans? Does it have approaches for engaging customers and the workforce, as well as for tracking and using data on the effectiveness of these approaches?

☒ Yes ☐ No

d. If some of your organization's activities are performed outside the United States or its territories and your organization receives a site visit, will you make available sufficient personnel, documentation, and facilities in the United States to allow a full examination of your worldwide organization?

☐ Yes ☐ No ☒ Not applicable

e. If your organization receives an award, can it make sufficient personnel and documentation available to share its practices at The Quest for Excellence Conference and at your organization's U.S. facilities?

☒ Yes ☐ No

If you checked "No" for 8a, 8b, 8c, 8d, or 8e, call the Baldrige Program at (877) 237-9064, option 3.

Questions for Subunits Only

f. Is your subunit recognizably different from the parent and its other subunits? For example, do your customers distinguish your products and services from those of the parent and/or other subunits? Are your products or services unique within the parent? Do other units within the parent provide the same products or services to a different customer base?

☐ Yes. *Continue with 8g.*

☐ No. *Your subunit probably is not eligible to apply for the award. Call the Baldrige Program at (877) 237-9064, option 3.*

g. Is your organization a subunit in education or health care? (*Check your eligibility by reading* Is Your Organization Eligible? (http://www.nist.gov/baldrige/enter/eligible.cfm) *on our Web site.)*

☐ Yes. ***Proceed to item 9.***

☐ No. *Continue with 8h.*

h. Does your subunit have more than 500 paid employees?

☐ Yes. *Your organization is eligible to apply for the award.* ***Proceed to item 9.***

☐ No. *Continue with 8i.*

i. Is your subunit in manufacturing or service?

☐ Yes. Is it separately incorporated and distinct from the parent's other subunits? Or was it independent before being acquired by the parent, and does it continue to operate independently under its own identity?

☐ Yes. *Your subunit is eligible in the small business category. Attach relevant portions of a supporting official document (e.g., articles of incorporation) to this form.* ***Proceed to item 9.***

☐ No. *Continue with 8j.*

☐ No. *Your subunit probably is not eligible to apply for the award. Call the Baldrige Program at (877) 237-9064, option 3.*

j. Does your subunit (1) have more than 25 percent of the parent's employees, *and* (2) does your subunit sell or provide 50 percent or more of its products or services directly to customers/users outside your subunit, its parent, and other organizations that own or have financial or organizational control of your subunit or the parent?

☐ Yes. *Your organization is eligible to apply for the award.*

☐ No. *Your organization probably is not eligible to apply for the award. Call the Baldrige Program at (877) 237-9064, option 3.*

9. Supplemental Sections

The organization has (a) a single performance system that supports all of its product and/or service lines and (b) products or services that are essentially similar in terms of customers/users, technology, workforce or employee types, and planning.

☒ Yes. *Proceed to item 10.*

☐ No. *Your organization may need to submit one or more supplemental sections with its application. Call the Baldrige Program at (877) 237-9064, option 3.*

10. Application Format

If your organization applies for the 2013 award, in which format will you submit your application?

☒ 15 paper copies **and** a CD (must be postmarked on or before May 14, 2013)

☐ CD only (must be postmarked on or before April 30, 2013)

11. Use of Cell Phones, Cordless Phones, and Voice-over-Internet Protocol (VoIP)

Do you authorize Baldrige examiners to use cell phones, cordless phones, and VoIP to discuss your application? *Your answer will not affect your organization's eligibility. Examiners will hold all your information in strict confidence and will discuss your application only with other assigned examiners and with Baldrige Program representatives as needed.*

☒ Yes ☐ No

12. Site Listing

You may attach or continue your site listing on a separate page as long as you include all the information requested here. You may group sites by function or location (city, state), as appropriate. Please include the total for **each column** (sites, employees/faculty/staff, and volunteers). *If your organization receives a site visit, the Baldrige Program will request a more detailed listing. Although site visits are not conducted at facilities outside the United States or its territories, these facilities may be contacted by teleconference or videoconference.*

Example

	Sites (U.S. and Foreign) *List the city and the state or country.*	**Workforce*** *List the numbers at each site.* *Check one or more.* ❒ **Employees** ■ **Faculty** ■ **Staff**	**Volunteers (or ❒ N/A)**	*List the % at each site, or use "N/A" (not applicable).* *Check one.* **% of** ❒ **Sales** ❒ **Revenue** ■ **Budget**
	Coyote Hall Albuquerque, NM	381 Faculty 200 Staff	25	95%
	Cactus Hall Bernalillo, NM	17 Faculty 2 Staff	3	5%
Total	**2**	**600**	**28**	**100%**

**The term "workforce" refers to all people actively involved in accomplishing the work of your organization, including paid employees (e.g., permanent, part-time, temporary, and telecommuting employees, as well as contract employees supervised by the organization) and volunteers, as appropriate. The workforce includes team leaders, supervisors, and managers at all levels.*

Your Organization

	Sites (U.S. and Foreign) *List the city and the state or country.*	**Workforce*** *List the numbers at each site.* *Check one or more.* ☒ **Employees** ☐ **Faculty** ☐ **Staff**	**Volunteers (or ☒ N/A)**	*List the % at each site, or use "N/A" (not applicable).* *Check one.* **% of** ☒ **Sales** ☐ **Revenue** ☐ **Budget**
	Nashville, TN	425		100%

If you are unable to respond to any item,
call (877) 237-9064, option 3, before submitting this form.

Total	1	425		**100%**

**The term "workforce" refers to all people actively involved in accomplishing the work of your organization, including paid employees (e.g., permanent, part-time, temporary, and telecommuting employees, as well as contract employees supervised by the organization) and volunteers, as appropriate. The workforce includes team leaders, supervisors, and managers at all levels.*

13. Key Business/Organization Factors

List or briefly describe the following key business/organization factors. Please be concise, but be as specific as possible. Provide full names of organizations (i.e., do not use acronyms). *The Baldrige Program uses this information to avoid conflicts of interest when assigning examiners to your application. Examiners also use this information in their evaluations.*

a. Main products and/or services and major markets served (local, regional, national, and international)

Collin is a manufacturer of single-, double-, and multilayer printed circuit boards, as well as rigid-flex circuits. In addition, contract R&D services are available to its customers. Collin provides all products and services directly to its customers. It serves three business segments: Aerospace (national), Personal Electronics (international), and Contract R&D (national).

b. Key competitors (those that constitute 5 percent or more of your competitors)

SuperFlex, USA Circuits, Ace Circuitry, Ridgeford Technology

c. Key customers/users (those that constitute 5 percent or more of your customers/users)

GBN Corp., NexTee, MEE2, Sleeker, Valley Tech., Newton Computers

d. Key suppliers/partners (those that constitute 5 percent or more of your suppliers/partners)

UY Electronics, Thai EMS, Apex Glass Works, Supercharged Chips, Mica AWarehouse, Tron Ltd.

e. Financial auditor

Goldstein & Smith

f. Fiscal year (e.g., October 1–September 30)

January 1–December 31

14. Nomination to the Board of Examiners

If you submit your eligibility certification package on or before February 19, 2013, you may nominate one senior member from your organization to the 2013 Board of Examiners.

Nominees are appointed for one year only. Nominees

- **must not have served previously on the Board of Examiners** and
- must be citizens of the United States, be located in the United States or its territories, and be employees of the applicant organization.

The program limits the number of examiners from any one organization. If your organization already has representatives on the board, nominating an additional person may affect their reappointment.

Board appointments provide a significant opportunity for your organization to learn about the Criteria and the evaluation process. The time commitment is also substantial: examiners commit to a minimum of 110 hours from April to December, including approximately 40 hours in April/May to complete self-study, three to four days in May to attend Examiner Preparation, and 50–70 hours from June through August to complete an Independent and Consensus Review. If requested by the program, examiners also participate in a Site Visit Review of approximately nine days. The nominee or the organization must cover travel and housing expenses incurred for Examiner Preparation.

☐ Mr. ☐ Mrs. ☐ Ms. ☒ Dr.

Candice Trobaugh	from our organization will serve on the 2013 Board of Examiners.
candice.trobaugh@CollinTech.com	E-mail address

☒ I understand that the nominee or the organization will cover travel and hotel costs associated with participation in Examiner Preparation.

15. Fee

Indicate your method of payment for the $360 eligibility certification fee.

☒ Check (enclosed)	☐ Money order (enclosed) *Make payable to the **Malcolm Baldrige National Quality Award**.*	
☐ ACH payment	☐ Wire transfer	Checking ABA routing number: 075-000-022 Checking account number: 182322730397
Before sending an ACH payment or wire transfer, notify the American Society for Quality (ASQ; [414] 298-8789, ext. 7205, or mbnqa@asq.org). Reference the Baldrige Award with your payment.		
☐ Visa ☐ MasterCard ☐ American Express		

Card number		Authorized signature	
Expiration date		Printed name	
Card billing address		Today's date	

W-9 Request

If you require an IRS Form W-9 (Request for Taxpayer Identification Number and Certification), contact ASQ at (414) 298-8789, ext. 7205.

16. Self-Certification and Signature

I state and attest the following:

(1) I have reviewed the information provided in this eligibility certification package.

(2) To the best of my knowledge,
- this package includes no untrue statement of a material fact, and
- no material fact has been omitted.

(3) Based on the information herein and the current eligibility requirements for the Malcolm Baldrige National Quality Award, my organization is eligible to apply.

(4) I understand that if the information is found not to support eligibility at any time during the 2013 award process, my organization will no longer receive consideration for the award and will receive only a feedback report.

Georgio Michelli	Georgio Michelli	2/10/2013
Signature of highest-ranking official	Printed name	Date

17. Submission

To be considered for the 2013 award, submit your eligibility certification package
- on or before February 19, 2013, if you include a nomination to the Board of Examiners
- on or before April 2, 2013, without a nomination, to

Malcolm Baldrige National Quality Award
c/o ASQ—Baldrige Award Administration
600 North Plankinton Avenue
Milwaukee, WI 53203
(414) 298-8789, ext. 7205

Include proof of the mailing date. Send the package via
- a delivery service (e.g., Airborne Express, Federal Express, United Parcel Service, or the United States Postal Service [USPS] Express Mail) that automatically records the mailing date or
- the USPS (other than Express Mail), with a dated receipt from the post office.

1. Eligibility Certification Form*

☒ I have answered all questions completely.

☒ I have included a line-and-box organization chart showing all components of the organization and the name of each unit or division and its leader.

☒ The highest-ranking official has signed the form.

For Subunits Only

☐ I have included a line-and-box organization chart(s) showing the subunit's relationship to the parent's highest management level, including all intervening levels.

☐ I have enclosed copies of relevant portions of an official document clearly defining the subunit as a discrete entity.

**Please do not staple the pages of this form.*

2. Fee

☒ I have indicated my method of payment for the nonrefundable $360 eligibility certification fee.

☒ If paying by check or money order, I have made it payable to the **Malcolm Baldrige National Quality Award** and included it in the eligibility certification package.

3. Submission and Examiner Nomination

☒ I am nominating a senior member of my organization to the 2013 Board of Examiners, and I am submitting the eligibility certification package on or before February 19, 2013.

☐ I am not nominating a senior member of my organization to the 2013 Board of Examiners, and I am submitting the eligibility certification package on or before April 2, 2013.

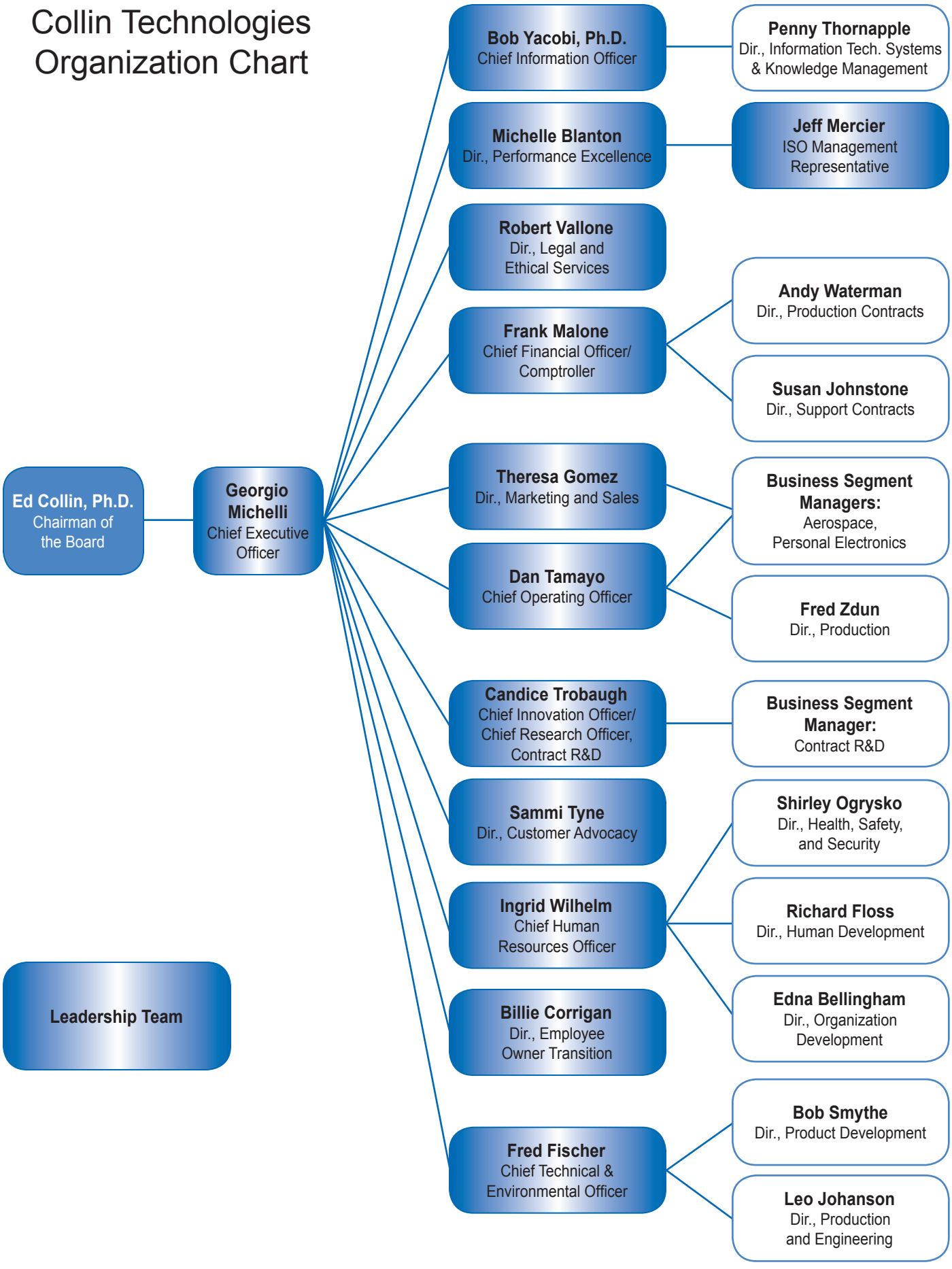
☒ I have included proof of the mailing date. *(See page E-8.)*

☒ I am sending the complete eligibility certification package to

Malcolm Baldrige National Quality Award
c/o ASQ—Baldrige Award Administration
600 North Plankinton Avenue
Milwaukee, WI 53203
(414) 298-8789, ext. 7205

ORGANIZATION CHART

Collin Technologies Organization Chart



PAGE A-1
OF THE
2013 AWARD
APPLICATION FORM

2013 Award Application Form

Malcolm Baldrige National Quality Award

OMB Clearance #0693-0006
Expiration Date: March 13, 2013

1. Your Organization

Official name	Collin Technologies
Mailing address	624 Industrial Court Nashville, TN 37217

2. Award Category and Criteria Used

a. Award category (Check one.)

- ☐ Manufacturing
- ☐ Service
- ☒ Small business. The larger percentage of sales is in *(check one)* ☒ Manufacturing ☐ Service
- ☐ Education
- ☐ Health care
- ☐ Nonprofit

b. Criteria used (Check one.)

- ☒ Business/Nonprofit
- ☐ Education
- ☐ Health Care

3. Official Contact Point

Designate a person with in-depth knowledge of the organization, a good understanding of the application, and the authority to answer inquiries and arrange a site visit, if necessary. *Contact between the Baldrige Program and your organization is limited to this individual and the alternate official contact point. If the official contact point changes during the application process, please inform the program.*

☐ Mr. ☐ Mrs. ☒ Ms. ☐ Dr.

Name	Michelle Blanton
Title	Director, Performance Excellence
Mailing address	☒ Same as above
Overnight mailing address	☒ Same as above *(Do not use a P.O. box number.)*
Telephone	615-555-4586
Fax	615-555-3958
E-mail	michelle.blanton@CollinTech.com

4. Alternate Official Contact Point

☐ Mr. ☐ Mrs. ☐ Ms. ☐ Dr.

Name	Jeffrey Mercier
Telephone	615-555-2618
Fax	615-555-3976
E-mail	jeff.mercier@CollinTech.com

5. Release and Ethics Statements

Release Statement

I understand that this application will be reviewed by members of the Board of Examiners.

If my organization is selected for a site visit, I agree that the organization will

- host the site visit,
- facilitate an open and unbiased examination, and
- pay reasonable costs associated with the site visit (see the *Award Process Fees* page on our Web site [http://www.nist.gov/baldrige/enter/award_fees.cfm].)

If selected to receive an award, my organization will share nonproprietary information on its successful performance excellence strategies with other U.S. organizations.

Ethics Statement and Signature of Highest-Ranking Official

I state and attest that

(1) I have reviewed the information provided by my organization in this award application package.

(2) To the best of my knowledge,

- this package contains no untrue statement of a material fact and
- omits no material fact that I am legally permitted to disclose and that affects my organization's ethical and legal practices. This includes but is not limited to sanctions and ethical breaches.

Georgio Michelli	5/13/13
Signature	Date

☒ Mr. ☐ Mrs. ☐ Ms. ☐ Dr.

Printed name	Georgio Michelli
Job title	Chief Executive Officer
Applicant name	Collin Technologies
Mailing address	☒ Same as above
Telephone	615-555-8162
Fax	615-555-3932

GLOSSARY OF TERMS AND ABBREVIATIONS

Glossary of Terms and Abbreviations

AB	Advisory Board
ACE	Association of Collin Employee Owners
ADC	Collin Administration Center
AED	Automatic Electronic Defibrillator
BAT	Best Available Technology
BGA	Ball Grid Array
BSC	Balanced Scorecard
CBDP	Chemically Bonded Deposition Process
CCA	Collin Customer Advocate
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CI^2	Continual Innovation and Continuous Improvement
CInvO	Chief Innovation Officer
CIO	Chief Information Officer
CMP	Career Management Program
CNet, CollinNet	Collin Integrated Network Application
COO	Chief Operating Officer
Cpk	Process Capability Index
CPM	Career Path Management
CRM	Customer Relationship Management
CRO	Chief Research Officer
CSC	Collin Supply Chain
DART	Days Away, Restricted, or Transferred
DFM	Design for Manufacturability
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EEOC	Equal Employment Opportunity Commission
EHS&S	Environmental Health, Safety, and Security
EIC	Electronics Industry Connection
EMS	Electronic Manufacturing Services
EO	Employee Owner
EPA	Environmental Protection Agency
ERT	Emergency Response Team
ESOP	Employee Stock Option Plan
FMEA	Failure Mode and Effects Analysis
HDLW	Higher Density and Lower Weight
HR	Human Resources
HRC	Human Resources Council
IIE	Institute of Industrial Engineers
IS	Information Systems
ISO	International Organization for Standardization
IT	Information Technology
ITAR	International Traffic in Arms Regulations
ITS	Information Technology Systems
JIT	Just-In-Time
KPCs	Key Product Characteristics
LAN	Local Area Network
LSS	Lean Six Sigma
LT	Leadership Team
MSDS	Material Safety Data Sheets
MTTF	Mean Time to Fail
NEOO	New Employee Owner Orientation
OPC	Collin Operations Center
OSHA	Occupational Safety and Health Administration
OTD	On-Time Delivery
OTJ	On the Job
PDCA	Plan Do Check Act
PE	Personal Electronics
PPM	Parts per Million
PPP	Perpetual Planning Process
PTH	Plated-through-Hole
PTO	Paid Time Off
QFD	Quality Function Deployment

R&D	Research and Development
RDC	Collin R&D Center
RIR	Recordable Incident Rate
RoHS	Restriction of Use of Hazardous Substances
RTIA®	Real-Time, Integration, Advancement
SCADA	Supervisory Control and Data Acquisition
SCPE	State Center for Performance Excellence
SDEC	State Department of Environment and Conservation
SG-BJV	State Government and Business Joint Venture
SMEs	Subject-Matter Experts
SMS	Short Message Services
SPC	Statistical Process Control
SPP	Strategic Planning Process
SWOT	Strengths, Weaknesses, Opportunities, and Threats Analysis
UL	Underwriters Laboratories
UCE	U.S. Council for Electronics
USEO	U.S. Employee Owners
VOC	Voice of the Customer
VOCs	Volatile Organic Compounds
WAN	Wide Area Network
WEEE	Waste Electrical and Electronic Equipment Directive

ORGANIZATIONAL PROFILE

Preface: Organizational Profile

P.1 Organizational Description

P.1a

Collin Technologies (Collin), a high-tech manufacturer in the interconnect industry, was founded in 1971 in Nashville, Tenn., by entrepreneur Ed Collin. It applied for the Malcolm Baldrige National Quality Award in 1992 and again in 1999 and received a site visit. The feedback reports were extremely valuable, and all high-priority improvement opportunities were addressed. Collin participated in the State Center for Performance Excellence (SCPE) award process multiple times and received the Excellence Award in 2012.

In 2005, the company made some key strategic changes in response to anticipated changes within the multilayer printed circuit board market. Candice Trobaugh, Ph.D., chose to leave the chief executive officer (CEO) position and head up a new Contract R&D business unit. The Contract R&D group is responsible for ensuring that customer needs continue to be met using leading-edge technology. For example, as the industry approaches the limit for transistor density, research partnerships with three leading universities are exploring options for replacing silicon chips. Dr. Trobaugh's passion for nanotechnology made her the obvious choice to lead this business. Georgio Michelli was appointed CEO in addition to COO during this transition.

In 2006, a strategic decision led to divestiture of manufacturing facilities in Koga, Japan, and Valbonne, France. The funds from these sales were invested in facility expansion in Nashville, including laboratory space for the Contract R&D group.

Recognizing the need to create tighter density and smaller circuitry, Collin created the capability to produce rigid-flex circuits to meet the needs of the emerging personal electronics markets. Dan Tamayo was appointed COO upon divestiture of the Japan facility.

Collin expanded its Employee Stock Option Plan (ESOP) in 2007. All stock is now owned by active employees, with no individual owning more than 50%. Collin initiated a robust transition process to ensure that departing employees are bought out by the company in preparation for redistribution among current employee owners (EOs).

P.1a(1)

Collin is a manufacturer of single-, double-, and multilayer printed circuit boards, as well as rigid-flex circuits. In addition, Contract R&D services are available. Collin provides all products and services directly to its customers because it determined that distribution channels frequently in use in the industry will not sustain the levels of customer engagement that it has achieved.

Multilayer printed circuit boards represented the major share of products until 2008, when the need for smaller, lighter solutions increased. Maintaining a diverse profile (Figure P.1-1) remains in Collin's best interest while Contract R&D builds market share.

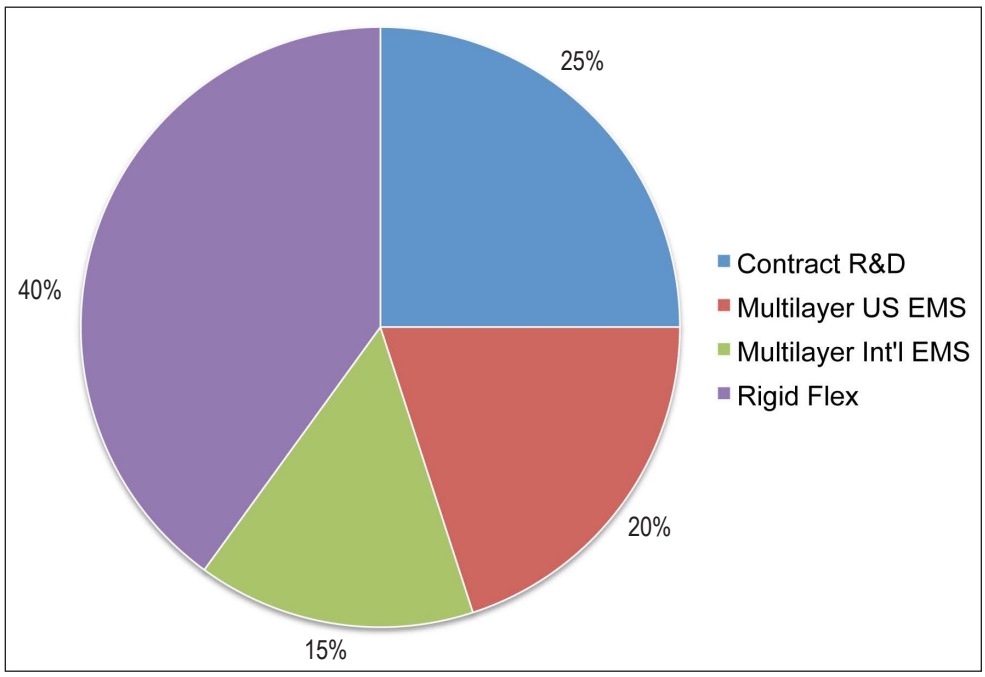
P.1a(2)

The Collin culture is one of family. EOs are treated fairly and trust one another. As an owner, each individual actively contributes to the company's success. This results in a highly enthusiastic workplace.

Collin optimizes profit over revenue by providing high-technology products with rapid response and exceptional quality and reliability. The Collin vision, mission, and values (Figure P.1-2) are guiding principles for decision making at all levels of the company. The company redefined its vision, mission, and values during the 2001 planning cycle and revisits these statements annually. Core competencies emerged in the 2009 planning cycle.

The Collin EOs embrace diversity in the broadest terms. The technical base represents

Figure P.1-1: 2013 Product Mix



disciplines such as mechanical, chemical, electrical, material, industrial, and manufacturing engineering, as well as information systems (IS). Senior leaders, managers, and supervisors are included in the technical base. Technical and factory EOs are not represented by any bargaining units. Support EOs were reduced in number as a result of Lean process improvements but were retrained and moved into factory positions associated with the growth in R&D. Every member of the workforce is an invested owner of the company through the ESOP.

P.1a(3)

The demographics of the workforce and EO requirements are shown in Figure P.1-3.

Health and safety requirements for factory EOs are associated with the safe handling of various chemicals and materials. All EOs attend annual refresher training on Material Safety Data Sheets (MSDS) and required behavior around chemicals. The removal of heavy metals over the past ten years has eliminated the need for a personal health monitoring program. EOs are trained in safe material handling techniques, which is especially important when handling the rolled materials used in flex circuitry. Proper lifting techniques and use of personal protective equipment are also topics in the safety program.

P.1a(4)

Collin's expansion in 2006 resulted in a three-building campus. The Collin Administration Center (ADC) houses administration, RDC is the R&D center, and OPC is the operations center. All three buildings are connected via ground-floor corridors. RDC assets include standard laboratory equipment, leading-edge microscopy, and proprietary prototype equipment dedicated to fine-line imagery. The entire RDC building is a clean-room facility, with various areas ranging from Class 100 (ISO 5) to Class 1 (ISO 3). RDC also houses the in-process destructive testing laboratory.

The OPC building is considered a Class 100,000 (ISO 8) clean room, with various work areas designated Class 100 or Class 10 (ISO 4) clean rooms. Production lines are automated for imaging, etching, striping, plated-through-hole (PTH), pattern

Figure P.1-2: Collin Vision, Mission, Values, and Competencies

VISION
Lead Circuitry Innovation for the Future
MISSION
• Engage customers of interconnect circuitry with the products for tomorrow • Provide EOs with a *Best Career Location*® and superior return • Sustain society and the environment • Enhance our communities
COLLIN Cs (values)
Collaboration: we are one team pursuing one vision **Commitment**: we deliver on our promises; living our values through integrity, trust, and respect **Creativity**: we invest in continuous innovation **Courage**: we are courageous in our pursuit of business excellence **Colossal**: we are proud of our business performance compared to others
COLLIN COMPETENCIES
Ingenuity: leading advancements in the industry, especially in the areas of engineering and R&D ***Expertise:*** understanding our customer's business and exceeding expectations through robust operational processes ***Exceptional People:*** building lasting relationships with all customers and stakeholders through the Personal Touch

Figure P.1-3: Workforce Demographics

Workforce Demographics				
Employee Group			**Educational Requirement**	
Technical	120	28%	Engineer	B.A./B.S.+
			Technician	Associate
Factory	228	54%	Supervisor	B.A./B.S.+
			Other	H.S./GED+
Support	77	18%	All	H.S./GED+

Diversity		
	Collin	**Community**
White	64%	74%
African American	19%	15%
Hispanic	10%	6%
Other	7%	5%

Gender	**Male**	**Female**
	49%	51%

EO Requirements
"I feel safe and secure on the job."
"I take pride in being an owner of Collin."
"I make a difference on the job."
"I have opportunities to learn and advance."
"I have competitive wages and benefits."

plating, and testing. Additional production areas support ball grid array (BGA) and micro ball grid array (µBGA), assembly, board repair, and conformal coating to protect the circuits. Most testing is completed in-process using flying probe testing or testing specially designed test patterns adjacent to the circuitry. When needed, destructive testing is conducted and Collin utilizes RTIA® (real-time, integration, advancement) technology developed by a previous Baldrige Award recipient to achieve cloud-based communication, control of logistics management, and business-to-business communication through the CollinNet or CNet. All information technology (IT) services are housed in the ADC. This includes the Supervisory Control and Data Acquisition (SCADA) system that provides automated controlling of production equipment.

P.1a(5)

The regulatory environment in which Collin must comply is continually evolving. Collin maintains quality system certification to ISO 9001:2008 and AS 9100 (Aerospace), and environmental certification to ISO 14001:2004. It also follows the guidance provided in ISO 26000 for social responsibility. RDC is compliant with ISO/TR 12885:2008 Nanotechnologies–Health and Safety. All facilities are ITAR-, RoHS-, and WEEE-compliant and UL-approved. Collin has removed heavy metals from production processes and conflict metals in compliance with the July 2010 U.S. prohibition of ores and metals used to finance the conflict in the Republic of Congo or adjoining countries.

Collin is a member of Electronics Industry Connection (EIC). EOs are active in EIC committee work, and Collin received recognition from EIC in 2012 for its contributions. Testing and inspection EOs are certified to EIC-A-600, EIC 6012, and EIC-A-610. Solder process EOs are certified to J-STD-001, and repair station EOs are certified to ICP 7711 and EIC 7721.

Collin complies with state and national OSHA requirements and has been recognized with (1) the SHARP award in 2009 and (2) the VStar award of the OSHA Volunteer Protection Program for small businesses in 2011.

Collin has worked with the State Department of Environment and Conservation (SDEC) and achieved multiple Environmental Stewardship Awards: 2002 for Industrial Pollution Prevention, 2006 for Hazardous Waste Management, and 2009 for Energy Leadership. Collin also has been recognized in the EPA's Waste Wise Program with Gold Achievement in 2009 for Recycling in the Workplace and in 2011 for Industrial Materials Recycling.

Collin continues to comply with U.S. Department of Labor laws, is compliant with General Accounting Practices, and follows the guidelines of Sarbanes-Oxley.

P.1b

P.1b(1)

Collin's organization structure is by design relatively flat. An independent Advisory Board (AB) is led by company founder and Chairman of the Board Ed Collin. The company appoints trustees for the purpose of representing EO interests in the AB's fiduciary review of the ESOP. The CEO reports directly to the executive committee of the board. Senior leaders report to the CEO. All other EOs either report to senior leaders or report to managers, who in turn report to senior leaders. Senior leaders comprise the Leadership Team (LT). Most EOs are also part of a functional team, with the team leaders rotating at prescribed frequencies.

P.1b(2)

Collin's customers are essential to sustaining the company. They are grouped by business segment, as shown in Figure P.1-4. Stakeholders are defined in alignment with the company mission and include EOs (requirements shown in Figure P.1-3), customers, Partner Suppliers, electronic manufacturing services (EMS) partners, and the greater Nashville community.

Collin has an exclusive contract with GBN Corp. to design and manufacture product for a confidential new aircraft known as Project D, which has the potential to fill 80% of current production capacity for the duration of the manufacture of

Figure P.1-4: Market and Customer Expectations

Business Segment and Product Use	Major Customers	Expectations					
		Reliability	HDLW	Pricing	Support	OTD	PPM
Aerospace: Cockpit and navigation instrumentation, flight-control modules	GBN Corp.	#1	#2	#6	#3	#5	#4
Personal Electronics: Cell and satellite phones, tablets and microcomputers, cameras, toys	NexTee MEE2 Sleeker	#4	#1	#2	#6	#3	#5
Contract R&D: Circuitry design assistance, development of fine-line imagery, production processes	Valley Tech. Newton Computers	#3	#2	#5	#1	#6	#4

Numbered by priority

this aircraft. Limited production would also be sustained for maintenance parts that are replaced well before the mean time to fail (MTTF) for the component. Collin measures six major customer requirements: circuitry reliability, higher density and lower weight (HDLW) circuits, competitive pricing, customer support for the life cycle of the product, on-time delivery of product (OTD), and extremely high quality (Figures 7.1-1, 7.1-2, and 7.1-3). The priorities of these requirements vary by market as shown in Figure P.1-4.

The Nashville community looks to Collin to provide secure employment opportunities, to be a role-model steward of air and water quality, and to be a partner in the business community, providing leadership in numerous civic organizations and supporting community development activities.

P.1b(3)

Partners and suppliers are valuable members of the Collin Supply Chain (CSC). More than 70 Partner Suppliers, who have demonstrated ongoing capacity and capability to meet Collin's rigorous qualification requirements, include providers of substrate materials, process chemicals, custom-imaging equipment, technical support for automated processing equipment, calibration services, and special testing services. Vendors are providers of commodity products.

Collin has two special EMS partners that provide high-volume lamination, complex population of circuits, and circuit assembly. UY Electronics is a small woman-owned business that is used when compliance with the Buy American Act is required. When competitive pricing is a key requirement, Collin partners with Thai EMS. The rigor of the Collin partner qualification was proven during the flooding in Thailand in November 2010. Thai EMS and many competitors' facilities were destroyed or heavily damaged. Thai EMS was able to restore full operations in February 2012 while all other EMS facilities remained inoperable for an additional 4–7 months. Due to the strength of its partnership with Collin, UY Electronics increased capacity to ensure that all Collin products requiring outsourced EMS shipped on time.

Partner Suppliers are involved in the entire design process to ensure design for manufacturability and testing. CNet is the primary conduit for transferring information between Collin and its partners and suppliers. Additional teleconference and videoconference options enable real-time information transfer across the entire CSC. CSC value requirements are (1) the ability to innovate technology with Collin, (2) high quality and reliability of products, (3) use of leading-edge technology, and (4) price. These requirements are necessary to ensure that the CSC contributes to Collin's competitiveness.

P.2 Organizational Situation

P.2a

P.2a(1)

Collin's competitors on the macro scale are international conglomerates that have grown through mergers and acquisitions. In the past seven years, SuperFlex has acquired many of Collin's competitors or is now the parent organization of other companies that have acquired competitors. There remain a handful of American companies capable of manufacturing circuits with all U.S. content. That niche market is roughly split equally since Collin developed rigid-flex capabilities. Competitors include USA Circuits, Ace Circuitry, and Ridgeford Technology. Desiring superb customer engagement, Collin leverages its high levels of customer loyalty to establish exclusive agreements with key customers to sustain its share of the market.

P.2a(2)

Collin created RDC specifically to position itself to secure early design work associated with the innovative changes in electronics. Copper has been the interconnect material of choice for electronic circuitry since the beginning of the Computer Age. Collin has also relied on silicon chips; however, the ability to double the number of transistors on a silicon chip will soon reach its full capacity according to an EIC report. RDC is focusing on research to replace copper with other conductive materials such as atomic-sized carbon fiber tubes, and it is exploring use of photons rather than electrons. Fiber optics have already recognized the ability of photons to carry data more efficiently. By being on the ground floor of such collaborative research with the capability to prototype production requirements, Collin intends to redefine its niche market.

P.2a(3)

As a member of EIC and participant in its many committees supporting the interconnect industry, Collin has the opportunity to participate in monthly surveys and to receive industry reports free or at a reduced rate. This consortium of data provides valuable world-wide industry comparisons. Collin accesses reports on industry trends, the book-to-bill ratio, and annual salary and compensation studies for senior leaders and production-level employees.

Other sources of comparative data include information from Baldrige Award recipients gathered from online sources and at the annual Quest for Excellence® conferences. Collin scans information available through the *Manufacturing Sector* Best Plant Program online publications and *Best Career Location*® program. Every three years, Collin contracts with an external provider for a customer engagement survey to validate its internal survey and provide normative data. The EO Survey (workforce engagement) is a third-party survey with normative data for comparison purposes. Collin also tracks information available from U.S. Employee Owners (USEO) and the ESOP Association for performance comparisons.

P.2b

Collin enjoys a number of strategic advantages and is working to address strategic challenges, as shown in Figure P.2-1.

P.2c

Collin received recognition for having a robust strategy for performance improvement in both its 1992 and 1999 Baldrige

Figure P.2-1: Strategic Advantages and Challenges

Strategic Advantages	
SA-1	**Business reputation** for prompt delivery of high-quality, high-reliability interconnect solutions
SA-2	**Responsiveness** to inquiries and history of success with quick-turn orders
SA-3	**"Personal Touch"** when ordering and delivering product
SA-4	**Intelligent risk** analyzed for decision making related to new process or product development, ensuring that the risk of not developing doesn't outweigh the risk of proceeding
SA-5	**Capable processes** to reduce the likelihood of nonconforming product with fine lines (1 mil. trace and 1 mil. spacing)
SA-6	**Level 2 Sustainability** as defined by the Four-Level Sustainability Trend to eliminate use of hazardous materials, and encourage design and development of greener processes with less utility usage, more recycling of by-products and equipment, and less waste
SA-7	**EOs** enjoy *Best Career Location*® and ESOP, and they hold certifications for competencies related to their work
Strategic Challenges	
SC-1	**Industry growth by acquisition** is the trend of the decade and the reason Collin has become 100% employee-owned
SC-2	**Expanding customer R&D services** while supporting current production requirements
SC-3	**HDLW** customer needs require finer lines and spacing (10–50 µm), which may require capital equipment expenditures to achieve capable processes
SC-4	**Level 3 Sustainability** requires achieving the shift to grow R&D in order to promote sustainable/green manufacturing (longer-term challenge)
SC-5	**Engaging EOs in sustainability** requires their full support and promotion of environmental sustainability
SC-6	**Leadership development** of all EOs to develop their capacity to lead regardless of their current positions or titles

feedback reports, and it made numerous improvements. In early 2012, the company made a concerted effort to integrate performance improvement and sustainability systems after an EO brought an article from an ASQ publication to senior leaders. The integrated system has two main components: *continual innovation* and *continuous improvement* (CI^2). The distinction between the two concepts was an important learning for the company. Continual innovation implies a constant state of alertness and vigilance to ensure that change makes sense. This requires strategic choices of improvement made by leadership within the culture of intelligent risk taking. Continuous improvement implies an uninterrupted series of opportunities, with senior leadership guiding the company along the path of innovation through the removal of obstacles.

This integrated system aligns with the Plan-Do-Check-Act (PDCA) framework that underpins many of the key processes. The framework has created changes to the trigger questions for analyzing data during process design and performance review processes. The new questions address the integration of sustainability into the analysis process (Figure 6.1-3).

All processes undergo annual evaluation and improvement during the internal audit process that Collin executes for ISO 9001 certification. The checklists guiding these audits contain questions for process owners to verify that process has been reviewed and gaps addressed through a CI^2 process utilizing Lean Six Sigma (LSS) or other improvement techniques as appropriate.

RESPONSES ADDRESSING ALL CRITERIA ITEMS

Category 1: Leadership

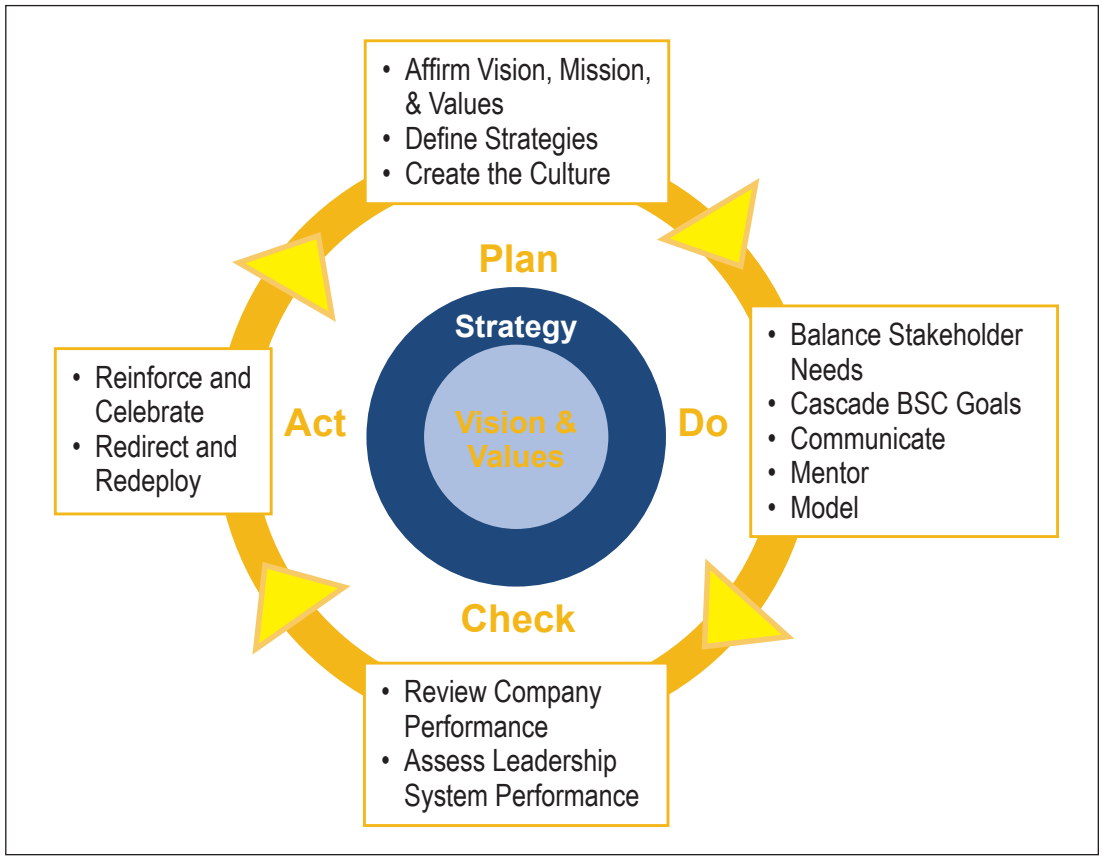
1.1 Senior Leadership

1.1a

1.1a(1)

In 1995, Candice Trobaugh and the LT spent one week together in Memphis analyzing Collin's existing strengths, weaknesses, and overall success inhibitors. An analysis process was used to define a set of core values, overall company mission, and strategic direction. Over the years, leadership processes were developed, refined, and integrated with the Strategic Planning Process (SPP). The vision and values are evaluated annually during the SPP to ensure that these critical messages are actively defining how Collin operates and its future direction. The vision, mission, and values (Figure P.1-2) were redefined in 2001 during a strategic thinking exercise to ensure that the vision was inclusive enough to encompass the technological evolution of circuitry and interconnect solutions. The vision and values have been affirmed annually since then. The mission was revised in 2009 to modify "Supporting key communities" to "Sustaining society and the environment" and "Enhancing our communities." The change was made to more directly align with changes Collin was committed to making in social responsibility and sustainability.

Figure 1.1-1: Collin Leadership System



The LT deploys the vision and values through the Collin Leadership System (Figure 1.1-1), communication processes (Figure 1.1-2), and the collective role-model behavior of LT members. New Employee Owner Orientation (NEOO) is led by a member of the LT, who tells the story of Collin's vision and mission, as well as the Collin Cs (values) and Collin Competencies. Partner Suppliers attend "Collin Is Committed" sessions as an introduction to doing business with Collin. Partner Supplier contracts also reinforce the vision, values, and mission. Customers learn the Collin story during early communication with Collin Customer Advocates (CCAs) who demonstrate how the company vision, values, and mission align with their interconnect needs.

Since 2008, each month the LT identifies the most appropriate "sound-byte" messages surrounding the vision, mission, or values. These messages are now crafted word for word to ensure consistency in presentations by individuals. For example, after the mission was restated, the byte was "I sustain society by . . . ," which allowed each member of the LT to describe his/her personal efforts as examples and then to ask EOs what actions they might be taking.

1.1a(2)

The Collin LT is personally committed to legal and ethical behavior, and EOs hold the same commitment. The Collin C of commitment demands that Collin deliver on all promises with integrity. The message of the importance of integrity starts with NEOO and "Collin Is Committed" sessions led by the LT. One recent byte was "We live with integrity." LT members spent the month providing examples of EO actions that most appropriately reinforced this Collin C. The byte was active the same month that all EOs received an e-mail from the CEO inviting them to enroll in the

annual ethics refresher course. This online course in Collin U retains records of completion. Reminders are sent to individuals who do not complete the refresher in a timely manner. The goal is 100% completion per year and has been attained for the past eight years.

1.1a(3)

From 2006 to 2007, the leadership model was in transition. The fundamental reason for making the changes was to strengthen Collin, creating a company for the future for its EOs. Considerable efforts had been focused on design and production processes. The LT needed to use the same tools to identify the processes that EOs must use to sustain the organization. The Collin Leadership System was defined by mapping the various responsibilities of leadership to the PDCA improvement cycle. One LT member noted that this was when leadership became consciously competent.

The Collin Leadership System is integrated with strategic planning. The measurable strategic objectives are clearly aligned with Collin Competencies, its vision and values, and its strategic challenges and advantages. The associated action plans and related measures are cascaded through business segments, departments, and teams to individuals. Every EO has a clear line of sight from his/her area of responsibility and performance to company success. This enables each EO to invest in continual improvement and continuous innovation in his/her courageous pursuit of business excellence, one of the Collin Cs.

Monthly performance reviews, initiated in 2010 as a refinement to the quarterly reviews, are conducted to determine current progress compared to projected performance. The frequency of this review allows the LT to more precisely determine the timing of changes that the agile work system is able to accommodate.

Organizational and personal learning are as common as the air EOs breathe. The PDCA improvement model underpins virtually every process. Collin has been diligent in establishing knowledge management systems that aggregate information for easy analysis and recall. These systems virtually eliminated the need to reinvent the wheel. Organizational lessons learned are discussed in weekly meetings and department meetings and are a standing agenda item for the weekly LT meetings. Personal learning is equally valued. The Career Path Management (CPM) Process identifies the personal learning desired by each EO and tracks accomplishment of that learning.

The LT holds itself accountable for personal learning. In 2008, the CEO, COO, and chief research officer (CRO)/chief innovation officer (CInvO) worked together to create development processes for the AB, LT, and emerging leaders within the company. Working with a local university, Collin created development sessions that are held annually for the AB and quarterly for the LT and follow a two-year cohort model for the emerging leaders. Emphasis is on the roles of leaders as opposed to those of managers, to assist managers in letting go of daily tasks and embracing the roles of leader, mentor, and communicator. Sessions are co-led by an external facilitator and a member of the LT.

Collin's leaders have long recognized that the company's success starts and ends with its customers. Strategic objectives and action plans, as well as the Collin Cs, ensure consistent delivery of a positive customer experience. One of the strategic advantages that Collin has developed is a Personal Touch for its customers. The acquisitions the industry underwent in recent years resulted in large multinational corporations that frequently act as brokers between customers and the supply chain. Consequently, customers may have no idea how or where their product is manufactured. Each Collin customer is assigned a CCA following a customer inquiry to build a personal relationship and provide a single point of contact. In addition, a member of the LT establishes a relationship with each customer based on common interests. Customers reward Collin for its Personal Touch with repeat business.

The conscious shift to continual improvement and continuous innovation (CI^2) was embraced by the LT as a means to reinforce an environment for innovation and intelligent risk taking. Such an environment is conducive to achieving strategic objective #3 (Figure 2.1-5) and leadership development. This environment also enables organizational agility.

Each LT member is responsible for mentoring a minimum of one emerging leader. Annual succession planning starts with line supervision and continues upward to the chairman of the board. One result of succession planning in 2010 was a recognized need for expanding the emerging leader system to include preparing EOs for rotating team leader roles.

1.1b

1.1b(1)

One of the reasons Collin determined that it was prudent to divest of its international facilities was in an effort to improve communication. While an array of electronic communication was in place, the Personal Touch that customers found of value was missing within the workforce. The LT is committed to viewing the "Do" portion of the Collin Leadership System as the most critical day-to-day activity. Viewing communication as a process enabled the LT to expand upon the types of communication that it uses to most effectively meet the needs of the EOs, customers, Partner Suppliers, and the Nashville community.

A formal communication plan is utilized for all key decisions. This was a change from the norm that the LT executed in response to feedback in the EO Survey. EOs noted that messages were not aligned between LT members, and while similar at a macro level, different actions were based on the individual bias a LT member may inadvertently present. The simple, one-page communication plan identifies the sound byte, rationale for the message, various audiences for the message, delivery methods for each audience, and LT

Figure 1.1-2: Methods of Communication

Vehicle	Frequency	Audience
Open-Door Policy	D	EO
C Note E-newsletter and paper	M	EO, C, S, P
LT Walkabouts Leaders spend 1 hour/day in production areas	D	EO
Ask the LT E-bulletin board accessible from CNet and CollinTech.com	U	EO, C, S, P, N
LT Byte Leader communication of important messages	U	EO, C, S, P
Planning Retreat	A	EO
CNet Feature Collin intranet	U	EO
Trading Tasks LT members trade jobs with another EO for 1 day	M	EO
e-Blast Mass e-mail communication	U	EO, C, S, P, N
EO Forum Owner meeting	Q	EO
Bulletin Boards	U	EO
B-room Ditty Strategically placed messages in the restrooms	U	EO

Vehicle	Frequency	Audience
LT Meetings	W	LT
Staff/Dept. Meetings	W	EO
CollinTech.Com Public Internet site	U	EO, C, S, P, N
Collin Customer Communique Customer e-newsletter	Q	C
Partner Supplier Report Supplier and partner e-newsletter	Q	S, P
"Collin Is Committed" Leader-led orientation	U	S, P,
AB Meetings Governance structure	M	AB, LT, EO
Collin's Comment AB blog	M	EO
Michelli's Minute CEO blog	W	EO
Tamayo's Theory COO blog	W	EO
Trobaugh's Trumpet CRO/CInvO blog	W	EO
Town Hall Meetings Community meetings	U or SA	EO, C, S, P, N
SCPE Presentations	A	EO, C, S, P, N

= two-way communication

D = daily, W = weekly, M = monthly, Q = quarterly, A = annually, SA = semiannually, U = upon demand

EO = workforce, LT = Leadership Team, AB = Advisory Board, C = customers, S = suppliers, P = partners, N = greater Nashville community

member responsible for each delivery. At least one method of delivery per audience must enable two-way communication. Improvement was noted in the subsequent EO Survey, and it has become the norm for communication. A list of the various types of communication is shown in Figure 1.1-2.

New in 2012 was an industry-wide online Q&A forum called InterConnect developed by Collin and other U.S.-based EIC member companies. This forum is monitored as needed or a minimum of quarterly by rotating members of the LT. When appropriate, Collin responds to the questions to share its organizational knowledge.

Formal and informal recognition is provided by LT members to EOs who embody the Collin Cs and mission, ranging from a personal "Well done!" to handwritten notes, recognition in the *C Note* for sustained high performance by an EO team, or an EO Excels award personally presented by founder Ed Collin.

1.1b(2)

Collin's focus on action begins with the cascade of strategic objectives, action plans, and scorecard measures to individual EOs. All LT members spend a minimum of one hour a day on a walkabout of production and research areas sharing the current sound byte and listening to concerns. They also spend one day a month assisting an EO doing his/her job. These

Figure 1.1-3: LT Monthly Review Schedule

Week	Review Subjects
1	**Customer Performance** • Current customer engagement and satisfaction • Pipeline for future business • Options for new markets or products
2	**Operations and Financial Performance** • Product quality levels • Process efficiency • CI² Teams status • Month-end financials
3	**Workforce Performance** • Safety performance • EO engagement • EO Excels (recognition program) • EO transition
4	**Strategy Execution** • Strategic outcome measures (top-level BSC measures) • Key action plan outcome measures • Course adjustments • Resource balancing
5	**Leadership Development and Leadership System Refinement** (Once a quarter)

casual conversations often result in a keener understanding of the intricacies of each other's role in contributing to company success.

CCAs make a point of sharing feedback they receive from customers with the appropriate EOs. This link to the voice of the customer (VOC) was added in 2011 in order to strengthen EO integration of customer needs in the production environment.

The measurement system and frequent performance reviews provide each EO, team, department, and business segment with data and information to analyze performance and to identify immediate corrective and preventive actions, continuous innovation, or continual improvement.

The LT tackled performance review as a process improvement in 2010 and refined its monthly meeting practice. The conscious decision was made to provide more stakeholder focus during reviews. A monthly schedule of reviews at LT meetings was established (Figure 1.1-3).

A standing agenda question at the end of each review is "How do the actions we discussed today impact our ability to meet the needs of other stakeholders?" This opens the discussion of balance or imbalance due to competing needs or priorities. As needed, an approach similar to a force-field analysis is used to rebalance resources and/or priorities, and the appropriate Stakeholder Team chair is contacted.

Figure 1.1-4: 2013 LT Stakeholder Team Assignments

LT Member	Stakeholder Responsibility
Candice Trobaugh	Customers
Fred Fischer	Community
Billie Corrigan	EO as Shareholder
Michelle Blanton	EO as Workforce
Frank Malone	CSC
Dan Tamayo	EMS Partners

Teams are assigned to each stakeholder group (Figure 1.1-4). Teams are representative of all levels and areas of the company. These teams meet biweekly to work on annual improvement objectives related to their assigned stakeholder group. Each team is led by a senior leader.

Members serve for 15 months, with overlap in the fourth quarter to ensure seamless transitions. When the LT identifies that a change is needed to balance the needs of other stakeholders, the appropriate Stakeholder Team takes ownership of the change. Teams complete action plans and a communication plan for the change before executing or communicating the change.

1.2 Governance and Societal Responsibilities

1.2a

1.2a(1)

Collin has strengthened its governance system since its last Baldrige application. By staying cognizant of changes to the Baldrige Criteria, Collin identified the value that an external advisory board would provide to the company. In 2004, the LT and the company founder Ed Collin established rudimentary criteria for the creation of an advisory board. The board needed balanced expertise in the areas of fiduciary responsibility in an ESOP, interconnect technology and related research, and marketing. The initial AB was selected to represent these areas, and quarterly reports were provided by the LT in the early years.

In 2006, a formal process to disclose potential conflicts of interest and improve the transparency of AB member selection was created. Each candidate for the AB must complete a rigorous questionnaire for disclosure before being recommended by the ad-hoc nominating committee. In 2007, a formal committee structure was added. The executive committee oversees CEO compensation and board evaluation and development. The finance committee oversees fiscal accountability, including selection of an external auditor and independence of internal audits (financial and ISO). It monitors observations when there are no findings in these audits to ensure sufficient rigor in both internal and external audits. In 2009, the AB was broadened to include expertise in corporate sustainability and a representative from academia. The sustainability committee was created

to support company efforts, has oversight of protection of stakeholder interests, and conducts benchmarking studies for the company. In 2011, the role of the executive committee was broadened to oversee succession planning for the entire LT. Competencies are reviewed to ensure that leadership development courses prepare emerging leaders appropriately.

The weekly review process used by the LT (Figure 1.1-3) rolls up to a monthly Board Report and has established accountability for management actions.

1.2a(2)

All EOs, including the CEO, COO, and CRO/CInvO, participate in the annual CPM process. The 360-degree process provides feedback from subordinates, peers, and superiors on an individual's performance. This information is analyzed along with the results from the most recent EO Survey—pertaining to communication; understanding of the vision, mission, and values; and trust in company leadership and supervision—to identify improvements needed in the Collin Leadership System during the quarterly Leadership Development and Leadership System Refinement meeting. This quarterly session addresses individual leader development that is either part of the leadership development curriculum or an identified area of concern. The Collin Leadership System undergoes a PDCA review in each of these sessions. An improvement driven by this process was to improve communication among the AB, LT, and EOs by creating blogs written by the chairman of the board, CEO, COO, and CRO/CInvO highlighting recent activities and topics of interest. In addition, the AB was added to the CPM in 2010 as a result of a leadership system PDCA.

The executive committee of the AB is responsible for CEO compensation. The determination is made based on company performance, management accountability, individual leadership performance, and customer feedback.

The AB undergoes an annual cycle of improvement using a modified version of the Process Analysis Questions (Figure 6.1-3). In addition to the improvements outlined in 1.2a(1), the AB is currently developing an individual assessment based on 360-degree feedback.

1.2b

1.2b(1)

Collin's processes and products, if not properly controlled, could have a major impact on the current and future state of the community. These impacts relate to

1. Public health (workplace and community risks)
2. Environmental improvement (air and water pollution)
3. Waste management (landfill, control of solid waste, and recycling)
4. Energy conservation

Strict control of these processes enables Collin to easily comply with its various regulatory agencies. Collin is subject to frequent audits by the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Air Quality Management District, and HazMat Affairs Office, as well as other city, county, and state agencies. Over the last 24 years, no violations or sanctions have been imposed on the company, and only one minor fine in 2008 was associated with malfunctioning equipment at the time of an air quality assessment. To maintain this record and address future societal impacts, Collin has specific Risk-Management Teams. These teams identify potential exposures, define or refine control practices, establish measures, and set stretch targets to drive proactive improvement, not only within the company but also with the regulatory agencies. Figure 1.2-1 identifies some of the risks, practices, measures, and targets associated with these areas.

The Public Health Team (led by Shirley Ogrysko, director, health, safety, and security) is chartered to work with OSHA and all public health organizations in the community. Her team personally audits all buildings for maintenance of MSDS, hazardous material exposures, and potential safety or health violations. The team also works closely with the state regulatory board and many insurance carriers, often accompanying them on routine audits. Improvement goals are set in conjunction with the local fire department and emergency planning committee. Shirley is an active member of the local emergency planning committee and serves as a consulting member to the State Department of Emergency Planning. In this role, she not only becomes aware of future criteria but also has a major part in setting the future direction of public health and workplace safety requirements. Within Collin, Shirley oversees the activities of the Environmental Health, Safety, and Security (EHS&S) Team, HazMat Team, and Emergency Response Team (ERT). The Red Cross certifies every ERT member to administer first aid, use the automatic electronic defibrillator (AED) unit, and handle workplace trauma incidents. Fred Fischer, Ph.D. (chief technical and environmental officer), leads the Environmental Improvement Team. The team's approach used technology to advance Collin's position in the area of environmental stewardship. Fred and his team have set the standard for excellence in the area of workplace environmental controls. Fred is no stranger to environmental programs. He has been an active member of "A Green Society" for the last 17 years and currently chairs the regional "Better Air for Factories" subcommittee for the state Air Quality Management District.

Efforts were directed towards eliminating lead from production processes and currently are directed to reduce the use of noxious chemicals that are not considered hazardous but are an irritant to EOs due to odor.

Reduction in emissions was accomplished through the development of a patented Class 1 Microfilter that, when attached to emission-producing equipment, captures and eliminates all volatile organic compounds (VOCs) and other emissions from being released into the air. The filter also automatically creates, separates, and catalogues emission reports daily. This device is currently licensed through the EPA as a "best available

Figure 1.2-1: Risk Management Processes, Measures, and Targets

Area	Risk	Process	Measure	Goal
Public Health	Lead exposure	Converted to using lead-free solder Quarterly EO monitoring where lead is in use	% lead in blood	0 lead usage in production <0.2% of legal limit
	Chemicals in air	VOCs filtering Weekly monitoring	% hazardous chemicals in air % noxious chemicals in air	0.00% induced chemicals <0.2% of legal limit
	Chemical handling	Daily audits	Number of violations	0 handling violations
Environmental Improvement	VOCs	VOCs filtering	% VOCs in air	0.00%
	Water contamination	Reclamation process	Purity of water Reuse of reclaimed water	99.9% pure 95%
Waste Management	Landfill	Recycle processes	Tons of material recycled	98% of all waste material
Energy Conservation	Global warming	Minimize usage Electricity from wind generation	Equipment use efficiency	>90%

technology" (BAT) to the general business public and has been provided to customers and the CSC for the past 15 years free of charge.

To anticipate future requirements, Fred has assigned members of his team to sit as active members on environmental boards, both at the state and national levels.

In 1987, Collin set a goal to eliminate solid waste from its manufacturing operations. The elimination was accomplished through changing the handling and trash processes and in-plant reclamation and recycling programs. Partner Suppliers are required to supply material only in recyclable or reusable containers. In-house, solid waste recycle bins are strategically placed throughout all buildings, and the Waste Management Team monitors the tonnage reports monthly (Figure 7.4-8) to ensure no drop-off occurs in the material being recycled. Because the business requires a tremendous amount of water usage, Collin has installed a campus-wide reverse osmosis system and reclaims over 90% of all process water. This water reclamation process is certified by the State Water Utilities Board. On a quarterly basis, water quality measurements are taken, and automated reports are electronically submitted through the secure portal to the board. Collin has been recognized by the state and EPA numerous times in the past 11 years.

Energy conservation is also important to Collin's success. Collin contracts for electricity from renewable sources. The slight upcharge in cost/unit funds additional investment in renewable options. All heavy energy-use equipment is monitored for non-use time. Through monthly reviews, the Energy Conservation Team identifies equipment displaying a high-energy dead time. It works with operations staff to automatically shut down or suspend this equipment, thus reducing the dead time. PCs are on a program to selectively suspend power based on non-activity. Building lights are on timers and motion sensors. Since 1995, Collin has been able to reduce wasted energy by over 95%. A display board in the main lobby tracks the cumulative reduction in Collin's carbon footprint. (See Figure 7.4-7.)

1.2b(2)

Business ethics is another area in which Collin does not compromise. All new EOs are trained for four hours on this subject. Also included in this training is a review of the Collin Business Conduct Procedure. At the end of the training, each EO takes a test and signs a condition of understanding and practice statement regarding company ethics. The procedure covers customer interactions, gifts, outside work, competitors, harassment, supplier relations, and software use. Annual refreshers are required using an online program. An anonymous hotline is in place for reporting suspected unethical activity. The hotline was used once in the past five years, and the allegation was investigated and dismissed. Scores for the EO Survey question indicating that EOs are comfortable reporting unethical activity are above 97% for the past five years, while the question "I have observed unethical behavior" has been below 1% over the same time period (Figure 7.4-1). A recent PDCA for the ethics processes identified the need to add an online compliance reporting page, which was completed in December 2012.

In addition, CNet software has built-in polling and licensing checks. Daily, it scans all computers for unlicensed software and flags the Information Technology Systems (ITS) group when strange or unlicensed software is found.

1.2c

Collin has aligned its community involvement and development efforts with the ISO-26000 guidance document. Collin's community focus is on education and culture, employment and skills creation, technology development and access, wealth and income creation, and health and social investment. The primary community is defined as the greater Nashville area; however, when Collin's EMS partner in Thailand was flooded, EOs immediately took action and donated household goods, food, and money for medical supplies. Logistics channels already in place were leveraged, and shipments of four 48-foot containers were donated to Thailand.

Community involvement actions are defined through a special PDCA process through which needs are gathered and understood; the best ways for Collin to become engaged are identified; and Collin carries out its activities. Mutual benefit for both Collin and the community is the desired outcome. Based on monitoring this outcome, Collin continues to engage in the activity, or it may choose to redirect its resources to activities more aligned with its vision, mission, and values or to activities that create more benefit throughout the community.

1.2c(1)

Collin has embedded consideration of societal well-being and benefit into its daily operations. The Community Stakeholder Team has conducted community surveys biennially since 2007; this activity is viewed as an innovation for a company the size of Collin. Survey results confirm the success of the Environmental Control Team and have surfaced no concerns in the past three surveys (Figure 7.4-1).

Collin developed a Greenway, a park with sports facilities, when the plant was expanded in 2006. The Greenway is for the use of EOs and the greater community. Collin sponsors Little League teams in four age groups for baseball. As a result of the 2011 community survey, football teams are also sponsored. These teams use the Greenway fields for practice, as do several other community teams. The Greenway is in use daily for community social and athletic activities.

Historically, Collin has contributed to the economy of Nashville and the state through its tax contributions. In addition, in-kind and financial donations are provided each year to local nonprofits equivalent to 8.5% of profit for each of the past ten years.

The company works with regulatory agencies to better align the needs of the agencies to the business processes. In addition, Collin works with permit agencies to streamline processes that will facilitate the construction of new facilities contributing to community economic development.

For the past 15 years, in support of the Ingenuity Collin Competency, Collin has been active in the State Government and Business Joint Venture (SG-BJV) program, which is chaired by the mayor; SG-BJV's initiatives are designed to make the Tennessee Valley a model for integration of business and government.

1.2c(2)

Collin provides support and works to strengthen the community in four specific areas: education, economic development (1.2c[1]), health, and general community activities (Figure 1.2-2). It allows each EO up to three paid days per year to participate in related community activities.

In the area of education, EOs work with the local community and state colleges to bring business and learning closer. Many senior leaders conduct presentations on interconnect technology at Peak State University and community colleges. In the Engineering Department of Peak State, Collin set up a working lab for students to design and fabricate circuitry. Collin has donated valuable equipment to the universities. Fred Fischer teaches evening classes on environmental controls in a business operation as part of the Peak State University MBA curriculum. Every summer, Collin supports both community and state colleges by hiring co-op students and interns. These students are asked to return each summer until they graduate. Students who remain in the program are immediately eligible for hire upon graduation as positions become available. The Collin computer training center is open and staffed by EOs for use by the local K-12 schools. Classes are conducted in basic computer training for K-12 students who desire to learn or further their skills. Instruction is given on word processing, spreadsheets, graphics, and the Internet. Additional online resources are used to assist English-language learners and their families to learn to speak and read in English. These classes, which run from 9:00 a.m. to 1:00 p.m. on Saturdays, include lunch for the students. Between 1:00 p.m. and 6:00 p.m., the computer center is open for students to complete assignments or conduct research on the Internet. These outreach activities in education are aligned with all three of the Collin Competencies.

The Public Health Team has identified a number of programs to train and enhance the community. In addition, the ERT offers Surviving Natural Disasters classes each month. As a result of flooding in 2011, the survival classes were expanded to address flooding in addition to tornadoes.

Many EOs volunteer at local health organizations. Shirley Ogrysko maintains a list of EOs who offer rooms in their homes for victims of natural disasters. This list is also on file at local emergency planning committees. The Collin quality video has been distributed to over 100 companies and is available through the Institute of Industrial Engineers (IIE) catalogue. Some other key community support activities in which EOs and leaders are involved are listed in Figure 1.2-2.

Figure 1.2-2: Community Engagement

Community	EOs	Activity
Education	EOs	Quality learning and application at K-12 schools; basic computer and English-language training at the Collin computer training center
	Senior Leaders	Presentations at state universities and community colleges
	Managers, Senior Leaders	Partnerships with faculty development staff members in K-12 schools, and state university and community college faculty to create simulation scenarios for real-life learning
	IS EOs	Ongoing support of local schools' computer labs
Economic Development	EOs	Participation with the local Chamber of Commerce to develop a welcome-to-Nashville program for workers entering the Nashville workforce
	EOs	Baldrige lunch-and-learn sessions with local civic organizations
Health	EOs	United Way, Red Cross, Food for the Needy, spring cleaning for seniors
	EOs	Free flu shots for the community, free body mass analysis for the community
Community Activities	CEO	Membership in EIC Board of Directors
	Senior Leaders, EOs	Presentations at the annual State Quality Expo
	Senior Leaders, EOs	Participation in the Consortium Quality Interchange
	EOs	Gifts for holiday programs
	EOs	Coaching of Little League teams at Greenway

Category 2: Strategic Planning

2.1 Strategy Development

2.1a

2.1a(1)

Considerable changes have been made to the Strategic Planning Process (SPP) since Collin's last application. The Perpetual Planning Process (PPP) served its purpose to create an ongoing awareness of strategy. Once the EOs became fully engaged in achieving action plans and scorecard measures, dissonance began to emerge with the cycle of having various stakeholders entering the process at different times throughout the year; this was due in part to additional and sometimes competing action plans or measures introduced every quarter. In early 2008, the LT held meetings over a six-month period to determine the best way to retain the desirable outcomes of the PPP while addressing the EOs' concern for churn. In August, the LT determined that it was best to return to an annual frequency for establishing the strategy and key outcome (balanced scorecard [BSC]) measures.

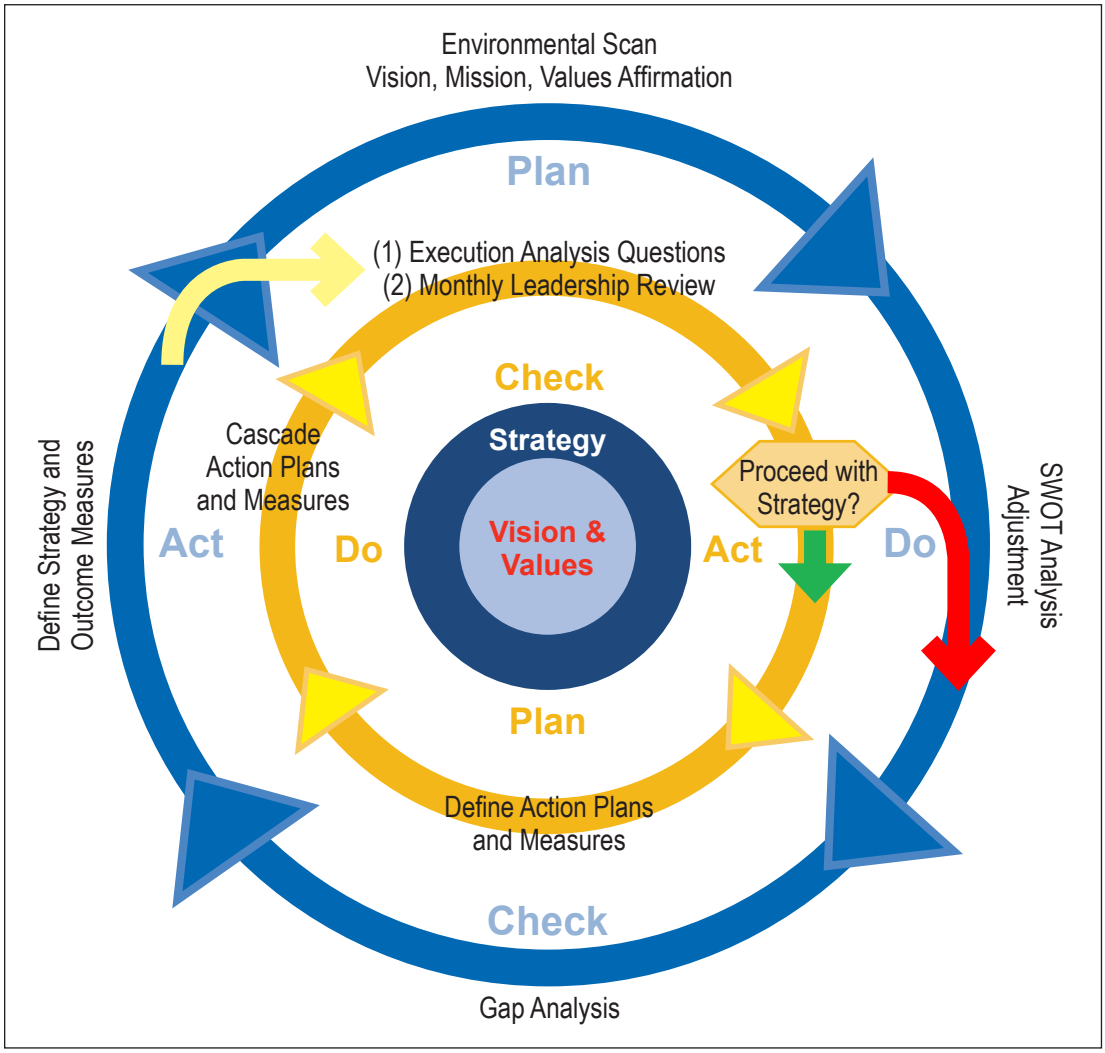
Stakeholder Teams and others would continue ongoing scans and bring them into the monthly LT review meetings. Review after the 2009 planning cycle indicated that there was still an element of immediacy in the PPP that was missing in the SPP. Beginning in 2010, the LT revised the Leadership Review Process, which added a review of strategy, significant new stakeholder input, and performance of strategic measures against quarterly targets in a monthly format. This restored the perpetual piece that integrated the annual planning process with ongoing review. The process begins by gathering data and information in an environmental scan, as shown in Figure 2.1-1.

Planning horizons are defined based on the ability of Collin to rapidly respond to internal and external shifts in the environment. Short-term planning covers the coming year, and long-term planning was decreased from five to three years to ensure more timely execution of objectives and outcome measures. Strategic objectives are set for both long- and short-term planning horizons.

2.1a(2)

Strategic opportunities (O of SWOT) are handled as a continual improvement. The LT evaluates the opportunity, weighing the risks in order to ensure that the risk of not pursuing the

Figure 2.1-1: Strategic Planning Process



opportunity is greater than the investment required in a process or core competency to successfully seize the opportunity.

The two strategic opportunities that Collin is currently addressing are (1) evolving the business to a more sustainable business model (long-term), and (2) growing the Contract R&D business (shorter-term).

Collin recently created the title chief innovation officer (CInvO) in recognition of innovation as an enabling process. At Collin, innovation and research are conjoined. The process for incremental and breakthrough change is the same; the outcome is different. Continuous innovation is defined and the process is explained in the "Collin Spark" course, which is a common requirement for all EOs.

2.1a(3)

Input for the SPP is shown in Figure 2.1-2. Input from customers is gathered from a number of sources, including the annual Baldrige assessment (Baldrige self-assessments are conducted semiannually), market surveys, the Customer Survey, and CCA Reports. The CNet Customer Relationship Management (CRM) module is the repository for the information, and CRM prepares a reminder if a customer has not provided input over the past quarter. Input from a large number of additional external sources, including industry and professional societies, government agencies, and independent third-party analysts, is incorporated into the SPP. Initial contact with customers includes an approach that invites them to participate in a strategic sense with the company. The CCAs explain to customers their hopes of nurturing long-term relationships and describe the assessment regimen. A Baldrige self-assessment is conducted semiannually, with the company conducting at least one team survey per month across all business units. Customers, along with Partner Suppliers and all stakeholders, are invited to join Collin's assessment teams so that their requirements are included in the monthly strategy review. Collin encourages customers to provide guidance on their requirements, and the company develops a sense of the expectations of its end-use customers. Market and CCA assessments, as well as the Customer Survey, are conducted electronically with Web-enabled software; real-time results are available in CNet. The Stakeholder Teams also gather information continuously on their respective stakeholders.

Many of these same assessments provide analysis of the competitive environment. From a competitive perspective, stakeholders who participate in these surveys are also involved in the civic, business, government, and technical communities related to Collin's industry. They bring their rich knowledge from these external relationships into the appropriate assessments and survey vehicles. Collin's market, customer, and employee satisfaction surveys include direct questions comparing the company's performance, products, and services with the competitions' offerings. Collin annually commissions an independent study to review state-of-the-art technology in its industry and to evaluate competitive threats. The company benchmarks best-in-class products and service quality—not

Figure 2.1-2: Inputs to Strategic Planning Process

Category of Input	Examples	Owner	Plan Element(s) Affected
Customer Data	• Customer Surveys • CCA Reports • Customer Preferences	• Dir., Customer Advocacy	Strategic Direction Product Development Process Management
Market Data	• Third-party Assessments • Industry Sources	• Dir., Marketing and Sales • Bus. Segment Managers	Strategic Direction Product Development Technical Direction
Competitive Assessments	• Customer Surveys • Product Analyses • CCA Reports	• Dir., Customer Advocacy • Dir., Marketing and Sales	Strategic Direction Product Development
Technology Assessments	• Annual Technology Assessment • User Feedback	• Chief Technical and Environmental Officer	Product Development Technical Direction
Intelligent Risk	• Meetings with Regulators • Safety Audits • Research Evaluations	• Chief Technical and Environmental Officer • Dir., Health, Safety, and Security • CInvO/CRO	Product Development Technical Direction
Human Resources	• HR Capability Assessment and Capacity Study • EO Survey	• Chief Human Resources Officer	Human Resource Capabilities
Operations	• Baldrige Assessments • ISO Compliance Audits • Performance Analyses	• Dir., Perf. Excellence • ISO Management Rep. • COO	Process Management
Partner Suppliers	• Supplier Ratings • Partner Performance	• Production Directors	Product Development Supply Chain Mgmt.
Economic Environment	• Economic Reports	• CEO • CFO/Comptroller	Strategic Direction Technical Direction

only against its competitors but also relative to its customers' "best suppliers." Collin uses these analyses to identify competitive gaps and closure rates to set short- and long-term product, technology, and quality goals.

A comprehensive analysis of risks is critical to helping company leaders identify the strategies necessary to excel in a very competitive market. Issues identified as potential risks are synthesized into a specific report for the monthly LT review. A detailed risk analysis is completed whenever Collin has identified the potential for a new product. The potential benefit from the product and cost of development is weighed against the potential risk of not entering the market with that product. Product development commences when the benefit outweighs the risk.

Major material suppliers help with design tradeoffs and new technologies during Collin's planning and goal setting. As a small company, Collin supplements its developmental capability with the strong R&D competencies and other industry-related capabilities and needs of its Partner Suppliers.

To provide help in identifying needs, developing short- and long-term goals, and making improvements in specialty areas, Collin also relies on the capabilities of service suppliers, such as insurance companies, government agencies (e.g., OSHA, EPA, EEOC), and an accounting firm.

CCAs, who are involved with customers daily, provide another valuable source of information. They are close to the marketplace and act as listening posts for information on product and service expectations and technological advances. This information is entered directly into the strategic planning location of CNet and is provided as input to the SPP by the LT member chairing the Customer Stakeholder Team.

All of the various SPP inputs are then factored into the SWOT analysis process. When the priorities from the SWOT analysis are clear, a gap analysis process is conducted. In the gap analysis process, the LT and AB members review the priorities and identify any potential blind spots independently, then collectively. They focus on the following strategic questions:

Strategic Direction: What does Collin have to do to maintain industry leadership in its chosen markets?

Product Development: Is Collin designing and producing the right products to maintain the lead supplier role for its customers?

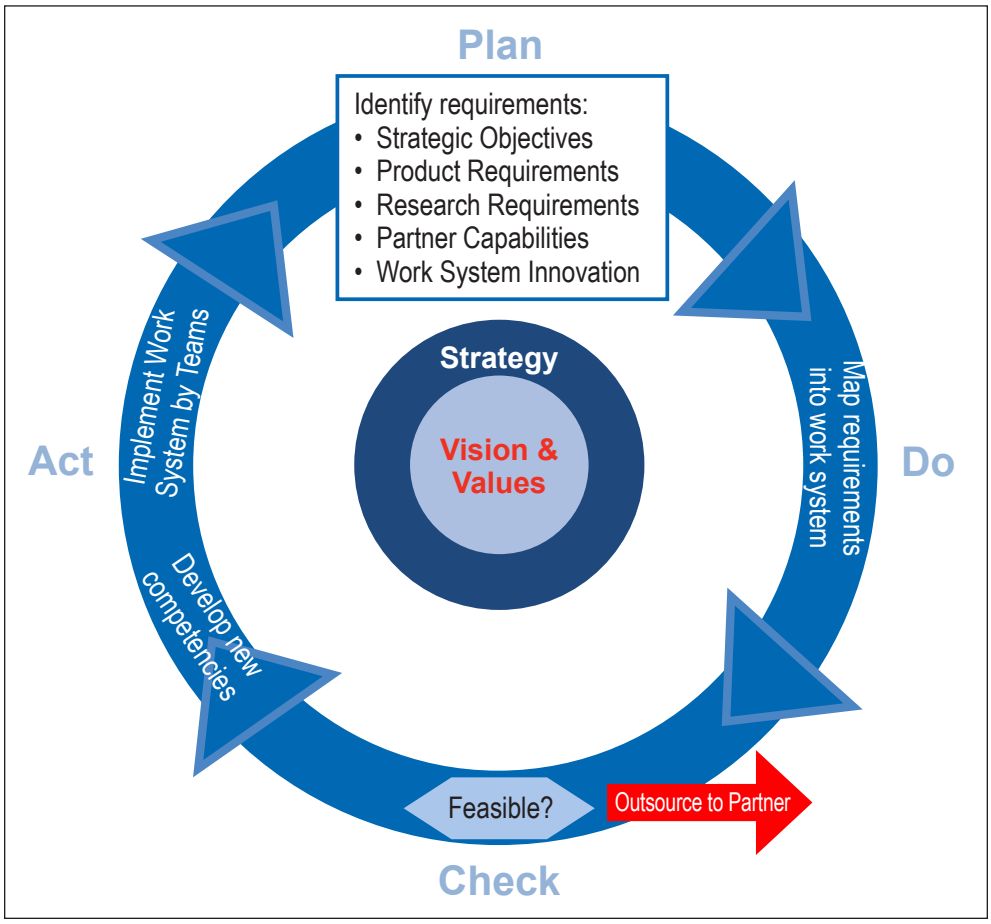
Process Management: What are Collin's work systems and key processes? Do the work systems support Collin's future direction? Is Collin managing processes to support its leadership role?

Technical Direction: Is Collin pursuing the best technologies to develop products in a reliable and environmentally responsible manner?

Human Resource Capabilities: Is Collin developing EOs to support automation and maintain industry leadership?

Once the absence of blind spots is confirmed, the LT derives the strategic objectives and key outcome measures. At this point, a transition occurs to the Action Planning and Management Gold Loop (Figure 2.1-1), and all directors and business segment managers are engaged in the process again. The first step analyzes the strategic objectives and outcome measures to determine the execution feasibility. Resources, core competencies, strategic advantages, and strategic challenges are mapped to the strategic objectives. As the Strategy Matrix is completed, any gaps are reason to return back to the Strategy Development Blue Loop to refine the objectives and measures.

Figure 2.1-3: Work Systems Review Process



When execution feasibility is confirmed, the directors, business segment managers, and their staff identify action plans and outcome measures for the strategic objectives that are aligned with their respective disciplines.

2.1a(4)

Collin defined its value stream early in its adoption of Lean Six Sigma. This represented a refinement to the product life cycle and enabled an understanding of what provides value to customers. Viewing the value stream from a perspective of a work system challenged Collin to view the product development and process design value streams more strategically (6.1a[1]). In 2011, Collin formalized an annual review of its work systems during the gap analysis and feasibility steps of the SPP. This review is depicted in Figure 2.1-3.

Collin gathers input from the environmental scan in the SPP and uses that to identify work system requirements, as shown in Figure 2.1-4. It carefully considers what processes truly leverage its core competencies and what processes could provide better value through Partner Suppliers due either to their stronger competencies or to cost effectiveness. During SWOT analysis, core competencies are evaluated to ensure that they continue to support the strategic advantages (S of SWOT) and can be leveraged to address the strategic challenges (W and T of SWOT). When the competencies are insufficient, new core competencies are added; this was the case in creating the Contract R&D group. Sales and marketing staff members added a competency to understand the new business segments' capabilities and capacity before marketing and selling Contract R&D to the new market.

2.1b

2.1b(1)

Key strategic objectives are portrayed in Figure 2.1-5.

Discussions during the SWOT and gap analyses identify any opportunities for innovation in products, operations, and the business model. For example, the original business model was one focused on fabrication of circuitry, including assembly. The business model and work system were modified when it was no longer economically feasible to retain assembly in-house and it needed to be outsourced. That change led to the qualification of the two EMS partners. As Collin grew in its understanding of environmental sustainability, it

Figure 2.1-4: Work Systems and Requirements

Work Systems	Requirement	Stakeholder
Product Design	• Meets/exceeds functional requirements • Meets/exceeds reliability requirements	Customer
Order Fulfillment	• Meets/exceeds quality and reliability specs • Delivers on time • Provides value	Customer
	• Leverages competencies • Optimizes available capacity • Is cost-effective	Collin Partner Suppliers and EMS Partners
	• Impacts the environment with neutral or positive results	Collin Community
Customer Relationship Management	• Responds promptly • Responds accurately	Customer

Figure 2.1-5: Strategic Objectives; Short- and Longer-Term

Integration	2013 Strategic Objective	Q1	Q2	Q3	Q4	2014	2015
Expertise, Exceptional People, SAs 1–3	**SO-1 Increase Net Promoter Score 5% per year over 2012 baseline of 45%**	46%	47%	48%	50%	55%	60%
	Best competitor comparison	36%	36%	37%	37%	40%	43%
Expertise, Ingenuity, Exceptional People, SAs 4–5, SCs 2–3	**SO-2 Increase current market share over the next 3 years by business segment:**						
	***Aerospace* by 2.5% cumulative, from 34%** **Best competitor 28% trending down due to international competition**	+0%	+0%	+0.5%	+1%	+2%	+2.5%
	***Personal Electronics* by 15% cumulative, from 8%** **Best competitor 10% stable**	–3%	+1%	+3%	+5%	+10%	+15%
SO 2	***Contract R&D* by 30% cumulative, from 10%** **Best competitor TBD**	+2%	+3%	+5%	+8%	+20%	+30%
Ingenuity, Exceptional People, SAs 6–7, SCs 4–5, SO 1	**SO-3 Improve EO participation in moving toward a refined business model as indicated by the % of EOs who promote sustainable practices from 25% to 75% over the next 3 years**	25%	31%	36%	40%	57%	75%
Expertise, SA 7, SC 6	**SO-4 Improve demonstrated leadership and decision making by EOs (other than team leaders) as reported by the EO Survey question from 35% to 60% over the next 3 years**	35%	37%	40%	42%	50%	60%
Exceptional People, SA 7, SC 1	**SO-5 Maintain 100% employee ownership**	100%	100%	100%	100%	100%	100%

strategic challenge = SC; strategic advantage = SA; strategic objective = SO

recognized an opportunity to change the business model to be more R&D-intensive and also to develop fabrication processes for sustainable manufacturing. This long-term shift will reduce the potential unfavorable impact of manufacturing operations.

No new changes are anticipated in 2013; instead Collin will be continuing to execute changes planned in previous years. Leveraging technical expertise, the Contact R&D group was developed to penetrate a new market for Collin. The addition of flex circuitry, a product change, allowed penetration into the PE business segment. Work with nanotechnology solutions represents an innovation in the interconnect industry. It will also impact CSC requirements and capital equipment procurement.

Collin has a history of anticipating future changes. For example, when the trend for acquisitions of peer companies continued, Collin made the strategic decision to make all employees company owners. The percentage of ownership is commensurate with position and length of service. Formal processes were identified to assist new EOs to buy-in to the company once a probationary period was complete. Additional processes were defined to plan for the buying of stock from retiring or departing personnel. Collin believes this was the best option to reduce the concerns of the workforce and to provide benefit to every EO if the company were to be acquired at some point in the future.

2.1b(2)

The relationship between strategic objectives and Collin Competencies, strategic challenges, strategic advantages, and strategic opportunities is shown in Figure 2.1-5.

Short- and longer-term planning horizons are addressed by the LT and AB members during gap analysis. The anticipated speed of strategy execution to close gaps is the primary determinant for short- versus long-term time horizons. The LT identifies the objectives it believes will be required in the short-term, as well as those that will require extra time to accomplish. A reality check is provided during the execution feasibility check.

As the strategic outcome measures are developed, the scorecard approach provides a visual cue for balancing the needs of all stakeholders. The Stakeholder Teams are very quick to identify any unresolved imbalances.

The monthly Leadership Review Process relies on leading indicators to identify and respond to any sudden shifts in market conditions. The LT then identifies the needed adjustment, rebalances resources, and communicates the change through the Stakeholder Teams.

2.2 Strategy Implementation

2.2a

2.2a(1)

As previously stated, directors use the Strategy Matrix to break down the strategic objectives into actions required to achieve the strategic outcomes, and to identify the responsible work groups. Directors then work with their staff to establish interim goals, appropriate projected outcomes, and in-process measures to monitor progress. Each of the action plans lists specifically what resources are required within the categories of space, equipment, technology, and people, with the people category grouped by skill levels and necessary improvements in those skills. The Strategy Matrix is completed with links to detailed action plans and monitoring charts in CNet and is always available for drilldown review by the LT and all EOs. Key action plans are shown in Figure 2.2-1.

2.2a(2)

Action plans are cascaded through the company and linked to the Career Management Program (CMP) through scorecards. All EOs understand the importance of strategy and are keenly interested in understanding the short- and longer-term strategic objectives. Many EOs are engaged with their managers during the action planning process and have provided input for developing the actions and related measures.

Similarly, Partner Suppliers and customers are engaged as appropriate during action planning. Their engagement ensures a match between capabilities and capacities to meet emerging product and process requirements.

2.2a(3)

Twice during the SPP, determinations are made to ensure that sufficient resources are available to carry out the strategy. The first occurs when the LT and AB conduct the gap analysis. Any constraints in terms of financial, human, or other resources are initially factored into the definition of the strategic objectives. The second determination is made by the directors and business segment managers during their feasibility reviews. The determination serves as a reality check to ensure that Collin has the ability to achieve the strategy. When needed, an iterative dialogue continues between these two groups until the LT, AB, directors, and business segment managers are in agreement on the feasibility of the plan. Resources are identified and allocated for each action plan. The chief financial officer (CFO)/comptroller and CEO make a final review of the collection of resource requirements to ensure that resources are adequate and not double allocated, and that budgets are finalized.

The ongoing monthly leadership strategy review meetings are the opportunity to manage resource allocations and address any emerging risk.

Figure 2.2-1: 2013 Action Plans and Measures

SO	Action Plan	Measure	J	F	M	A	M	J	J	A	S	O	N	D	Benchmark
SO-1	Become sole supplier to key customers who have made referrals in the past	Repeat business/% available	80%	80%	81%	82%	82%	83%	83%	84%	84%	84%	85%	85%	83%
	Sustain overall customer engagement levels	Customer engagement	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	97%
	Promote customer advocacy with peer companies	# of advocacy referrals	1	1	1	2	2	2	2	2	3	3	3	3	Not available
SO-2	Satisfy current contract documents	OTD	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%
		Meet reliability 100% of the time	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%
	Recoup phone losses on next model	PE sales	$15k	$35k	$50k	$15k	$35k	$50k	$15k	$35k	$50k	$15k	$35k	$50k	$375k/year
	Increase fine-line capability	Cpk	0.25	0.25	0.25	0.36	0.50	0.58	0.67	0.75	0.79	0.83	0.9	1.0	2.0 (internal goal)
	Prove out production of nanocarbon fibers	# of successful prototypes			1			1			2			1	Not available
	Train CCAs for selling finer-line products	Competency pass x3 by R&D staff								1	2	3			Not applicable
	Secure R&D contracts with current customers	# new contracts	1		1		2	3	3		4	4			Not available
SO-3	Create a new initiative for EOs to take into schools (i.e., *Catch the Wind and Feel the Warmth* to promote renewable energy)	Project tracking milestones					Text printed				Pilot session			EOs trained	Not applicable
	Solicit ideas from EOs on how Collin can further reduce its carbon footprint	# of EO Excels ideas implemented per month	1	3	4	4	4	5	5	5	5	7	7	9	6/month
SO-4	Expand leader development courses to include nonleader leadership and collaborative decision making	Project tracking milestones	Plan approved				Pilot session	Train-the-trainer	Roll-out						Not applicable
SO-5	Begin tracking EOs' retirement plans and incorporate anticipated trend in EO Transition Plan	Report due end of Q1		Draft report	Final report										

2.2a(4)

Key workforce plans are included in Figure 2.2-1. To support finer-line capabilities, just-in-time (JIT) training is provided to EOs as any process changes are made. For example, additional EOs may be needed to support growth in the Aerospace business segment. The most significant impact on the workforce is evolving the business model in the very long term in support of sustainability. As there is more emphasis on Contract R&D, EOs may need to revise their skill sets to accommodate new equipment and related processes. New courses are developed in anticipation of these changes to prepare EOs for nanotechnology production.

2.2a(5)

Related performance measures are established during the action planning cycle of the SPP to monitor execution of action plans. Key measures are shown in Figure 2.2-1. Appropriate goals are established in collaboration with Partner Suppliers and monitored in the respective Partner Supplier scorecard.

Every EO has scorecard measures aligned with accomplishment of action plans. Accomplishment of the goals for the measures is part of quarterly CPM reviews to ensure full deployment of action plans.

2.2a(6)

As described in 1.1b(2), the monthly leadership strategy review identifies when there is a need to modify either strategy or action plans. The communication of the change is initiated by the appropriate Stakeholder Team. The directors and business segment managers impacted by the change are responsible for updating action plans, measures, and goals. Performance against the new plan is then monitored monthly through the regular scorecards.

2.2b

Collin fully expects that its competitors are developing similar objectives for improvement. However, current and potential customers indicate that Collin leads the competition in all important quality areas, including responsiveness, delivery, product performance, and reliability. Despite Collin's price reduction initiative, the sole opportunity for it to improve is in unit cost reduction where competitors have aggressively tried to penetrate its markets; improvement in PE unit cost is presented in Figure 7.5-7. Collin has not compromised its superior service and product performance in its continuing efforts to decrease prices. Pricing improvement initiatives are having a positive impact in reducing costs and will allow Collin to continue its leadership position on price in the near future. Collin plans to "raise the benchmark" by continuously increasing the performance standards its competitors must reach.

Performance projections are in place for strategy and critical action plans in Figures 2.1-5 and 2.2-1 respectively.

Category 3: Customer Focus

3.1 Voice of the Customer

3.1a

3.1a(1)

Collin listens to and interacts with current customers through (1) multiple methods deployed at key points throughout the customer life cycles and (2) information obtained through independent external sources. CCAs are assigned to customers to guide them through the order placement process; communicate throughout order fulfillment; and follow up to verify performance on orders, determine repurchase intentions, and seek new business opportunities. This Personal Touch is a proven advantage for Collin compared to its direct competitors and global competition. CCAs use social media to retain contact with current and previous customers and to provide updates on product capability and innovations for future business.

A slightly different approach (i.e., a project-based approach) is used for the Contract R&D market. Project status reports are presented in weekly meetings that frequently use Web-based communication tools to connect parties virtually throughout the development life cycle. CCAs are included in each Collin project team to retain the Personal Touch within the project environment.

CCA Reports aggregate information gathered for each market. Monthly, the Customer Stakeholder Team monitors these reports, which are a significant input for the SPP.

3.1a(2)

Customer focus groups are conducted quarterly to verify the data gathered through Collin's field listening mechanisms, to seek customer perspectives on changing requirements, and to listen to potential customers by segment. Biennially, a series of focus groups is commissioned by a third party where current, former, and potential customers and customers of competitors are invited. Focus group results are part of the inputs to the SPP. Collin reviews short- and long-term product strategies with customers to learn how well plans address current and emerging requirements.

Business segment managers visit customers a minimum of quarterly to observe use of Collin product in customer operations. During a recent visit, a manager noted that Collin packaging was creating difficulty in the customer's process. A CI^2 Team working with the customer redesigned the package to eliminate the experienced difficulty. Annually, business segment managers review all listening methods, deployment, and

the learning processes during a process PDCA. They assess and update survey instruments to ensure that questions address changing company capabilities and customer requirements. They review listening and learning data and analysis processes to determine procedural changes and to select new data collection mechanisms to improve the effectiveness of the approach. These reviews have provided several refinements in Collin's approach. For example, satisfaction surveys are deployed throughout the year rather than once a year. This approach, implemented by benchmarking a similar-sized mid-range computer distributor, has improved efficiency, turnarounds, response rates, currency of data, and customer satisfaction with the Satisfaction Measurement Process. Also, it has provided Collin with many program expansion capabilities.

3.1b

3.1b(1)

Collin uses several methods to determine customer satisfaction and engagement. In addition to the information related to customer satisfaction contained in the CCA Reports, an internal Customer Survey has been in place for over 15 years. The tool has been improved based on adverse outcomes and annual process improvement cycles. Engagement questions were added based on a Customer Stakeholder Team Web literature review in 2009. At that time, the response scale was changed from a five-point scale to a ten-point scale that enabled analysis of results to calculate a Net Promoter Score.

Collin monitors customer satisfaction and dissatisfaction through internal and external independent surveys and uses competitive comparisons and appropriate benchmarks consistent with its business model. Collin's Customer Survey uses a standardized Likert semantic differential rating scale ranging from very satisfied ("10") to very dissatisfied ("1") for the general and specific performance factors based on segmentation attributes and customer requirements. Customers use the same scale to rate the importance of each attribute, their satisfaction with Collin's performance, and their satisfaction with Collin's performance compared to other multilayer board and rigid-flex manufacturers for each attribute. CNet administers surveys to customers as they transact business online. These surveys are based on a sampling profile to ensure that every customer is surveyed. Also, each business segment is surveyed every quarter with approximately equal response rates to ensure the validity of data comparisons over time and among segments. Collin found that the Web-based survey works equally well for all business segments. To make it easier for end users of the product, Collin also provides the survey in other languages upon request.

The Customer Survey asks customers to rate Collin against other multilayer board and rigid-flex manufacturers on key product and service attributes, as well as relationship attributes. This information is used to define or refine business segments and customer requirements. Collin correlates subjective customer perceptions with objective behavior-based marketplace measurements (Figure 3.1-1) to validate customer opinions with likely buying, referral, and loyalty behavior. This analysis is used in the SPP to forecast business scenarios.

Collin assesses survey results against inputs on its relative competitive position from field and industry listening posts to place these data in the context of current marketplace feedback. Mechanisms include frequent customer interaction and follow-up, customer focus groups, participation in industry and customer group meetings, market interest surveys at trade shows, and independent studies. Collin's objective is to develop quick, comprehensive surveys, using a meaningful scale, that accurately assess satisfaction and engagement with the most important product, service, and relationship engagement attributes relative to competitors. Collin asks a representative sample of customers to review its surveys in detail, comment on the effectiveness of the questions and measurement scale, and make improvement suggestions. Then, prototype surveys are administered to carefully selected test groups to assess the time required to complete the survey and the clarity of the questions, scales, and format.

To validate, verify, and refine ongoing internal customer satisfaction and engagement research, Collin commissions an independent survey through an industry research group using the same scale as for the internal survey process. This survey covers all areas of the customer relationship and includes general questions on customer perceptions of company performance in all areas. Collin cross-correlates external customer satisfaction and engagement results to its most recent Customer Survey results to verify the accuracy and validity of the data and their reliability and sensitivity as predictors of satisfaction, preference, repeat purchase, loyalty, and positive referral.

Collin surveys multiple contact points within the customer organization (i.e., purchasing, quality, engineering, and manufacturing) to increase the objectivity and reliability of data. Surveys are coded by customer function to cross-tabulate data and evaluate performance in each area.

Collin's Engagement Improvement Tool Kit helps identify areas where improving satisfaction and engagement will produce the most significant change in results. The tool kit includes gap analysis tables, scatter diagrams, trend analysis graphs, and Pareto charts. Collin calculates the descriptive percentages for every combination of ratings to determine basic dissatisfiers, reward/penalty factors, and value-add factors. Plotting rating percentages over time demonstrates

Figure 3.1-1: Marketplace Measurements

Measurement	Results Figure
Dissatisfiers (Complaint)	7.2-4
Win Rate and Quotation Accuracy	7.1-11
Percentage of Available Repeat Business Won	7.5-8

where improvements have been effective and where additional emphasis is necessary. Statistical methods determine if significant changes have occurred from previous periods.

Correlations among the ratings of individual attributes and overall importance, and the satisfaction ratings for each customer and each business segment indicate customer priorities. Statistical inference tools, such as multiple regression, identify the most relevant satisfaction and engagement attributes (satisfiers and dissatisfiers) driving customer satisfaction, preference, and loyalty.

The Customer Stakeholder Team and business segment managers use the results of these analyses where there are unfavorable trends or weak correlation to engagement to identify improvements (i.e., improvements in the Customer Survey questions, addition of questions, or use of another measurement category). Business segment managers prioritize the recommended improvements to customer satisfaction and engagement scales, measurements, and procedures.

CCAs begin following up with customers within 24 hours of a shipment or quotation to ensure that customer requirements are met. In addition, they solicit and record customer perceptions on recent products, services, and transactions during their interactions to receive first-hand information and to promptly identify actionable opportunities for improvement. When a product is shipped, CNet automatically issues a shipping notice to the customer and creates a tickler note for the appropriate CCA to follow up with the customer.

When CCAs log onto CNet, the first screen lists customers requiring follow-up, and CNet opens tickler notes. When the contact and the results are recorded in CNet, the note is removed, and the date, time, and person clearing the note are recorded. An activity report for the business segment manager ensures that follow-up time does not exceed service standards. Less-than-"satisfied" ratings or negative comments automatically trigger complaint resolution procedures (3.2b[2]).

3.1b(2)

Collin monitors competitor activities by studying how (buyer selection) and why (vendor preference) the company is selected by customers over other vendors. Collin tracks the number of customers that leave, why they leave, where they go, and the amount of lost revenue to understand the strength of the competition. In addition, Collin uses data from a cross section of noncustomers to understand why companies choose other vendors. These analyses enable Collin to offer broader product and service lines than its competitors.

A cross section of EOs participate in Collin's industry, supplier, and customer seminars, groups, and conferences to better understand the industry and to obtain information on changing industry, segment, and customer requirements. At trade shows, Collin conducts market interest surveys to gather information from customers of competitors and other potential customers. Industry publications help Collin calibrate strategic direction. Quarterly, business segment managers collect, analyze, and review the customer, competitive analysis, and industry data and incorporate these inputs in the Leadership Review Process when gaps are identified.

Through reciprocal partnering agreements, Collin participates in customer strategic planning processes as a key supplier, just as customers participate in Collin's SPP. Most opportunities for innovation arise in the Aerospace and Contract R&D business segments where there is significant participation by Collin in customer strategic planning. Customers and Partner Suppliers participate in Collin's internal Baldrige-based assessment teams. This opportunity provides ongoing customer input on the relative importance of product and service features, as well as input for Collin to determine how it can best address customer requirements.

3.1b(3)

Collin recognizes that dissatisfaction is not always the same as the lack of satisfaction in survey results. It relies on information from the focus groups to define the true factors of dissatisfaction in its customer-facing processes. For example, Collin's results indicate high levels of engagement for customers in the Aerospace business segment. A recently commissioned focus group indicated dissatisfaction with the product marking and invoice processes. This information was shared with the respective process owners and CCAs who conduct root cause analysis to identify the changes required to remove this as a factor of dissatisfaction across all business segments. As another example, a recent dissatisfier was identified associated with the detail contained in invoices. The CCAs worked with finance and accounting staff members or EOs to incorporate the additional information in the standard invoice template.

3.2 Customer Engagement

3.2a

3.2a(1)

Collin currently serves three specialized business segments in the overall printed circuit board market defined by product functionality and use, customer requirements, and benefits. Important functional characteristics of Collin's products are their multiple layers, combination of rigid and flex circuitry, advanced materials, high-component density, and very fine lines and spacing. Customers choose Collin because of its reputation for high quality and reliability, fast technical response, consistent on-time delivery (OTD), and Personal Touch. By working closely with customers from product design to reorder, Collin's experienced design and customer support EOs become a "virtual workforce" to save customers money and to enhance relationships.

Product offerings and services are designed based on VOC information, emerging technological capabilities, and the ingenuity of EOs. As new technologies are studied, Collin uses customer requirement data to identify customers who would most likely benefit from incorporating these breakthroughs

in their current and future products. Collin's reputation as the manufacturer of technically sophisticated products attracts demanding customers who seek its advice on how to address their advanced technical requirements and to create prototypes. Collin Contract R&D develops new technologies and runs prototypes for use in customers' research and development activities.

Customers are included in each new product design to help Collin better understand customer needs, develop and communicate mutually acceptable expectations, and improve business relationships. As part of the Product Development and Innovation Process (Figure 3.2-1), a cross-functional team is created that includes CCAs; the team incorporates design changes, and the customer or Collin engineers provide input to the design database on CNet. Overnight carriers deliver customer prototypes reflecting these changes the next day.

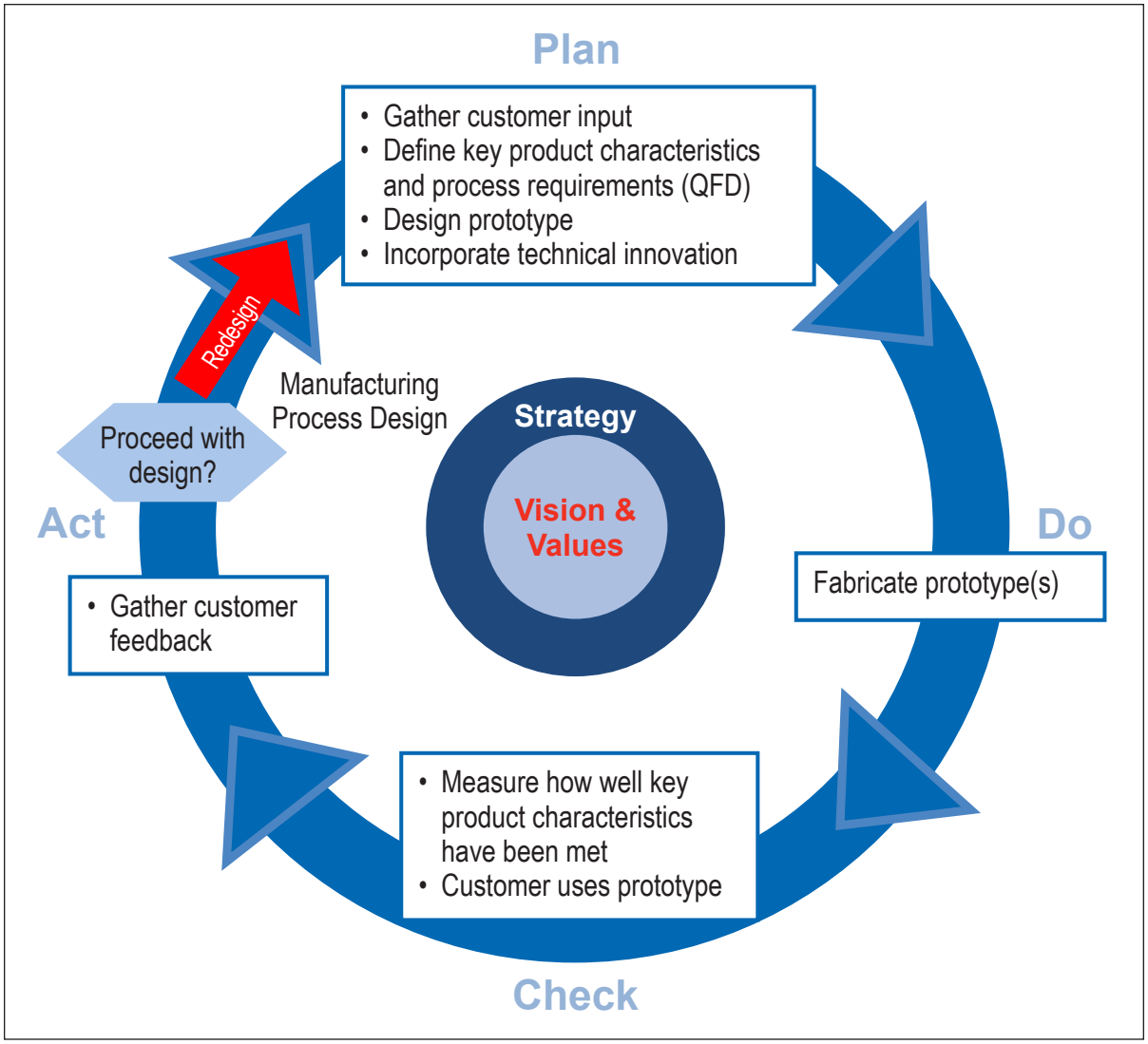
3.2a(2)

Collin deploys a wide choice of mechanisms that make it easy for customers to communicate with the company. Beyond personal contact in person or by phone or e-mail, the secure customer portal accessed via CollinTech.com and social media provide additional options for customers to reach their CCAs. In addition, CCAs just initiated a blog to share and improve technological solutions and to market Contract R&D services. Based on short message services (SMS) best practices, Collin expects to see benefit in six–eight months.

CCAs and business segment managers meet with customers early in the design process to determine support expectations and preferences. The CCA works with the ITS Department to ensure that secure lines of communication are established, with appropriate permissions for additional EOs who may interface directly with customers.

CCAs follow up on all orders to verify satisfaction results. Collin follows up on lost business opportunities with existing and potential customers to determine the reasons that it lost that business. These data allow Collin to focus current and future offerings on specific buyer selection criteria and improve win/loss performance.

Figure 3.2-1: Product Development and Innovation Process



3.2a(3)

Segmentation is based on market data collected from current customers, customers of competitors, and potential customers and markets. Collin begins the segmentation process at the global level by determining the factors and trends that drive customer requirements. It uses market intelligence data gathered throughout the year for the SPP. Business segment managers use this information to forecast opportunities within each geographic area and to define segment requirements. Then they analyze existing customer data by segment using Collin's customer database and customer surveys. Results of these analyses are used as inputs to the SPP and to design product and service offerings.

Collin's business is organized to satisfy the needs of its three key segments: Aerospace, Personal Electronics, and Contract R&D. Aerospace customers integrate Collin's products into their products (see Figure P.1-4 for expectations), with one primary contract (GBN Corp.) in this segment. The Personal Electronics segment utilizes rigid-flex technology and very fine lines to keep the interconnect solution very low weight and tightly packed or folded; commodity pricing is another characteristic of this segment. Contract R&D customers frequently come to Collin to design unique ultra-fine-line interconnects that are intended to be deployed under extreme environmental conditions; they order smaller quantities of very robust products for demanding environments. The Contract R&D segment also uses market and technology intelligence to define new design competencies that will be used to determine future market and customer segments for nanotechnology solutions.

3.2b

3.2b(1)

Collin has partnerships with key customers who rely on the high value of products delivered on time with stringent quality and JIT requirements. Relationship building is embedded in all business processes from initial customer contact to the follow-up after the latest order.

Collin assigns a business segment manager to each business segment to better understand the unique characteristics and specific requirements and expectations of that segment. CCAs are assigned to specific customers with similar characteristics in each segment. The business segment manager and CCA structure make Collin an integral communications and coordination link among different units of its customers' business processes.

The history and current status of customer relationships are included in CNet/CRM to ensure rapid, accurate data in a format that EOs can use to make timely, empowered decisions. CCAs use the CRM database to log and track all customer interactions. When a customer or EO enters the customer's secure portal, CRM automatically logs the contact and displays historical customer data so that all EOs have complete access to the customer's full history and current status. This ensures that the Personal Touch may be extended by any EO having direct contact with the customer.

Critical performance attributes have been determined over the years via market research based on a combination of quantitative and qualitative research techniques, including in-depth interviews, focus groups, and mail and telephone surveys. Collin identifies critical performance factors through factor analysis and discriminant analysis. Factor analysis divides survey data into the underlying dimensions and selects attributes that accurately measure each dimension (validity). Discriminant analysis determines if the selected performance attributes are accurate predictors of overall satisfaction and dissatisfaction (reliability and correlation). Several iterations of these analyses have yielded attributes that are statistically valid and correlated. This enables the company to capture actionable information to predict future customer behaviors and/or tendency for advocacy on behalf of Collin. Although Collin uses the same survey methods and scale for all business segments, it uses different attributes for developing relationships in different segments—based on a refinement of requirements derived from these statistical approaches.

Building market share is required for Collin to make its transition to a sustainable Level 3 (see Figure P.2-1). Market relationships are developed through a combination of presence in EIC subcommittees, at trade shows, and through SMS. SMS is used within a framework designed with customer engagement in mind. Information provided through SMS complements that available on the Web site or in print. Messages are sent in waves that correspond to customer time zones. Opt-out rates are monitored and used to identify the most effective messages.

3.2b(2)

Collin trains CCAs, field personnel, and managers to use the CNet complaint form to document all formal or informal customer complaints. A user can "hot key" to this screen from any location in CNet. The system fills in current customer information upon execution. The EO verifies (or updates) this information and logs the complaint. The information needed to understand a customer's complaint is available to the CCAs as they log it. When a complaint is logged, CNet instantly routes the complaint to the appropriate CCA for follow-up and resolution and forwards a tickler to the appropriate business segment manager and Customer Stakeholder Team leader. CNet reminds parties each time they log on the system that the complaint is "open" and displays its status versus customer service standards to ensure prompt corrective action. Collin requires that all complaints be resolved through direct personal contact with the customer who initiated the complaint or with the person whom the customer designates. Complaints are considered resolved when customers confirm that they are satisfied with the resolution. If this cannot be achieved, escalation procedures involve additional resources as required. Escalation rules are based on complaint codes. Collin codes complaints by symptom or problem experienced (as described by the customer), general cause (based on a detailed analysis of prior complaints), and root cause (based on a detailed analysis of the problem).

This approach ensures that appropriate resources are involved in the resolution process. Complaint codes are consistent with other coding systems used to organize data collected throughout the customer relationship life cycle, such as customer surveys and customer requirements research, and with internal quality data, such as internal rejects and warranty claims. This approach enables Collin to correlate product performance data from customers with internal quality assessment data to identify the scope and magnitude of customer problems, verify the effectiveness of job performance and corrective actions, and estimate the financial implications of inaction or resolution. Collin verifies the effectiveness of resolution through follow-up calls and surveys that focus on satisfaction with the timelines and resolution it promised.

Category 4: Measurement, Analysis, and Knowledge Management

4.1 Measurement, Analysis, and Improvement of Organizational Performance

4.1a

4.1a(1)

The Collin performance measurement system is designed to provide strategic information to the company, analyze data to monitor product and process outcomes, and manage work processes. Formal criteria are in place to guide the selection of measures, as shown in Figure 4.1-1.

Potential measures are identified during the SPP and as company goals and measures are cascaded through Collin. Quantitative measures with appropriate comparisons that are critical to strategy are added to the LT scorecard, the top-level scorecard. Key strategic measures that are not quantitative or are missing comparisons where expected are assigned to the appropriate Stakeholder Team. The Stakeholder Team then tracks the indicator via milestones, develops a data stream for a quantitative measure, and/or identifies the appropriate comparison. The resultant measure and comparison reenter the selection process as new input. Performance reviews for emerging measures include verification that the result is actionable. The LT member on the Stakeholder Team is responsible for reporting on performance during the leadership review for milestone projects.

Engaging Stakeholder Teams with the Measurement Selection Process (Figure 4.1-1) was a process refinement in 2011. Prior to that point, no one owned measures that were important to the company but not on the LT scorecard. This refinement was identified during the annual process review for performance measurement. There are many measures that are not considered key by the company, but these measures may be very critical to a business segment, department, or individual as a means of managing the respective process or product outcome. These indicators are housed in drill-down scorecards that cross reference which LT scorecard measure is impacted by the performance of the given indicator.

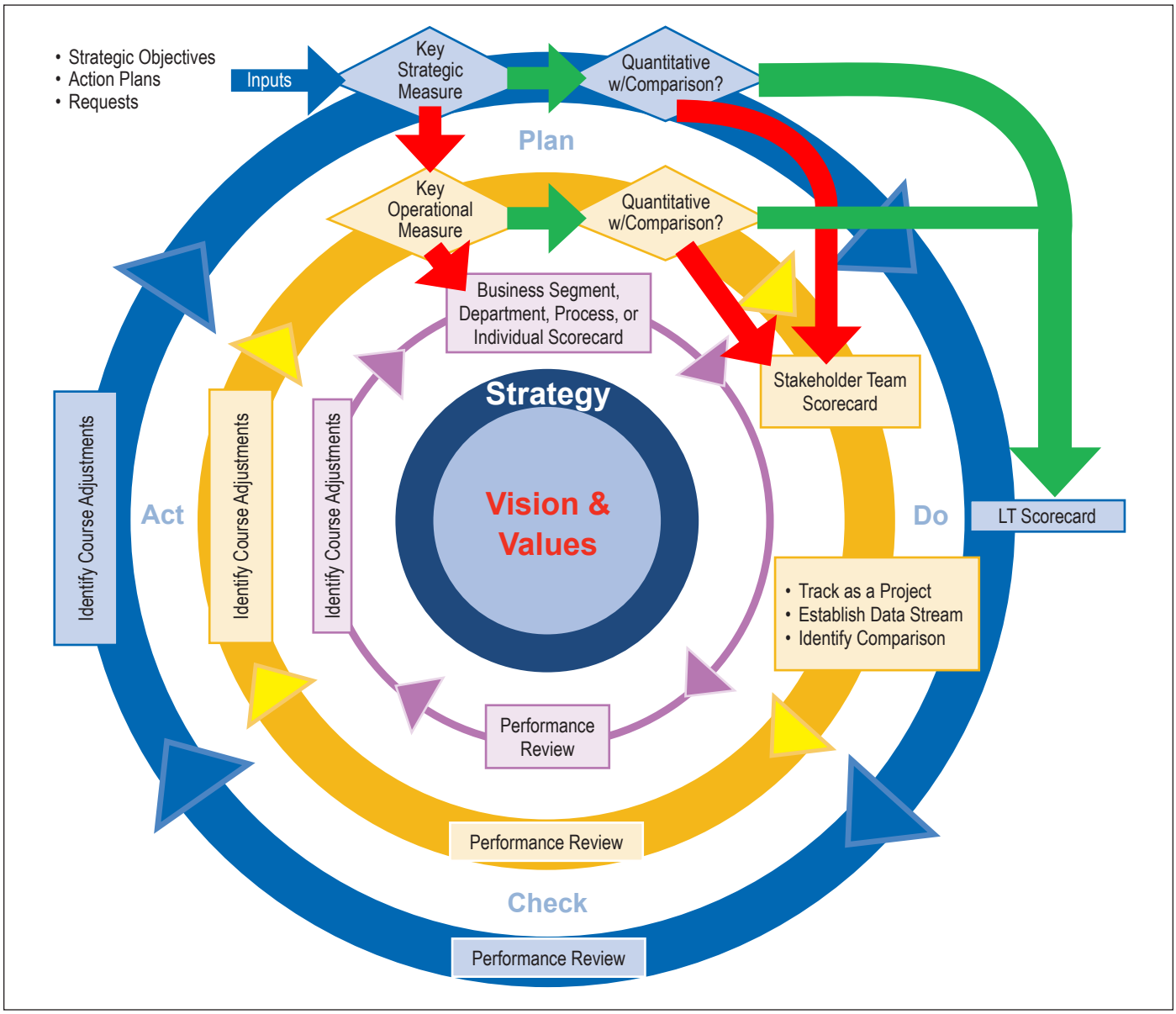
All scorecards are accessible via CNet, and individual measures may be either aggregated or drilled down. The performance of EOs is completely transparent for individual and team measures and goals. Collin treats all employees as true owners entitled to view the information. By linking individual, team, department, and business segment results to company results, all EOs have a direct way to identify cost impacts associated with their day-to-day processes. By using a combination of leading and lagging measures, Collin drives internal processes proactively while positioning itself externally to the business community. Both types of measures are needed to effectively manage the business.

The frequency of tracking is measure-specific and varies from real time for measures driven by the automated processes to daily, weekly, monthly, or quarterly. Goals are aligned with the measurement frequency, as is the frequency of review. All scorecards are aggregated for review in the appropriate leadership review meeting. Key measures are on the LT Scorecard (Figure 4.1-2). Results from all scorecards are available on CNet for use in support of continual improvement and continuous innovation.

4.1a(2)

Collin's ability to meet its goals and its stakeholder goals is the ultimate measure of its system's effectiveness. Collin tracks performance data to compare or position itself relative to the competition and best-in class companies. These data, in addition to being used for improvement, are also used to identify gaps among the competition, other role-model companies, and Collin. Twice a year, the Benchmark Team, headed up by the director of customer advocacy, conducts research relative to all LT scorecard measures and presents a formal report to the LT. This information is also used as input to the SPP. The research is conducted with similar companies and with companies outside Collin's business. The team looks at known benchmark opportunities (International Sharing and Benchmarking Alliance, EIC, U.S. Council for Electronics [UCE], Baldrige Award recipients, USEO, online publications and programs, etc.), as well as data from surveys, customer inputs, and at least one randomly selected benchmarking consulting firm. All information is compared with existing reports and data gathered in the past to help identify best-in-class competitors

Figure 4.1-1: Measurement Selection Process



and companies. As it identifies the best role-model practices, Collin correlates existing performance data to similar data from those companies that it considers best in class, and if a significant gap exists, a formal benchmark meeting is set up with best-in-class companies from within and external to the interconnect industry to compare practices. In this way, Collin determines opportunities for further improvement.

4.1a(3)

All customer data are entered into the CRM system, which is fully integrated with the CNet scorecards. CCAs summarize activity for key accounts, including any complaints, in their monthly reports that are posted on CRM. No customer action may be taken without consulting the information in CRM. Likewise, all actions must be entered into CRM. Establishing centrally located information on the customer is one of the ways that Collin sustains its core competency of *Expertise* and the strategic advantage of Personal Touch.

The Customer Survey ratings generate quantitative measurements on product performance versus requirements, relative importance, priorities, and relative level of interest in future business with Collin. Collin combines this post-transaction information with Baldrige self-assessments to overlay evolving customer needs against company capability assessments. It aggregates customer data by segment to discern segment trends, detect shifts in segmentation variables, and project future segment opportunities.

The cycle time for incorporating technical advances in design and manufacturing limits the slope of the learning curve for addressing future customer requirements. In addition, Contract R&D was created to focus on streamlining the process for

Figure 4.1-2: LT Scorecard

LT Scorecard Measures	Figure
Net Promoter Score	7.2-6
Overall Customer Engagement	7.2-7
Cumulative Number of Customer Referrals	7.2-8
Percentage of Available Repeat Business Won	7.5-8
Reliability	7.1-3
On-Time Delivery	7.1-1
Process Capability	7.1-8
EO Survey Results by Question	7.3-2
Sales by Business Segment	7.5-1
EBITDA	7.5-2

engaging manufacturing technology innovators with Collin to test, refine, and develop the innovators' ideas.

CCAs verify that complaints are coded by type for later Pareto analysis. CNet provides data on response time by all EOs involved in the resolution process. These data are aggregated, and the business segment manager presents the data to process teams for evaluation, verification, corrective actions, and process improvement. Results of complaint reviews and process improvements are published to EOs via e-mail. CNet files are updated with the complaint resolution results to provide information for future root-cause analysis. The Customer Stakeholder Team aggregates all complaint information annually and analyzes trends and patterns for common cause issues requiring systemic improvements.

CCAs monitor SMS chatter and incorporate information obtained in CNet/CRM.

4.1a(4)

Within the Measurement Selection Process (Figure 4.1-1), Collin has built a closed-loop feedback process. Through this process, information related to the operational health of the company is provided to all stakeholders. Collin also uses this loop to request needed changes to keep its system current with the changing needs of stakeholders and the overall business. A semiannual benchmarking review looks at Collin's output measures compared to other companies to identify changes in these measures. Yearly, Collin conducts a survey about its information system. The company is looking specifically for better information-gathering and analysis tools. During the 2012 process review for performance measurement, Collin identified the ability to achieve rapid response as a gap, and a measurement sensitivity review has been included in performance reviews as an area of focus for 2013.

4.1b

The LT uses the LT Scorecard (Figure 4.1-2) to determine organizational performance. Prior to each week's leadership review, the appropriate measures are analyzed comparing current performance to goal and past performance, as well as comparisons and projections. Additional analyses may include correlation or regression to related measures. The results of these analyses provide a picture of the overall health of the company. This supports Collin's Cs of Commitment and Courage. Any measure under review with a gap requires a corrective action plan initiated by the appropriate Stakeholder Team to ensure that the gap is lessened in a timely manner. The defined focus of the weekly leadership review ensures that performance related to all stakeholders is reviewed monthly and that strategy is continuously monitored.

The LT scorecard is included in the monthly AB report. If performance gaps are identified by the AB and they are not already addressed by action plans, the CEO assigns the gap closure actions to a LT member for follow-up.

4.1c

4.1c(1)

The results of all analyses reviewed during the leadership review are available on CNet for all EOs to review. In addition, all Contract R&D projects are reviewed a minimum of monthly, and any lessons learned are summarized on CNet. High-performing operations are easily identified and reviewed by business segment managers to identify process innovations or lessons learned. Significant lessons learned that may be applied to more than one team or department are posted prominently on the CNet home page and are added to the Leading Practices database. This relational database is a one-stop shop for EOs to learn about a process or product. It is fully integrated with CNet, CRM, and the enterprise resource planning system. The Leading Practices database provides a long-term repository for standard operating procedures and best practices, with easy recall through a robust search engine. Assigned subject-matter experts (SMEs) review entries to ensure accuracy and completeness of information.

4.1c(2)

Comparative data are required for all LT scorecard measures. Collin cannot determine success without putting it into the context of the competitive environment. The pursuit of comparisons ensures the ongoing knowledge of competitors. The combination of this information, other intelligence identified during the SPP, and direct feedback from customers is used to establish the performance projections in Figure 2.1-5. The analyses of these data and information are the responsibility of the Customer Stakeholder Team working in conjunction with the Benchmarking Team.

4.1c(3)

The core value of Courage identifies the Collin approach to continual improvement and continuous innovation (CI^2). During the leadership review meetings, Collin evaluates performance that demonstrates flat trends to determine if a

CI² Team should be assigned to investigate changes needed to improve performance.

The annual internal assessment of process begins with a review of performance over the past year and includes any corrective actions, CI² Team actions, or innovations related to the process. This review provides context for asking process-analysis questions.

When necessary, course adjustment or reprioritization is triggered by the leadership review. The communication process for the change is led by the appropriate Stakeholder Team, and a communication plan is executed, ensuring alignment of Partner Suppliers and stakeholders with the new priorities.

The Contract R&D group is focused on creating breakthrough innovation for the existing product and processes. Data from current processes and products available on CNet provide a baseline for the group's efforts.

4.2 Knowledge Management, Information, and Information Technology

4.2a

4.2a(1)

As previously described, the Leading Practices database is the repository for Collin's intellectual capital. When an EO is departing from Collin, he/she is asked if there are any processes, practices, or tips that he/she relies on that are not in the database. Since all EOs require a transition plan, sufficient time is available to capture information from the departing EO.

Information in Leading Practices may be shared with external stakeholders by placing links on their secure CNet portal. This ensures that the stakeholder will always have the most current information while retaining all document management activities. These stakeholders are also able to post links to share documents and information with Collin.

Use of Leading Practices has been established as an input for the Process Design and Management Process (Figure 6.1-1), where CI² Teams begin continuous innovation of a process. When a CI² or Stakeholder Team or the LT implements a process change to adopt a leading practice as a company improvement or innovation, the Performance Excellence group updates the corresponding internal audit checklist(s) appropriately to ensure that the change will be monitored for execution.

4.2a(2)

The Performance Excellence group monitors activity within Leading Practices. Reports highlight new entries and lessons learned that are added to existing entries. When emerging best practices are identified by the Performance Excellence group, an e-mail alert directing EOs to the information is sent out to all EOs. The Performance Excellence group mines the information in Leading Practices and shares it during weekly leadership review meetings; the group also creates a summary report for strategic planning. The Performance Excellence group conducts an annual analysis of the Leading Practices database to verify its continued accuracy and effectiveness.

4.2b

4.2b(1)

Accurate, timely, and reliable data are important to Collin's information system. Whether data are collected manually, by machine, by voice, or by LAN, data need to be reliable and properly identified within the system to ensure that the best decisions are made. To ensure data integrity, Collin always provides the input with a source and date so that the originator can be contacted to clarify any suspect information. When possible, automatic checks ensure that manually entered data are within preset limits such as number of characters or anticipated range of values.

The majority of the scorecard measures utilize the integrated systems to analyze and generate reports. The real-time nature of using bar codes to track materials and product through the automated equipment enables high levels of accuracy, integrity, reliability, and timeliness.

Collin utilizes multiple secure portals for its interactions with customers and stakeholders. EOs have role-specific permissions for write functionality in the integrated system. Password protection for all users of CNet and its secure portals is required. Passwords are changed every 60 days, with no repeats over a three-year period. Firewalls and filters protect Collin's data and information from outside threats. Collectively, these measures enable data, information, and knowledge security, as well as confidentiality.

The ITS group analyzes the current approaches for data and information properties annually during its process assessment. It benchmarks the approaches by participating in the annual *Manufacturing Sector* Best Plant IS Competition to see how its system compares with the information systems of businesses across the nation.

The most recent improvement was fine tuning the role-specific permissions by adding four new roles to more accurately match the types of information to which the user would have access.

4.2b(2)

All EOs have access to CNet, either at their work locations or in their team spaces based on their specific roles and passwords. EOs are provided a remote secure access to CNet as well. Customers and other stakeholders are provided secure portals to enter specific areas of CNet unique to their needs.

4.2b(3)

The chief information officer (CIO) and ITS group constantly monitor developments in hardware and software in use at Collin. Industry reports are backed up with visits to Partner Supplier sites to determine which technologies will be deployed at Collin. For example, EOs wanted to make use of tablet computers. Using a modified version of the Product Development and Innovation Process (Figure 3.2-1), the ITS group gathered EO input and researched available technology

and its compatibility with Collin systems. Consequently, the initial requests were denied since there were security issues. However, since the original need wasn't met, the request stayed open. In 2012, tablet functionality met ITS requirements and the Product Development and Innovation Process was initiated and included a formal test plan. After rigorous testing by ITS and end users, tablets are now in place where the business need is evident.

Changes to software are also rigorously tested by the ITS group and end users prior to company roll-out. This testing is critical to ensure that the integrated systems remain fully integrated as new revisions to software are deployed. ITS staff members use LAN to push updates to all impacted users.

Every year, the ITS group conducts a user survey. The questions in the survey identify the effectiveness of ITS in providing hardware and software that are user-friendly. For example, recent feedback identified dissatisfaction with the split keyboards in conference rooms, so the ITS group replaced the split keyboards with ergonomic wave keyboards; an immediate positive response was received from EOs.

The ITS scorecard reports system availability and security.

4.2b(4)

Collin observed the impact of not having sound emergency preparedness for IS during recent hurricanes and floods that impacted competitors' supply chains. The ITS group undertook a deep process assessment in early 2011. The results of that assessment led to the current Emergency Availability Plan. In short, redundant off-site servers with all Collin applications are available should a local server fail. Local servers are backed up to those locations every eight hours around the clock. Should the Nashville facility be unable to support CNet applications, one of the off-site locations is seamlessly transitioned so that users are unaffected with respect to data and information availability. Partner Suppliers have an inventory of needed hardware and have agreed to provide required hardware within 24 hours. Another result of an assessment was the glaringly obvious detail to not put mission-critical equipment such as servers or generators in the lowest level of a building. While subsurface levels tend to stay cooler, those levels are also the first place subject to flooding.

The combination of data and information availability and hardware availability provides Collin assurance that information availability is not disrupted and hardware replacement is available in hours should there be a catastrophic event.

Category 5: Workforce Focus

5.1 Workforce Environment

5.1a

5.1a(1)

Vincent Daubert conducts the HR Capability Assessment annually to identify the capabilities necessary in Collin's advancing industry. The capabilities are a specific element of the strategic (long-term) and action (short-term) plans resulting from the SPP (Figure 2.1-1). These plans identify the subjects and skills necessary to educate and train EOs to satisfy upcoming technical and leadership requirements and to ensure that the appropriate core competencies are in place.

The quarterly Capacity Study ensures a match between position requirements, required competencies, and qualified EOs for each position. This study is used to assist in resource allocation for execution of the strategy and action plans to be certain that staffing levels of the appropriately skilled people are in the right place. As production requirements change, the study projects needed staffing levels and balances allocation of EOs.

5.1a(2)

Collin uses multiple methods to recruit new EOs. For example, college recruiting starts with the presentations that the technical staff makes to regional universities and continues through job fairs. Online tools are used to identify qualified, experienced candidates. In a recent change, competition for the highly sought-after intern positions led Collin to use three tweets from each candidate to select interns for Contract R&D.

The selection process is a series of progressive behaviorally based interviews. The first interview is a phone interview to ensure that there is no unintentional bias in the initial screening process. Formally structuring questions and the analysis process was a significant change in 2010. This change removed much of the subjectivity of the interviews and facilitates better diversity in the ideas, cultures, and thinking of the workforce.

In order to ensure that Collin continues to build a talented and diverse workforce, it uses an Attribute Model that is applied to all candidates. This model incorporates desired attributes such as personal and professional motivation, leadership potential, innovative skills, team orientation, diversity, technical knowledge, and understanding of customer and Partner Supplier concepts.

Once hired, all Collin EOs attend a NEOO class during their first week of work. Orientation helps new EOs become familiar with Collin's Cs, products, and strategy, as well as employee benefits and opportunities, directly from a member of the LT. The orientation materials are also available on CNet for reference. Orientation continues for the first 90 days with ongoing position-specific training and regular meetings with assigned mentors.

5.1a(3)

Collin accomplishes work in a team-based environment. A primary benefit of the team structure is that it promotes cooperation and collaboration both within and among teams. Strong team representation on the Human Resources Council (HRC) helps provide the forum in which members of different teams can identify common issues that, when addressed between teams, provide Collin with improvements in effectiveness and efficiency that leverage the Cs. This approach provides a venue for a healthy review and dialogue about the human resources (HR) issues incorporated into Collin's work system.

Collin uses the SPP (Figure 2.1-1) to develop and communicate company objectives and initiatives. Once objectives are established at the functional level, these objectives form the foundation for team business updates. The LT and team leadership commit to objectives that support companywide initiatives, maintaining the Personal Touch valued by customers and exceeding company expectations. As shown in the CPM Process (Figure 5.2-1), business plans and strategies link to individual EO performance.

5.1a(4)

The HRC analyzes the results of the Capacity Study and keeps communication open with all EOs on any potential changes. A communication plan is created and executed by members of the HRC and LT.

Collin has deepened its competencies over the past five years. Opportunities for EOs to begin development in advance of process and product changes are communicated by the HRC when the capabilities analysis is complete. EOs have the opportunity to select the development path identified for the new competency when they set their annual goals. When there are not sufficient volunteers, leaders solicit EOs where such development would be in their career path.

The "Collin Spark" and "Creativity" courses ensure that EOs have the required attitude and aptitude to support CI^2.

In the past ten years, the workforce has only increased to support sales growth. When growth is projected, EOs are encouraged to refer candidates that would be a fit with the Collin Cs. Currently, no reductions are projected for the workforce beyond normal attrition.

Figure 5.1-1: Key EHS&S Measures and Goals

Measure	2013 Goal
Office Ergonomic Issues	0
Participation in Wellness Activities	90%
% EOs at Wellness Risk	15%
Security Breaches	0

5.1b

5.1b(1)

In today's marketplace, the integration of EHS&S practices into Collin's daily business is critical to the company's long-term success. To this end, Collin has developed 50 minimum standards that govern work activities such as ergonomics, optimum lighting, noise, personal protective equipment, accessibility, and safety. All directors and team leaders are responsible for ensuring that these standards are being met or exceeded within their areas of responsibility. These standards also serve as the basic audit criteria for the Collin EHS&S Audit Program. Collin measures performance to the standards in each group through monthly self-audits and biannual audits by the EHS&S Core Team.

EHS&S goals are established annually within each department and work team in production and research laboratories (Figure 5.1-1). Many of the goals for safety are common; however, laboratories and offices have goals specific to the location.

5.1b(2)

All services and EO support programs are initiated through the HRC based on suggestions from EOs, Process Improvement Teams, or CI^2 Teams. Evaluation of support services, benefits, and facilities using satisfaction survey data (Figure 7.4-1) is part of the HRC and LT review cycles.

In order to build and enhance the work climate for employee well-being and satisfaction, Collin offers many services and facilities. For example, the Association of Collin Employee Owners (ACE) sponsors special-interest clubs and a variety of other activities in which EOs and their family members can participate. The Greenway is available for employees and their families for picnics and activities such as canoeing, volleyball, and softball, as well as for visits to the children's playground. In 1999 Colin started a child care center that offers discounted child care for EOs of both Collin and local Partner Suppliers.

Collin is dedicated to promoting the health and wellness of its workforce. Collin's substantial investment in health and wellness initiatives reflects its commitment to creating a more progressive and rewarding work environment that contributes to EOs' physical and mental well-being. For example, Collin recently remodeled its state-of-the art fitness center. It offers a variety of convenient services, most of which are free of charge. The fitness center is managed by fitness experts who train employees on the proper use of fitness equipment and assist them in developing personalized fitness plans accommodating the diverse needs of EOs. The fitness center also promotes wellness through education, individual counseling, on-site screenings, and other convenient services. Collin has an on-site medical clinic and full-time nurse so that EOs can receive services such as immunizations, basic checkups, minor medical treatments, physical therapy, and massage therapy. Results from the EO Survey and Wellness Survey indicate that EOs are satisfied with the Greenway and fitness center.

Additional services and opportunities provided and supported by Collin include the Employee Credit Union, the Employee Assistance Program, defensive driving classes, the Tuition Reimbursement Program, on-site dry cleaning, adoption assistance services, travel services, sabbaticals, and participation in community activities. Employees can bank paid-time-off (PTO) hours not taken in a sabbatical account. When 4–6 weeks of PTO are accrued in the sabbatical account, the EO is eligible to spend the time away from work with full benefits. The single caveat is that the EO must engage in at least one development activity while away and report the lessons learned upon return to Collin.

5.2 Workforce Engagement

5.2a

5.2a(1)

Key elements of employee engagement are determined every three years using a detailed analysis of the past three years of results from the EO Survey. Correlation and regression studies between individual questions and overall engagement and satisfaction are run for each demographic segment of the survey. The results of these analyses are used by the HRC to identify needed CI² Teams. Where results are inconclusive, HRC recommends changes to the EO Survey questions to acquire the needed information.

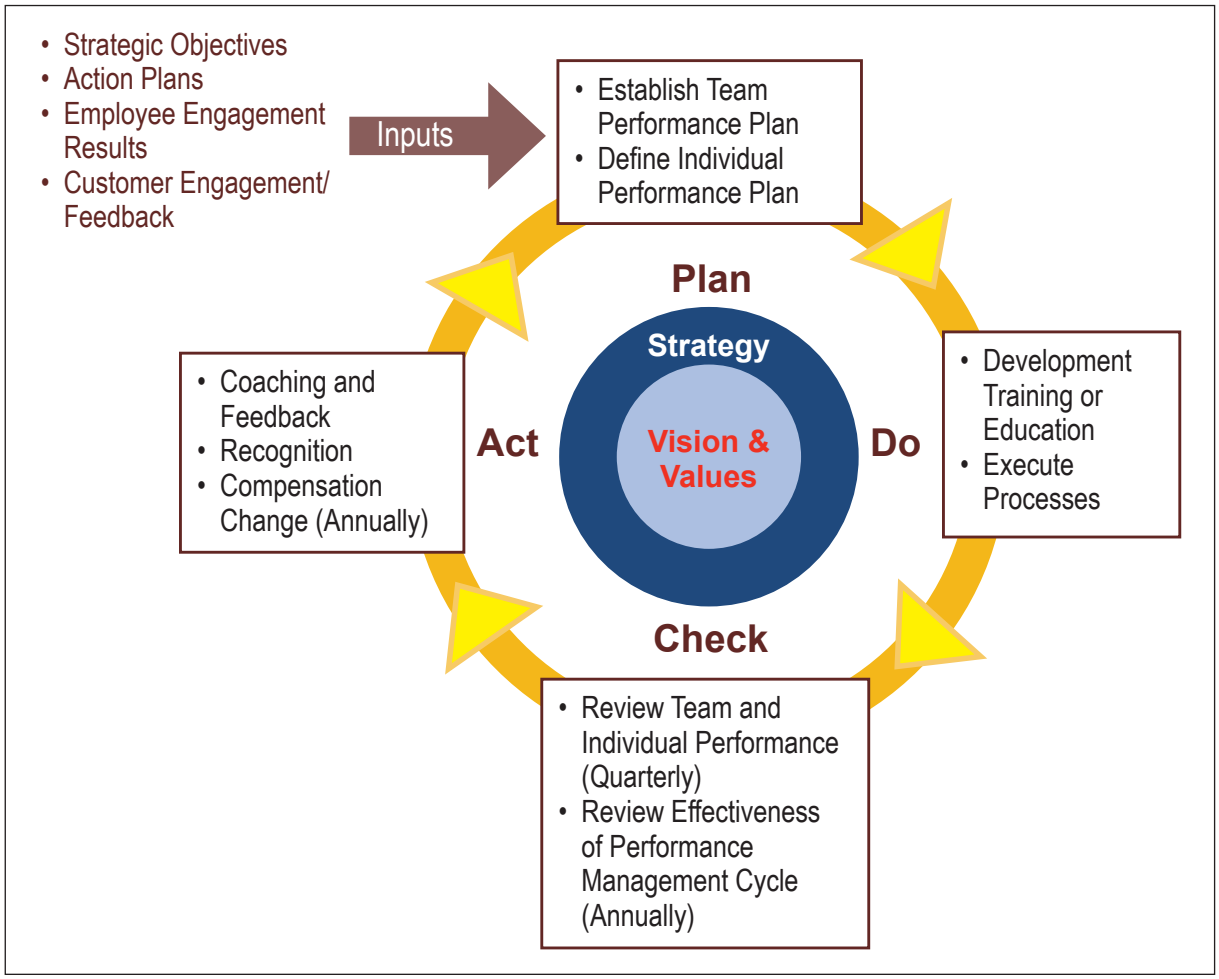
During the last process PDCA for determination of the key elements of engagement, Collin identified that the HRC would be the group best prepared to deal with the results of the correlation analysis. A basic statistics minicourse was developed and has been used by the HRC as well as the various Stakeholder Teams to improve EO understanding of correlation and regression studies.

5.2a(2)

The EO Stakeholder Team monitors and improves the Collin culture. This team carefully analyzes the EO Survey results aligned with communication, achievement of high-performance work, and appreciation of diversity of thoughts and ideas by looking for dips in sustained improvement or comments indicating an emerging need. The Stakeholder Team then addresses each issue it identifies either one on one, as in the case of a leader practicing guarded communication, or at the team level, as in the case of a team reporting less than desirable levels of work engagement. Careful analysis is completed the following quarter to determine if the issue has been resolved or if additional intervention is necessary.

Collin enters the *Best Career Location: Small and Medium Businesses*® award program to receive reports and validate that trust remains an important element of engagement and part of the foundation for the Collin culture.

Figure 5.2-1: Career Path Management Process



5.2a(3)

All EOs participate in performance management: each EO's performance is established and then evaluated for a 12-month cycle (Figure 5.2-1). The cycle starts with the SPP as strategic objectives and action plans are cascaded. Each EO identifies his/her performance goals aligned with the strategy and action plans, as well as personal development goals.

At Collin, EOs have primary responsibility for their own development, but they are encouraged to work with their supervisors to create individual development plans. EOs and their supervisors identify development opportunities based on a number of inputs. First, they review the Competency Model for the EO's current position. (Separate Competency Models have been defined for the LT, directors, team leaders, team members, and individual contributors.) Since Collin's Competency Models define the characteristics and skill sets needed for effective performance in each position, this review defines basic developmental needs. Second, they review the objectives and action plans from the SPP to identify the specific knowledge and skills the EO will need in order to achieve his/her individual development plan and contribute to the achievement of Collin's overall objectives including CI^2. Finally, they review the EO's career objectives to identify development opportunities that will support the objectives. The EO works together with the supervisor to prioritize the opportunities identified and to determine appropriate developmental activities. In addition to formal education and training, these activities may include self-directed learning activities, work experiences, developmental assignments, and professional association memberships.

During the 12-month performance cycle, EOs receive coaching feedback on a quarterly basis concerning performance, leadership potential, development opportunities, engagement in improvement and innovation, successes, and opportunities for improvement.

In response to its 1999 Baldrige feedback report, Collin expanded the development planning process for the LT and directors to include a 360-degree assessment of their individual performance against the appropriate Competency Model. Interviews, one-on-one meetings, and other 360-degree feedback tools are used to gather input and prepare a gap analysis. The results are fed back to the leader and serve as an additional input to the development planning process described above. In 2006, Collin initiated 360-degree feedback at the team level to measure the effectiveness of team synergy. Results confirm that both measures of effectiveness (EO and team) provide better input to the development process.

At the end of the annual cycle, each EO's performance is assessed against his/her performance plan and integrated with results of customer surveys and Baldrige assessments. The EO's compensation is adjusted according to established formulas. The annual compensation of the LT is based on the same formulas applied to all other EOs. These formulas have been agreed to by the entire workforce.

Performance plans are fed back into the SPP via CNet so that progress can be monitored and future plans for the company can be adjusted accordingly. This step has a direct relationship to the value of the ESOP. EO Excels is the Collin-implemented suggestion and incentive award system. It is based on innovative suggestions submitted by EOs not in senior leadership positions. This system allows an EO to submit and implement suggested process improvements or technology innovations. Each suggestion is reviewed in a team forum, and if the idea is implemented, the implementer is compensated based on 1% of the potential benefit that is assessed for the company.

5.2b

5.2b(1)

EO satisfaction is measured through the use of regularly scheduled company meetings, one-on-one meetings, skip-level reviews, focus groups, exit interviews, and the EO Survey. Overall engagement and satisfaction are determined through algorithms based on leading employee-engagement research.

Since 1989, the EO Survey has given the LT quality insight into the pulse of the workforce. The survey is designed and coordinated by Interskill, which utilizes focus groups throughout the organization to design the survey and then administers the survey on a quarterly basis. The survey uses a standard Likert differential rating scale that ranges from very satisfied ("10") to very dissatisfied ("1"). Interskill presents results data to the HRC and the LT at their next scheduled meetings. Interskill helps each group establish improvement priorities based on gap analysis; for example, the difference between the importance, satisfaction, and engagement ratings for each attribute ranked by their coefficient of correlation; the strength of the relationship between the attributes; and the overall rating. During these reviews, the HRC and LT examine and refine attributes, request additional research using focus groups and/or critical-incident techniques, and identify potential solutions to address critical performance gaps.

Collin has maintained EO turnover well below the industry average (Figure 7.3-8). EOs are very engaged in two-way dialogue with leaders of the company through the multiple blogs identified in Figure 1.1-2. Blogs enable leaders to understand where issues may exist and take appropriate action to address issues regarding morale and working conditions.

5.2b(2)

EO engagement is directly correlated with Collin's measures of customer engagement. Analysis has shown that a one-point increase in EO engagement equates to a four-point increase in customer engagement. Safety and product quality are also directly related. Every 1% change in safety results equates to a similar change in product quality and vice versa. Currently, analysis is underway to determine if there is a correlation between employee engagement and Net Promoter Score.

5.2c

5.2c(1)

Collin's training programs available through Collin U are divided into five different areas: *technical,* including ITS; *managerial,* including leadership and organizational dynamics, innovation, ethical behavior, and team development; *operations,* including manufacturing and customer service; *quality management,* including LSS, statistical process control (SPC), improvement and innovation, and customer relationship building; and *administrative,* including CNet integrated applications, desk reference training, and EHS&S.

Collin offers an abundance of training classes in each of these areas, as well as event-based training driven by strategy and competency needs. Collin strongly believes that people development is more than just training. People development includes on-the-job (OTJ) experience, self-directed learning, special projects, assignments to teams, and coaching from managers and other team members.

Training delivery methods have evolved with technology. Many courses, including the annual ethics refresher, are offered through interactive online learning. NEOO includes detailed content on ethical business practices.

CCAs are SMEs and facilitate sessions on identifying unarticulated customer requirements and perfecting the Personal Touch.

EOs are required to complete an annual online refresher course on the Collin Business Conduct Procedure. A perfect score on the evaluation is required for completion of the course.

The utilization of quality standards, including metrics, performance standards, continuing improvement efforts, and quality controls, is part of NEOO. "Quality Systems for Tomorrow" is the program that sets the stage for Collin's EOs to embrace and utilize quality management in every aspect of their lives. LSS concepts are introduced in a simulation exercise where EOs must create Lean process flow to succeed. Three levels of SPC are taught in local institutions; a basic level is taught at the Central Community College in downtown Nashville. Both undergraduate- and graduate-level college courses are taught at Peak State University. The Product Development and Innovation Process (Figure 3.2-1) and LSS techniques are ongoing topics for lunch-and-learn sessions.

As part of creating their own development plans, EOs participate in self-assessment sessions. These sessions are designed to allow individuals to point out areas in which they may need additional knowledge. This enables an EO's development plan to address self-selected and superior-identified needs. Team leaders, department managers, and senior leaders are aware of EO development plans and reinforce the desired learning on a daily basis during walkabouts and normal interactions.

Managing transitions of EOs at Collin requires careful planning to ensure that the company is positioned to buy back owner shares and transfer knowledge. A member of the Performance Excellence group interviews the departing EO to determine the critical knowledge needed to be added to the Leading Practices database to ensure that the information is not lost.

5.2c(2)

Before any formal education or training approach is made available, it is piloted or tested with a representative sample of the target audience. In addition, course evaluation forms are completed at the end of training, and the results are tabulated and evaluated to determine teaching effectiveness. Modifications are made to both the training content and approach, based on the feedback. Finally, post-training assessments are also conducted by the EO and his/her supervisor three and six months after the training has been completed to determine the benefit the course has had OTJ and its impact on actual job performance. Within the past year, assessments have been converted to online surveys to make collection and analysis of change in proficiencies more efficient.

5.2c(3)

Historically, a primary driver of Collin's success has been the innovation and commitment of its EOs. Recognizing this fact, Collin implemented formal career paths for technical, factory (i.e., managerial, operations, quality), and support (i.e., managerial, CCA, administrative) positions—all of which are necessary to make Collin successful. The technical career paths provide a clear career roadmap for all technically oriented EOs as well as an advanced leadership growth roadmap for key technical positions. The other career paths, which are designed to provide development for managerial, operations, quality, and administrative careers, follow a similar outline. The education and training program integrates these roadmaps, and the CPM process enhances Collin's ability to match employment needs with recruitment and retention efforts for a high-quality workforce. The career paths are subjected to an annual review by the HRC. This ensures that Collin develops the talent and skills the company needs. One recent change has been to add strategic use of social media to the career path for CCA positions.

6.1 Work Processes

6.1a

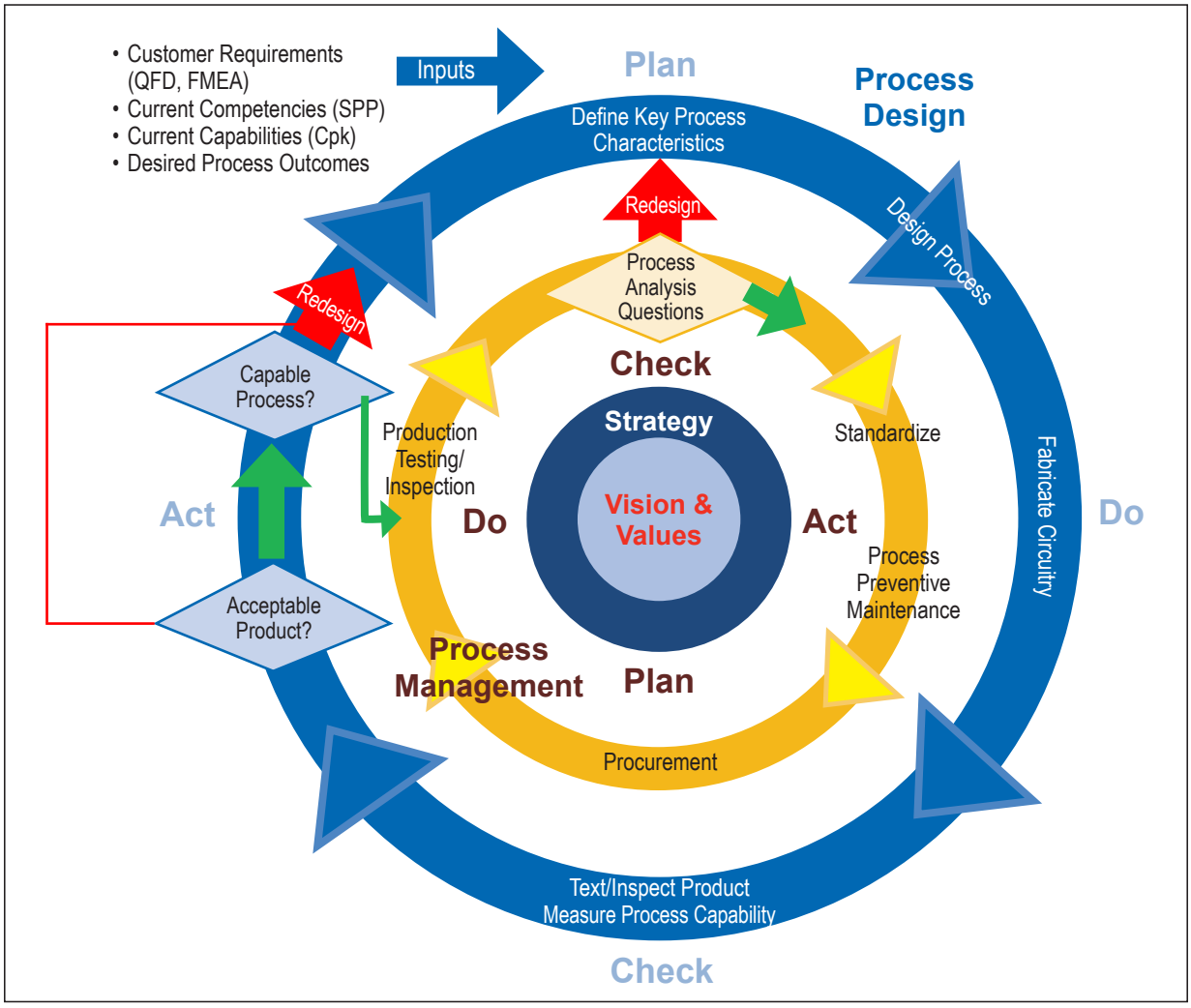
6.1a(1,2)

Product development and process design are integrated to ensure manufacturability of each product. The Product Development and Innovation Process (Figure 3.2-1) utilizes quality function deployment (QFD) to define the key product characteristics (KPCs) and process requirements. The product design is rigorously tested, including customer testing, during the prototype phase.

Multilayer printed circuit boards are designed to uniform rules that specify characteristics, such as line widths and spacing with standard hole sizes and locations. These rules are adapted to individual customer requirements. Design is interactive, with customers accessing design information through a secure CNet portal during product design. Design changes may be the result of evolving requirements or conditions, or they may be the result of new technology that results in products of higher value with lower cost for Collin. After approval of the prototype, the Operations group completes a failure mode and effects analysis (FMEA) to further refine KPCs and process requirements in the first step of the Process Design and Management Process (Figure 6.1-1). When process modifications are required, the in-process laboratory ensures that the changes do not affect the capability of the process.

Each process or series of processes are designed to meet work system requirements and achieve product and/or process key characteristics in an effective and efficient manner. Inputs to the blue loop of the process design PDCA are shown in Figure 6.1-1. Inputs may also include new technology being introduced or a change in the process outcome to improve agility. The gold process management PDCA addresses improvement in cycle time, productivity, cost control, and other effectiveness and efficiency factors in the process analysis questions (Figure 6.1-3).

Figure 6.1-1: Process Design and Management Process



Key process requirements are identified using the input from process design (Figure 6.1-1) and are further refined during FMEA analysis. Key processes are identified in Figure 6.1-2, and the requirements for these processes are outlined in Figure 6.1-4.

6.1b

6.1b(1)

The Process Design and Management Process (Figure 6.1-1) is maintained and improved through the use of the design guidelines that are continually updated in CNet through knowledge and application of updated techniques and learning experiences. Understanding end-use requirements and ensuring capable processes throughout the prototype phase are critical to prototype acceptance. The Process Design and Management Process is used to implement key processes (Figure 6.1-4). The Check and Act steps of PDCA are critical to ensure that the process outcomes meet all requirements using the outlined indicators.

Production processes are precisely controlled by programmable controllers with a process capability designed to operate with a minimum Cpk of 1.45. Some individual processes are designed and controlled with a Cpk as high as 2.33. The processes are sampled throughout production by SCADA to ensure that they remain "in control," and the mean values and variance are logged in CNet for predictive and prevention analyses. The Performance Excellence group monitors the summary process performance reports to analyze Cpk to determine periods of greater stability and standardize the process gain. Corrective and preventive actions are identified when control is not maintained.

Test coupon holes are automatically designed in all boards to provide test-plated holes for process verification and assurance that the production process performs as designed. By utilizing a process design that is well within the design tolerances, Collin ensures that products meet customer requirements. Collin's products are designed to operate in extreme environments.

To ensure performance on a sample basis, boards are subjected to extreme environmental conditions to verify compliance with customer requirements and to ensure reliable lifetime operation. These tests are performed in the process laboratory.

A prime customer requirement is OTD. Managing process throughput is the best indicator that the product will be ready in time for scheduled delivery. Results for throughput are shown in Figure 7.1-9.

Figure 6.1-2: Work Systems, Key Processes, and Enabling Processes

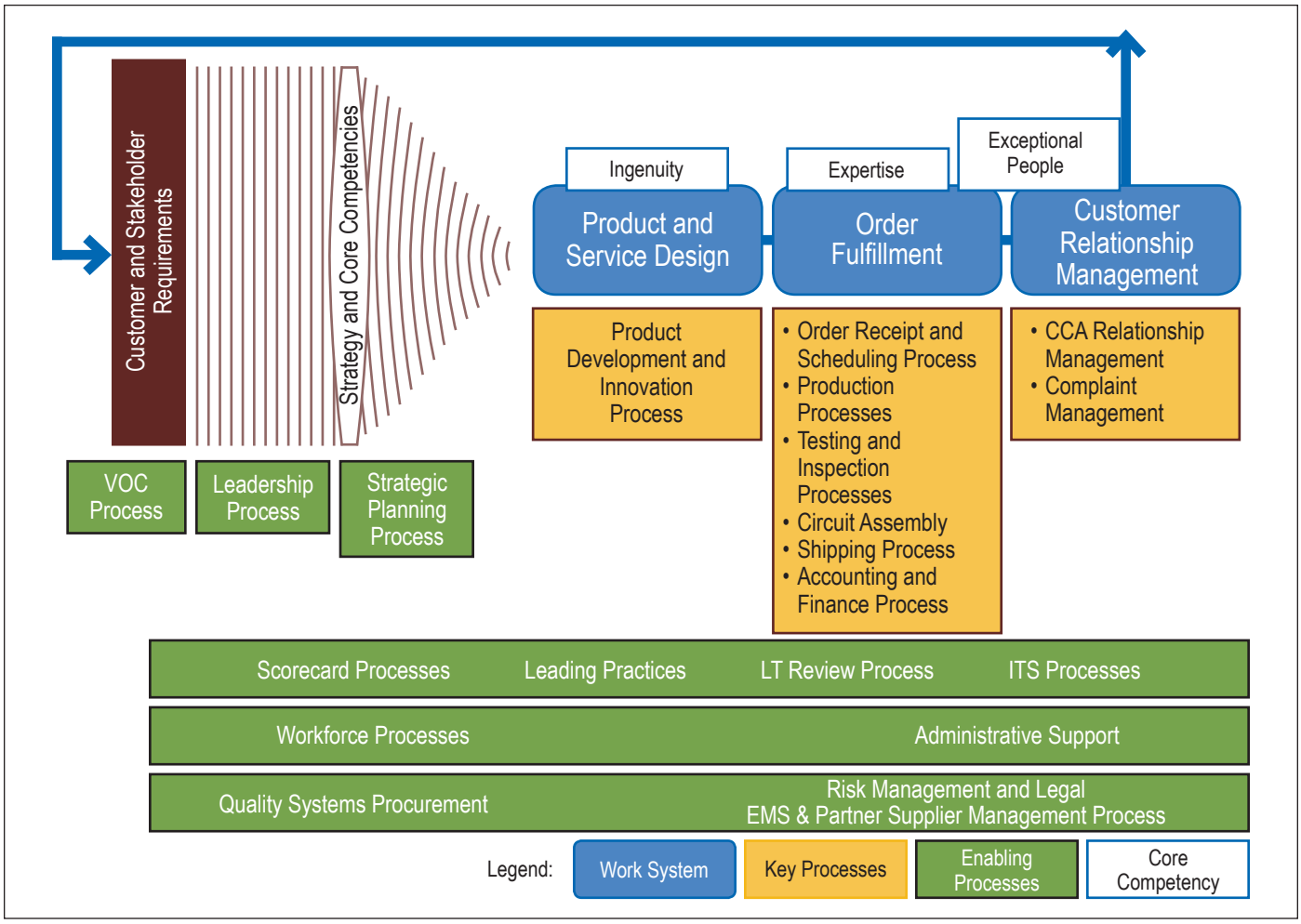


Figure 6.1-3: Process Analysis Questions

Process Analysis Questions
Are we delighting customers and meeting their expectations with this process?
Are we wasting materials in this process?
Is there a way to improve the cycle time of this process?
New Questions
Can we reduce energy consumption with this process?
Can we reduce materials that have an unfavorable impact on the environment?

6.1b(2)

Collin has identified enabling processes (Figure 6.1-2) required to support successful execution of the value stream key processes. These processes are identified during the SPP when the overall work system is revisited annually. Each enabling process undergoes the same scrutiny as key processes. Requirements are identified using the Process Design and Management Process, and processes are deployed with use of appropriate control points to ensure that these processes consistently produce acceptable outcomes. Enabling processes are assessed a minimum of annually, and process changes are made as needed. For example, assessment of the Leading Practices database identified the need to reorganize the content to better align with market sectors. A CI^2 Team was created

Figure 6.1-4: Key Process Requirements and Indicators

Key Process	Process Requirement	Indicator
Product Development and Innovation	Exceed customer requirements through use of capable processes	*Prototype Acceptance* Process Capability (Figure 7.1-8)
Order Receipt	Accuracy, responsiveness to inquiries or changes	*Error Rate* *Responsiveness*
Scheduling	Accuracy, appropriate lead time	*Error Rate* *Lead-Time Compression*
Production Processes		
• **Material Prep.**	Dimensions, cleanliness, no surface imperfections	*SPC Defect Chart*
• **Imaging, Developing, Etching**	Dimensions of lines and spacing, no shorts, no opens	*SPC Defect Chart*
• **CBDP**	Dimensions of lines and spacing, no shorts, no opens	*SPC Defect Chart*
• **Laminating**	Dimensions, cleanliness, no delamination of layers	*SPC Defect Chart*
• **Drilling**	Hole size and locations, cleanliness of holes	*SPC Defect Chart*
• **Plating**	Thickness, adhesion of plating	*SPC Defect Chart*
• **Circuit Assembly**	Component accuracy, location dimensions, no missing components, no shorts or opens	*SPC Defect Chart*
Testing and Inspection	Component accuracy, location dimensions, no missing components, no shorts or opens	*SPC Defect Chart*
Shipping	Accuracy, timeliness	OTD (receipt by customer) (Figures 7.1-1, 7.1-9)
Billing (Accounting and Finance)	Accuracy, timeliness, responsiveness to inquiries	Billing Accuracy and Timeliness (Figure 7.1-10) *Responsiveness*
Procurement	Accuracy, timeliness, cost effectiveness	*Error Rate* *On-time Receipt*
CCA Relationship Management	Long-term relationships managed through the Personal Touch	Customer Survey Results (Figures 7.2-1 through 7.2-4 and 7.2-6 through 7.2-7)
Complaint Management	Prompt, accurate resolution with permanent preventive actions	*Complaint Resolution*

Note: *Italics identify indicators with results available on-site.*

to establish the design criteria and implement the changes. As a result of this team's efforts, the time to search has been reduced from an average of 90 seconds to less than 15 seconds.

6.1b(3)

The PDCA continuous improvement cycle is embedded in the Collin work system and key and enabling processes. Process improvement is a way of life at Collin. Each process operates within the process management cycle. The process analysis questions (Figure 6.1-3) are used a minimum of annually to identify potential opportunities. CI^2 Teams use LSS techniques to innovate products, advance performance, and reduce variability.

6.2 Operational Effectiveness

6.2a

New technology is a constant driver for meeting customer needs while controlling cost. The Chemically Bonded Deposition Process (CBDP) developed by Collin in 1998 was recognized by EIC as a best practice and is now deployed under Collin license across the industry for low current densities and a very high number of lines. It uses a deposition process on bare substrates and does not utilize copper-etching techniques. This process results in fewer numbers of layers, smaller and lighter boards, and improved reliability. Production capabilities were established in 2002 as volume exceeded the laboratory capacity. The prototypes built in R&D rely on nanotechnology and will produce a lower-cost interconnect solution utilizing carbon fibers placed on substrates in ultra-fine lines. These prototype designs are currently in customer evaluation.

Closed-loop controllers monitor and correct processes. The best prevention tool to improve quality and reduce cycle time and cost is control through robust process capability studies and ongoing process control. All processes are designed to operate within a minimum Cpk of 1.45. Changes in any parameter must meet the minimum Cpk requirement. This has resulted in quality levels with yields so that high defects are measured as defective PPM opportunities.

All inner and outer layers of boards are automatically identified to enable continuous tracking throughout production and to maintain complete traceability records on CNet. The identification on the boards automatically alerts the production process for any changes as an individual order proceeds through production.

Circuits are designed with an external test point used as an indicator of fault coverage percentage. Programmable testing and inspection equipment within the production line ensure high quality without manual intervention. The testing laboratory is focused on quality assurance and the reliability testing required when qualifying a design for customers.

Unique circuit identification has eliminated virtually all errors associated with handling, packaging, and shipping.

6.2b

Suppliers are classified into two categories: Partner Suppliers and vendors. Partner Suppliers furnish raw materials such as roll copper, roll substrates, copper-clad sheets, inner-layer bonding material, and precious metals (i.e., copper, lead, and gold for plating and deposition). Partner Suppliers furnish computer software and hardware, education and training, uninterruptible backup power systems, and EMS assembly services. Vendors furnish drill bits and other commodity items such as office supplies.

Qualification for Partner Suppliers (P.1b[3]) is rigorous to ensure consistently high-quality materials and service. Partner Suppliers must demonstrate appropriate core competencies, capabilities, and capacity, as determined through a supplier audit, a source inspection, and receipt inspections. Results from receipt inspections that demonstrate consistent compliance with requirements are grounds for certification as a Partner Supplier; acceptance is then based on supplier certifications and sporadic quality assurance inspections.

Vendors are qualified through historical performance that is compliant with requirements such as product quality, timely delivery, and cost.

For each Partner Supplier and vendor in CNet, performance against five indicators is tracked:

1. Quality
2. Cost
3. Availability and OTD
4. Technology
5. Continuous Improvement

Of these, quality, cost, and OTD have a direct impact on Collin's ability to meet its customers' demands.

Collin's goal is for all Partner Suppliers to achieve preferred supplier status. To qualify, the Partner Supplier must rate above 95% overall and above 90% on each performance dimension. Results are shown in Figure 7.1-15.

All Partner Suppliers have secure portals to CNet in order to monitor the ratings they are receiving. When a problem arises, Collin notifies them electronically, and they are expected to initiate corrective action immediately. If quarterly ratings indicate that a Partner Supplier would benefit from attending a Collin training program, it is invited to attend.

Since Collin remains on the cutting edge of technology, Partner Suppliers are eager to tap into that knowledge and the experiences that will be necessary in future business dealings with any company in the multilayer printed circuit board business. Partner Suppliers are also willing to share comparative and benchmark data with Collin in order to help it remain on the cutting edge.

6.2c

6.2c(1)

No aspect of the business is more important than providing a safe work environment for employees while operating Collin's facilities. Collin has implemented an aggressive EHS&S program consisting of mandatory safety and ergonomic training, self-audits against EHS&S minimum standards, an ERT, and line management ownership of safety initiatives. The EHS&S Core Team monitors and improves ongoing safety processes for the company. EHS&S objectives and target metrics are integrated into individual performance plans at all levels of the company.

Collin has consistently maintained one of the lowest recordable incident rates (Figure 7.3-3) in the entire industry.

Any incidents are responded to with a safety stand-down to enact immediate containment of the problem. The incident is thoroughly investigated within the work setting using root-cause-analysis methodology. Contributing factors are identified, and processes are modified to prevent recurrence. Results of the investigation are shared with the EHS&S Core Team and may be communicated companywide when the lessons learned have broad applicability.

6.2c(2)

For the past ten years, emergency readiness has been a seamless element of the business processes at Collin. Prior to that, processes ensured that air and water treatment and ITS processes were covered by backup generators in case of power failure. In 2002, a Process Improvement Team (the predecessor of today's CI² Teams) was created to integrate emergency readiness into one comprehensive plan. Team members from EHS&S, ERT, and ITS were joined by EOs from technical, factory, and support areas. This improvement team used the Process Design and Management Process to upgrade processes, address prevention more fully, and identify plans to rapidly recover from disasters and emergencies and to provide continuity of operations.

The resulting Business Continuity Plan is modeled after the Spill Prevention Containment and Countermeasures Plan required by the EPA to address hazardous materials in production. Continuity plans include backup energy generation for key production areas, including treatment and reclamation facilities and ITS, so that there is no disruption based on loss of electricity. The generators are set to recover in less than 1.5 seconds. This timing became critical when flex circuitry processes were introduced. Roll-to-roll processing traditionally has a clean-up period of up to one hour when power is disrupted. The rapid response of the backup power eliminated the lengthy clean-up and restart processes. In 2011, these generators were moved from the lower levels to external berms above the flood plain.

Figure 6.2-1: Safety Goals

Measure	2013 Goal
Recordable Incident Rate	0
DART	0
Accidental Exposures in Labs	0

Continuity plans also include EOs' response to fire, tornado, or other disasters. All EOs have access to detailed plans and review the plans quarterly. Drills are held a minimum of three times a year to ensure that EOs are making appropriate responses in a timely manner. Lessons learned from drills are incorporated into the prevention plans on CNet.

Recovery plans, updated in 2012, include detailed backup recovery plans for data and information systems, technical and factory processes, and support processes. Support process recovery is rapid because CCAs and other office personnel are able to use remote access to CNet to provide immediate continuity of operations. Collin has identified qualified Partner Suppliers committed to a reciprocity agreement to provide equivalent process capability for most production lines. R&D continuity is based on agreements with local universities. Recovery plans are reviewed annually during a scheduled process assessment.

6.2d

In 2012 Collin recognized the need for an innovation leader. Candice Trobaugh assumed the role of chief innovation officer (CInvO). She provides oversight for the Product Development and Innovation Process (Figure 3.2-1), and the Performance Excellence group trains CI² Teams on tools for continual innovation and continuous improvement. CI² Teams identify obstacles, and the CInvO coordinates efforts of the LT to remove the obstacles for the team. When strategic opportunities are identified through the SPP, the risk management assessment determines if the intelligent risk is acceptable to pursue innovation. The LT rebalances the budget and staffing model to ensure that sufficient resources are available, and the LT communicates priority changes through a communication plan. At that point, a CI² Team is identified to execute product development and/or process design and management processes as needed to seize the opportunity. The Leadership Review Process includes reviewing active CI² Team progress. If sufficient progress cannot be demonstrated for a strategic opportunity or if there are needs for reprioritization, the CI² Team may be concluded so that resources are continually applied in the most impactful manner.

Note: Results segmented by market will use the following abbreviations:

A—Aerospace
PE—Personal Electronics
R&D—Contract R&D

Any results with an asterisk (*) include projected performance for the remainder of 2013, with January, February, March, and April indicated as "J," "F," "M," and "A."

7.1 Product and Process Results

7.1a

Collin tracks multiple indicators for performance against customer requirements. Figure 7.1-1 shows current performance levels and trends for on-time delivery (OTD) based on ship date from Collin. Performance has surpassed the best-of-industry benchmark in the past few months. On-Time Receipt and Receipt Quality (Figure 7.1-2) is based on the receipt of the product at the customer location. On-time receipt has demonstrated sustained improvement since 2008. Equally important is the receipt inspection results once the product is received. Reports from customers indicate that Collin has lowered once unfavorable levels in receipt quality as measured by defects in PPM. Collin is achieving more consistent quality levels again now that the flexible roll-to-roll processes have achieved Cpk levels above 2.0.

Reliability (Figure 7.1-3) is a long-term indicator of product quality. Collin outperforms the industry-best reliability benchmark by nearly 5% as a result of the highly automated processes it uses.

Feasibility of both the processes and the designed product is an indicator of quality for the customer and an outcome measure for the R&D group. Design for manufacturability (DFM) has been a focus for Collin for the past four years, as indicated in Figure 7.1-4. In addition to having a feasible product and process design, Collin knows that receipt of information in a timely manner to facilitate production lead times is also highly desirable. In the past four-plus years, Collin has improved from 95% to nearly 100% in OTD of process and product designs.

The industry has been intently focused on creating HDLW products. Collin has placed an equal emphasis on this requirement and, for the past four years, has met customer expectations fully. The development of carbon fiber traces poises Collin to surpass existing capabilities and to redefine HDLW expectations.

Results for meeting the customer requirement for pricing are covered with the results from the customer survey (see Figures 7.2-2 and 7.2-3). The final customer requirement is related to customer support. The effectiveness of CCAs is indicated in Figure 7.1-5. Collin endeavors to resolve any customer concern, question, or issue fully on the first contact. An increase in the number of transfers is an indicator of nonperformance.

The Field Quality Index (Figure 7.1-6) is a composite of customer returns, replacements, and repairs, and it is unique to Collin. All three indicators are tracked independently, and data are available on-site. The composite indicator is shown for the two markets that sell interconnect products that may be returned, replaced, or

Figure 7.1-1: On-Time Delivery

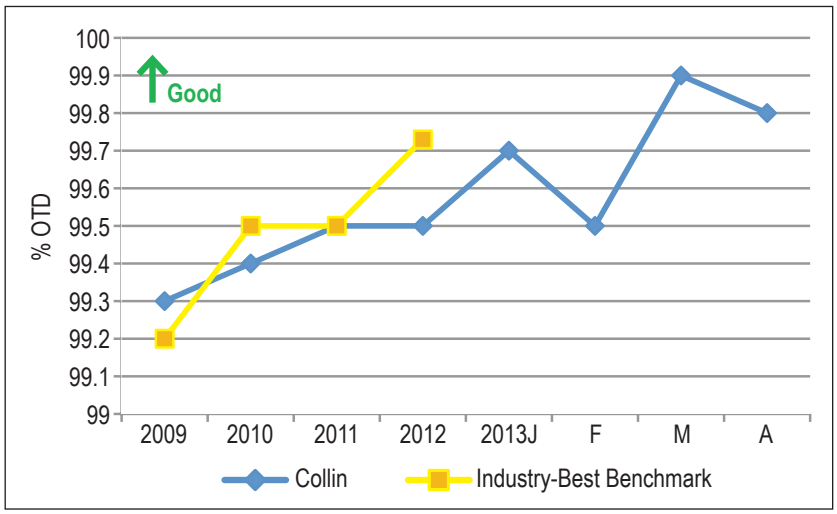


Figure 7.1-2: On-Time Receipt and Receipt Quality

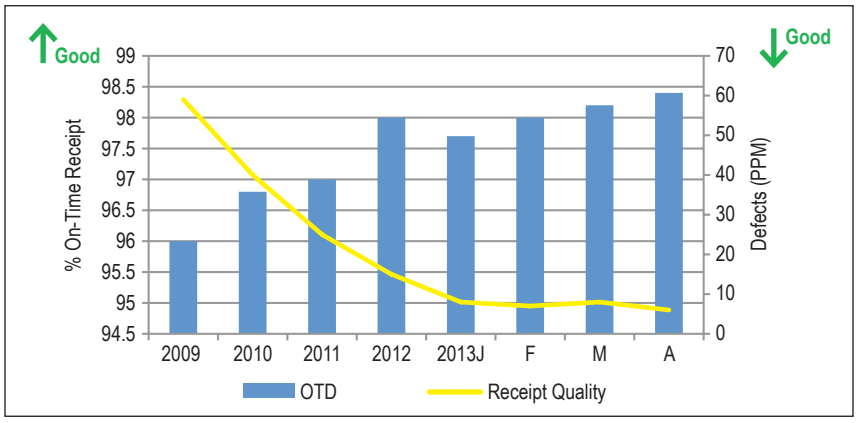


Figure 7.1-3: Reliability

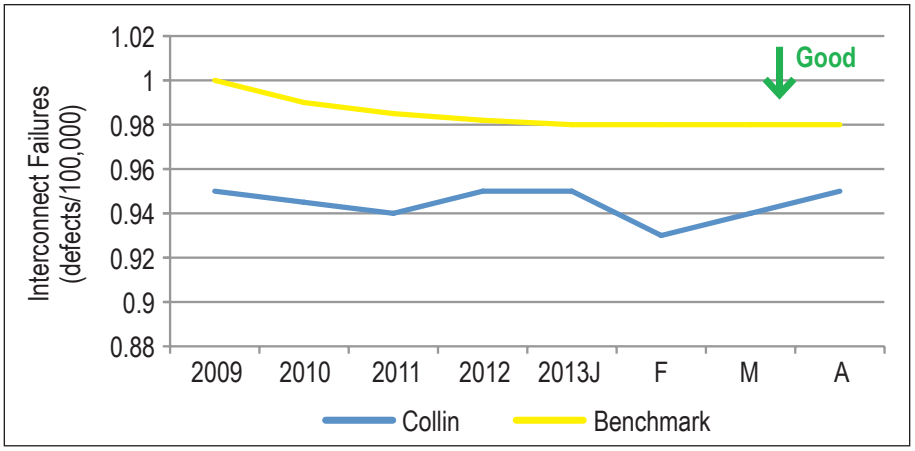
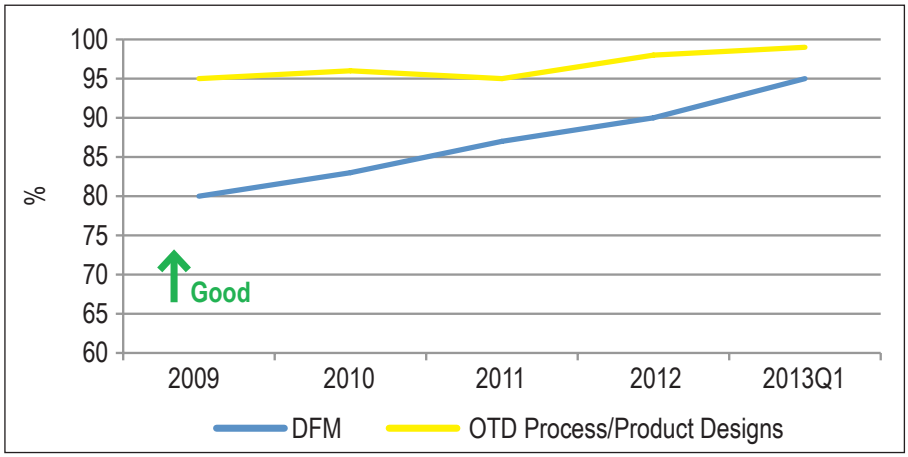


Figure 7.1-4: Contract R&D DFM and OTD



repaired. The product of Contract R&D does not lend itself to this particular measurement.

7.1b

7.1b(1)

The primary indicator of process effectiveness is product quality, as demonstrated in Figure 7.1-7. Automated testing and inspection equipment enable determination of product quality within each of the processes listed in Figure 6.1-4. Collin's performance currently matches or surpasses its best competitor. Such performance is a result of the highly capable processes shown in Figure 7.1-8. All key production processes surpass the minimum goal of a Cpk of 2.0. The larger the Cpk, the more capable the process is at meeting customer requirements.

Processing Throughput (Figure 7.1-9) is a critical indicator of effective flow through Collin's processes, which continue to benefit from the continuous innovation present in the Collin culture. Throughput is calculated from receipt of order through shipment.

A customer-facing process that is highly important to Collin's customers is the billing process. Collin measures accuracy as well as timeliness of this process (Figure 7.1-10). Current performance levels have triggered two CI² Teams: one focused on improving the timeliness of the very complicated invoicing process used for the Aerospace business segment, and another team on addressing the accuracy of invoices for the Personal Electronics business segment.

There would be no work for Collin EOs if the sales and marketing processes were not effective. Collin uses two indicators: win rate and quote accuracy (Figure 7.1-11). Over 80 percent of all business is repeat business for Collin, which enables high win rates. Quote accuracy is another way that Collin tracks process effectiveness. Percentage accuracy indicates how effectively each individual is completing that process.

The CSC is heavily reliant on CNet availability and responsiveness (Figure 7.1-12) since the entire chain uses secure portals to conduct business. The ITS group refers to the uptime of such an integrated system as "the number of nines." It considers three nines typical for manufacturing and four nines (99.99%) as leading performance for technical manufacturing.

Figure 7.1-5: Customer Support Promptness and Accuracy

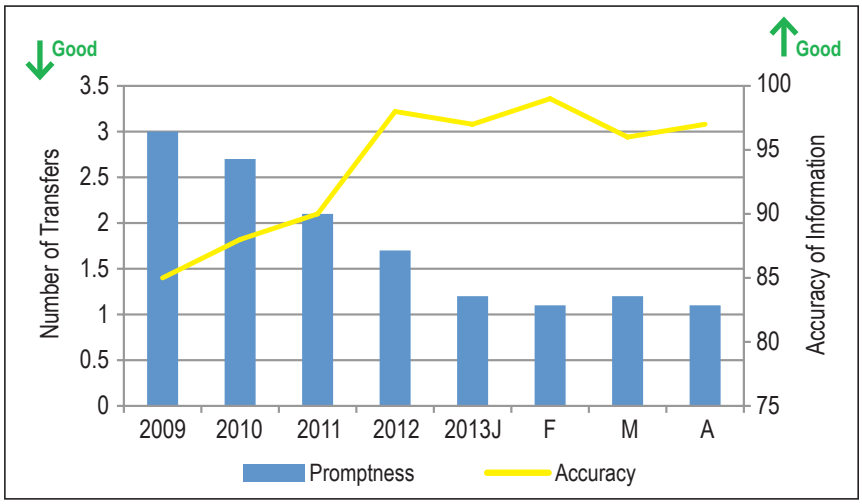
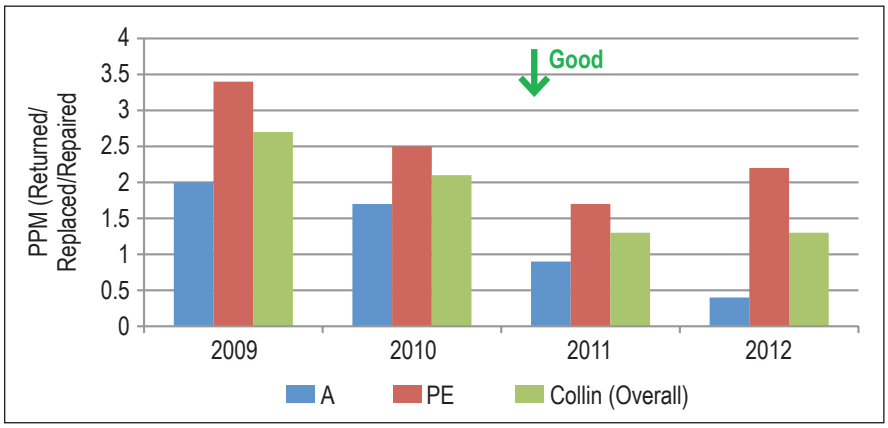


Figure 7.1-6: Field Quality Index



Scheduling effectiveness (Figure 7.1-13) is tracked for Collin and its two EMS partners. Ideal capacity fill is between 85% and 90%. This ensures sufficient unscheduled time to perform preventive maintenance and contingency capacity. Collin is currently considering the timing for the addition of a limited third production shift. The drop in capacity at Thai EMS is related to the flooding in 2011.

7.1b(2)

Collin conducts emergency preparedness drills throughout the year. Figure 7.1-14 shows the results for completing drills at the appropriate frequency. The frequency of fire drills was changed to semiannual in 2011.

7.1c

Figure 7.1-15 portrays how effectively Collin is managing its Partner Suppliers. All Partner Suppliers are performing at or above 8 points out of 10 in Collin qualification criteria. Note: The 2011 and 2012 ratings for Thai EMS are based on 10 months of data as a result of not using the partner for a portion of the year due to the flooding in Thailand.

7.2 Customer-Focused Results

7.2a

7.2a(1)

Collin's Customer Survey (Figure 7.2-1) results indicate levels matching or exceeding benchmarks for overall and the Aerospace and Contract R&D business segments in recent years. Exemplary product performance has led to these levels of satisfaction. Satisfaction in the PE market is improving as processes are improved and the market is better understood.

In addition to overall percentages, Collin analyzes the overall satisfaction results for each customer requirement (Figure 7.2-2) based on the average rating using a ten-point scale. For the past four years, measures of engagement show an improvement trend. Based on sustained moderate ratings, a CI² Team is working on reducing unit cost for the PE market in order to increase satisfaction for pricing.

Drill-down information is analyzed for customer satisfaction for the top two priorities by market (Figure 7.2-3). Satisfaction with HDLW solutions is trending favorably across all three business segments. This reinforces the efforts that Collin is taking to innovate interconnect solutions.

Figure 7.1-7: Product Quality

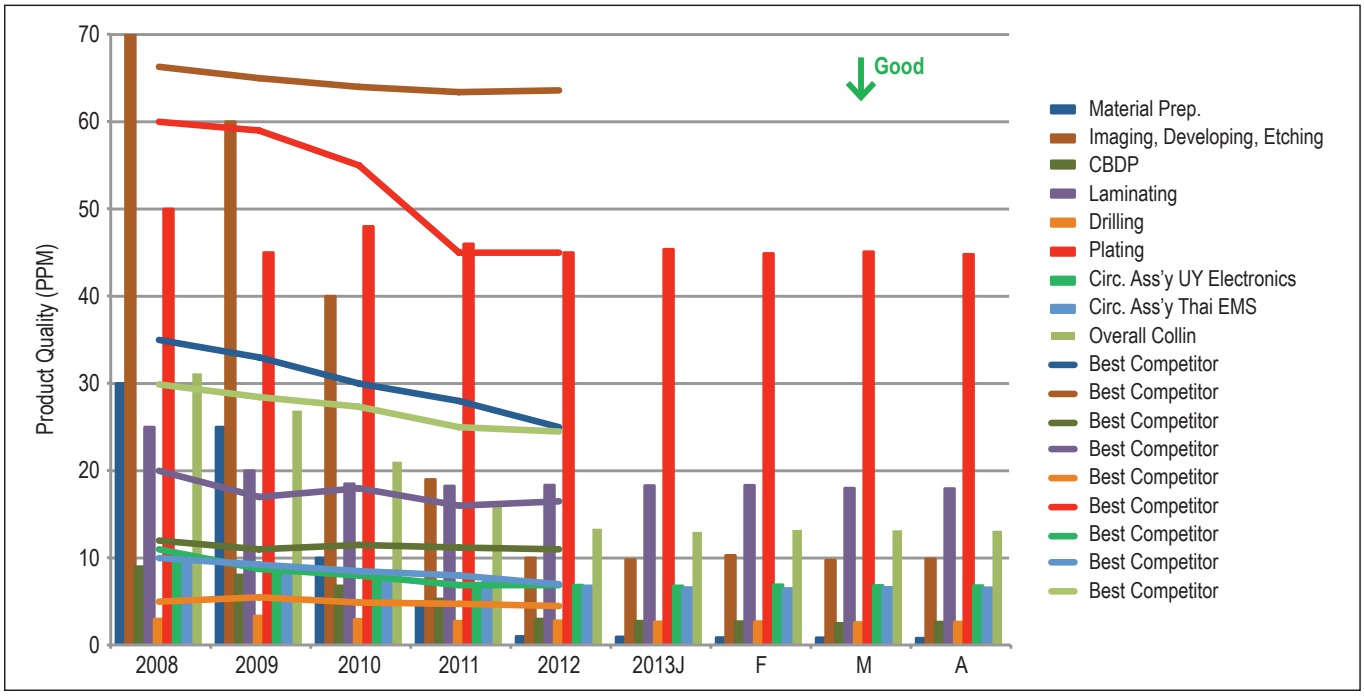
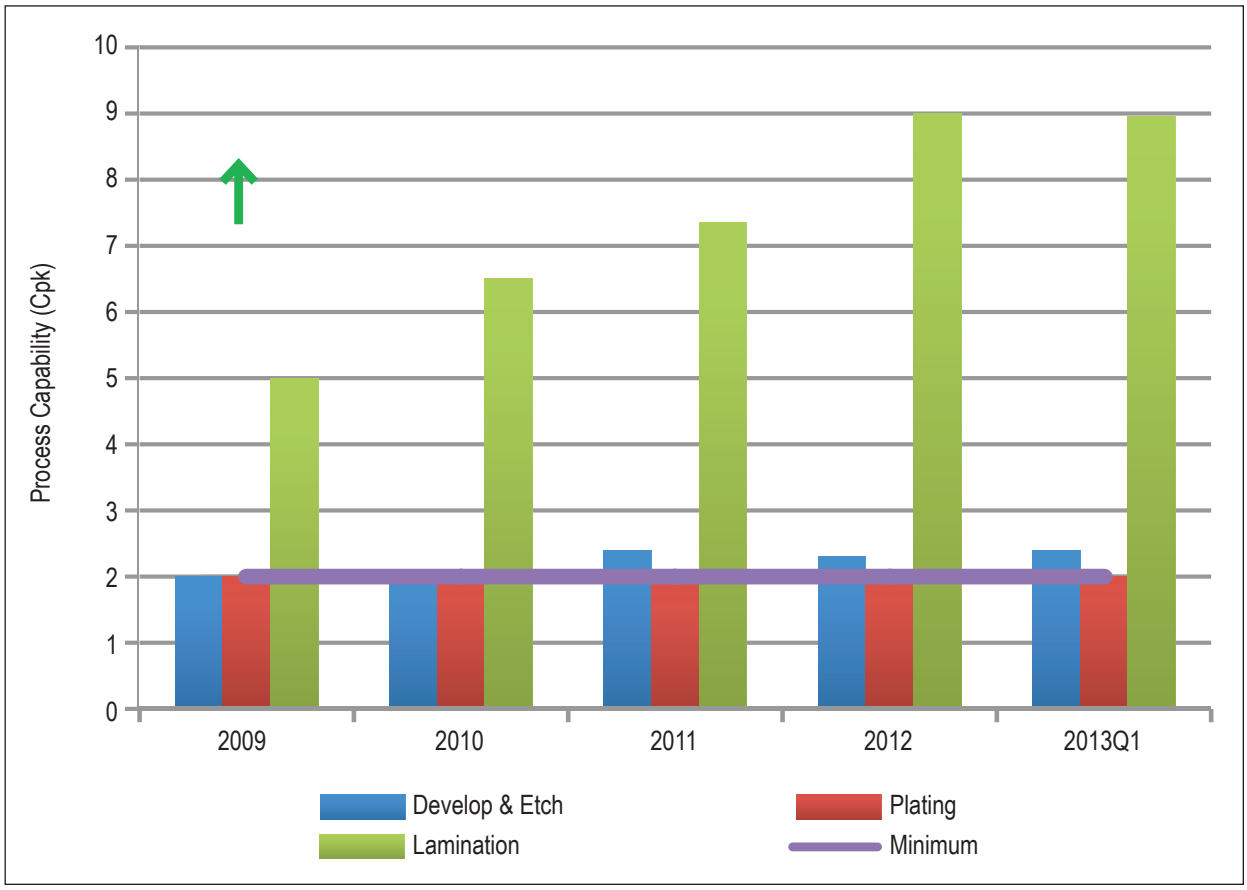


Figure 7.1-8: Process Capability



Results from the customer survey are used to identify follow-up questions to ask in focus groups. The dissatisfiers load on or correlate strongly to four topic issues: design, production, delivery, and accounting (Figure 7.2-4). Two CI^2 teams are currently assigned to (1) determine what is driving the poor relative performance in the PE business segment and (2) identify what accounting deliverables are causing dissatisfaction in this area.

One indicator of satisfaction within the Contract R&D business segment is new R&D contracts secured (Figure 7.2-5). Collin made a strategic decision to increase the number of new contracts by 50% in 2013 to increase the diversity of customers within this market.

7.2a(2)

In 2009, Collin began tracking Net Promoter Score (Figure 7.2-6). Using a ten-point scale for the question "I would be willing to refer Collin to others" and subtracting the number of ratings from 1 to 5 from the number of ratings that are 9 or 10, Collin is able to calculate the Net Promoter Score. Currently, one other competitor tracks a Net Promoter Score. Collin performs favorably when compared to industry average but lags the leading computer technology company.

Overall Customer Engagement (Figure 7.2-7) derived from the engagement questions on the customer survey has improved over the past five years and compares favorably with the industry

Figure 7.1-9: Processing Throughput

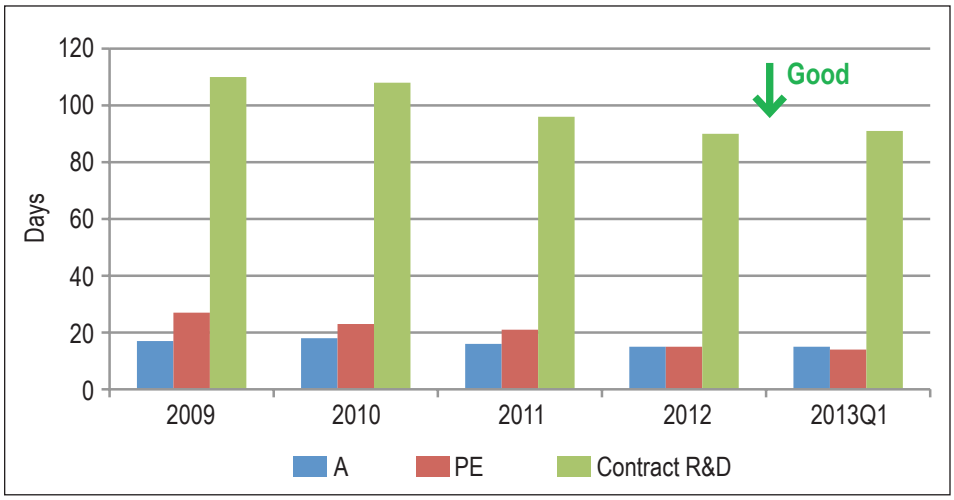


Figure 7.1-10: Billing Accuracy and Timeliness

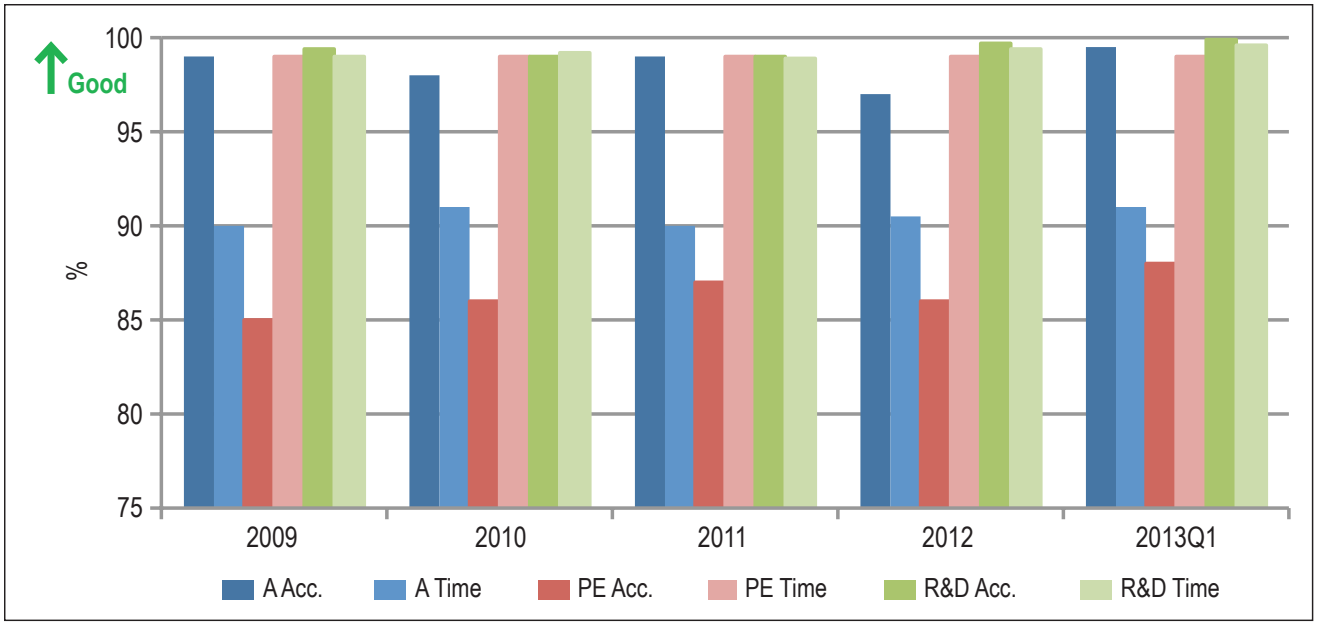
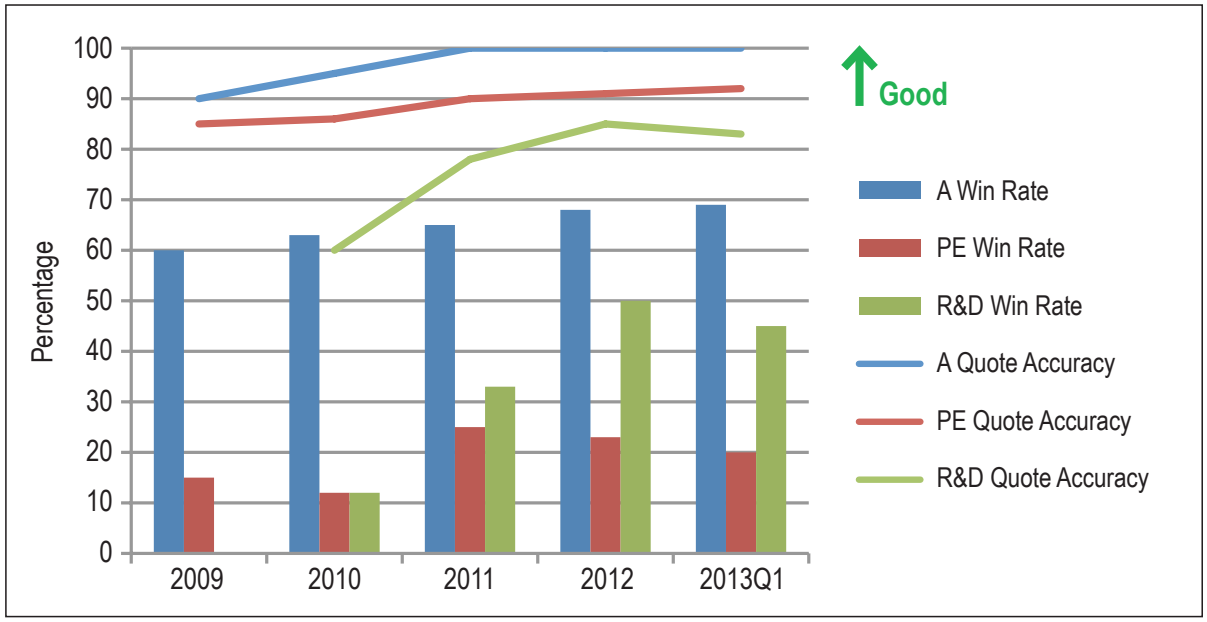


Figure 7.1-11: Win Rate and Quotation Accuracy



benchmark. This measure can appear to be a bit distant from day-to-day operations. A predicting indicator of engagement is the cumulative number of actual customer referrals (Figure 7.2-8). The overall trend in Collin's performance on this measure since 2008 is favorable, with a 25% increase in referrals anticipated in 2013.

Correlation studies have established direct relationships among the following: levels of engagement and repeat business ($r = 0.93$), customer receipt quality and repeat business ($r = 0.91$), and customer engagement and employee engagement ($r = 0.84$).

7.3 Workforce-Focused Results

7.3a

7.3a(1)

Collin conducts a robust capability and capacity study of each segment of its workforce annually for use in the SPP. Capacity is the adequacy of staffing levels, and capability is a percent match of skill between the individual and position. Collin also monitors changes in capacity needs quarterly that are required to meet production fluctuations. The aggregate overall capacity and capability for each EO segment is shown in Figure 7.3-1 and demonstrates favorable trends in all segments.

Figure 7.1-12: CNet Effectiveness

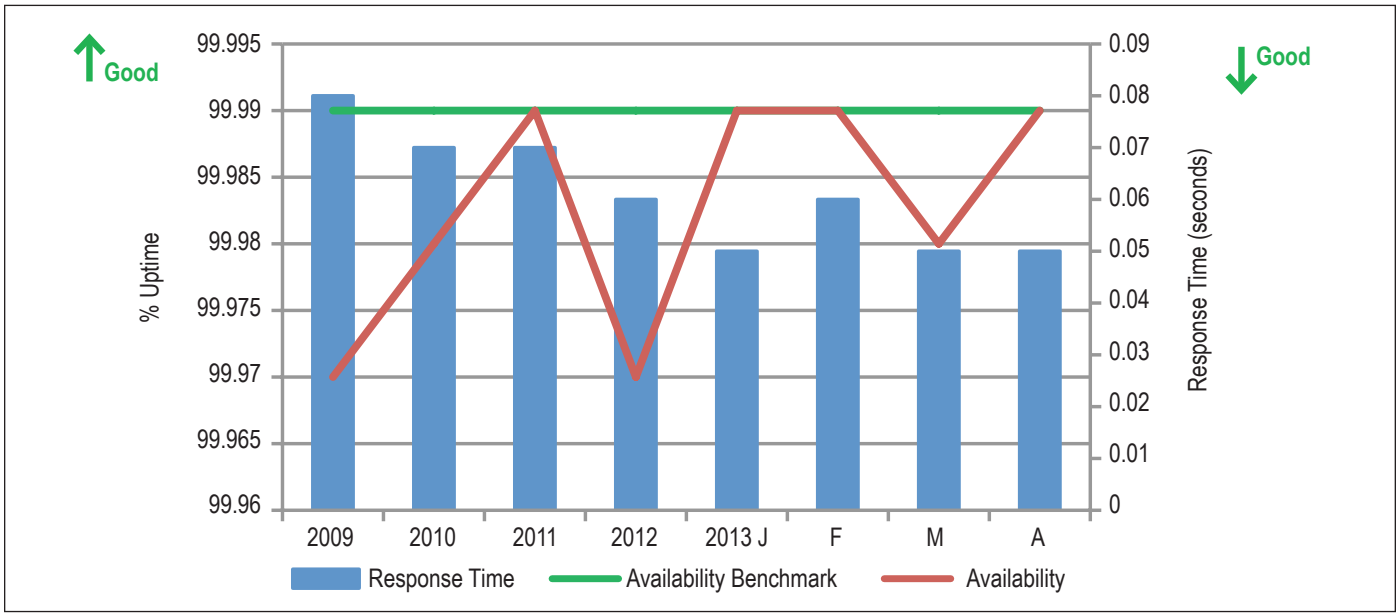


Figure 7.1-13: Scheduling Effectiveness

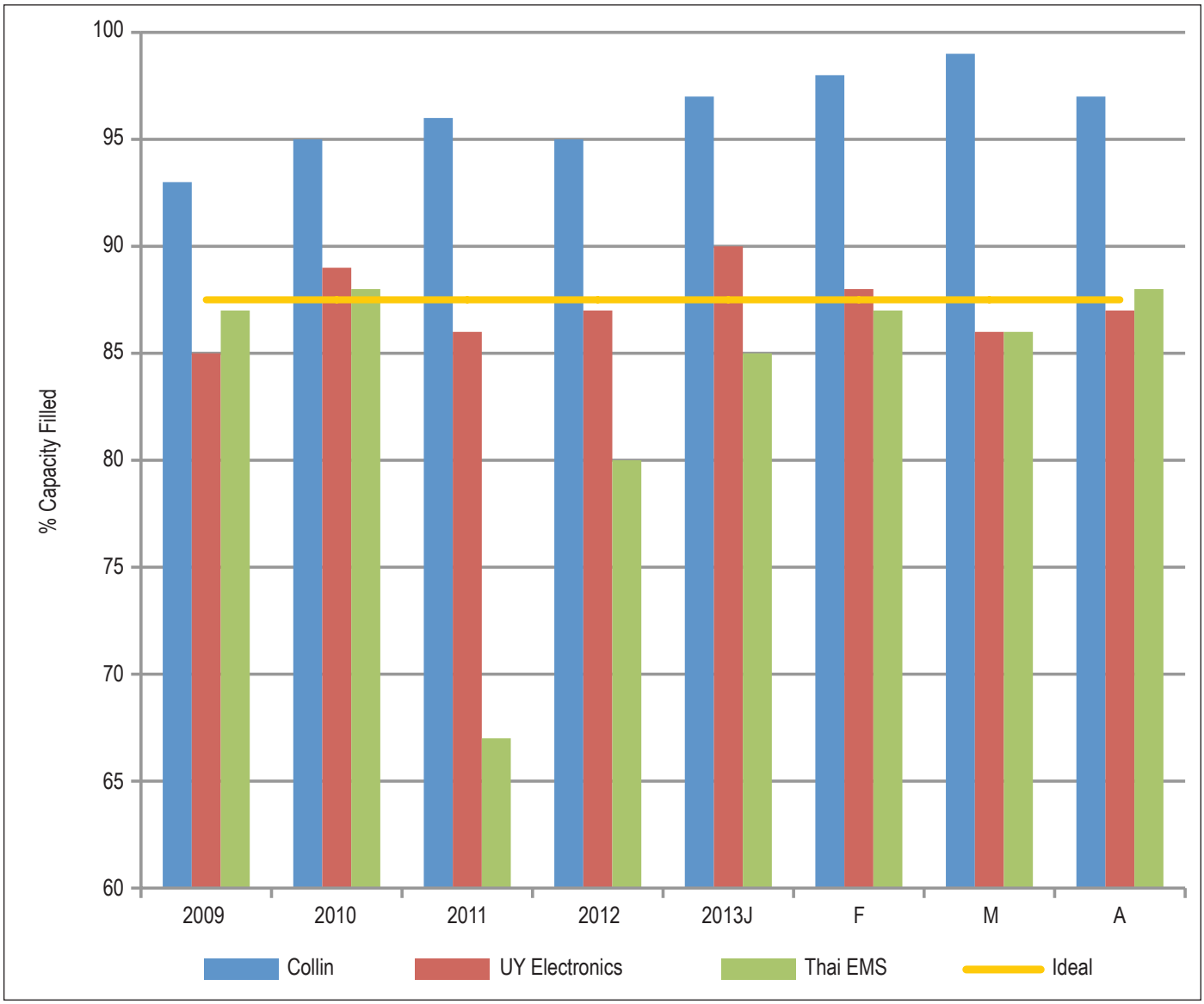
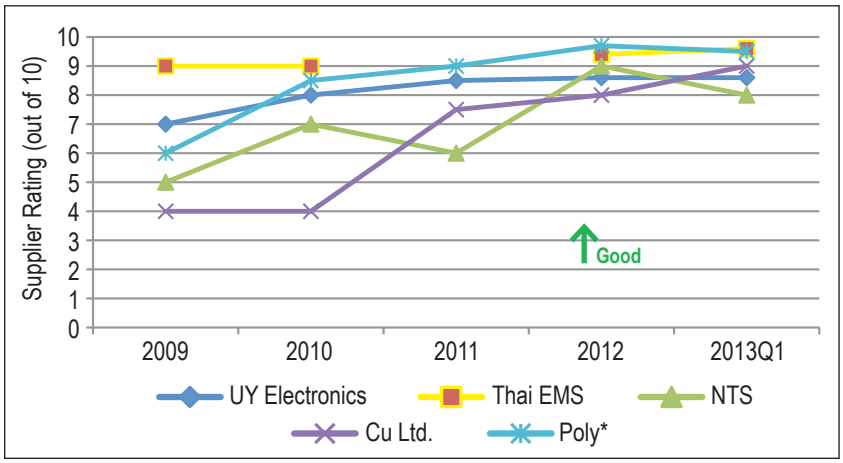


Figure 7.1-14: Emergency Preparedness Results

Emergency Preparedness					
Type of Drill	**Frequency**	**2009**	**2010**	**2011**	**2012**
Fire Drills	Semiannual	1	1	2	2
Tornado Drills	Annual	1	1	1	1
Chemical Spill Response Drills	Quarterly	2	3	3	4
Emergency Medical Response Drill	Biennially		1		1
Community Drills	Biennially	1		1	
Lessons Learned from Drills		7	8	5	10

Figure 7.1-15: Partner Supplier Management Effectiveness



7.3a(2)

Workforce climate is one of many outcomes measured using the EO Survey. Results in Figure 7.3-2 indicate EO satisfaction with safety and security, wages and benefits, wellness activities, and the Greenway and fitness center, which all create a healthy work environment at Collin.

Collin also uses specific measures to track the effectiveness of safety. Figure 7.3-3 shows the recordable incident rate (RIR) and days away, restricted, or transferred (DART) for the past three years. Collin compares favorably with the industry top-quartile level, the best comparison currently available, for the past two years for

Figure 7.2-1: Customer Satisfaction Overall and by Market

Figure 7.2-2: Aggregate Customer Satisfaction Results

Survey Topic	2008	2009	2010	2011	2012
Reliability	8.6	9.1	8.7	8.9	9.1
HDLW Capability	9.3	9.3	9.2	9.3	9.4
Functionality	9.1	8.9	9.1	9.4	9.5
Competitive Pricing	7.3	7.3	7.3	7.4	7.4
Customer Support	8.3	8.5	8.4	8.5	8.6
Delivery	8.1	8.4	8.5	8.5	9.0
Receipt Quality	9.6	9.6	9.7	9.7	9.8
Value	7.9	8.1	8.4	8.4	8.5
Responsiveness	9.3	9.4	9.4	9.6	9.5
Engagement		5.1	5.7	6.3	7.2

Figure 7.2-3: Customer Satisfaction with Top-Two Requirements by Market

Top 2 Priorities		2009	2010	2011	2012
A	**Reliability**	8.3	8.7	9.1	9.7
	HDLW	8.6	9.1	9.2	9.4
PE	**HDLW**	7.3	7.3	8.5	8.7
	Pricing	5.8	6.1	6.3	6
R&D	**Support**	8.5	8.9	9.2	9.5
	HDLW	9.1	9.1	9.5	9.5

Figure 7.2-4: Dissatisfiers

	Dissatisfiers				
	Market	Design	Prod.	Delivery	Acctg.
2010	**A**	1	0	1	1
	PE	2	1	2	5
	R&D	3			1
2011	**A**	2	1	2	2
	PE	3	2	3	6
	R&D	4			2
2012	**A**	0	0	0	0
	PE	1	0	1	4
	R&D	2			0

DART and all three years for RIR. This indicates that the EHS&S program has effectively prevented EOs from becoming injured on the job.

An important component of the safety program is a rigorous reporting and analysis of near misses (Figure 7.3-4). As EO awareness increased, Collin experienced an increase in the near misses reported for the near-term, which is considered favorable. EOs are no longer missing obvious safety issues but are calling attention to the unsafe conditions that could cause an injury.

The number of chemicals within Collin demands additional reporting of unexpected exposure to chemicals. Each exposure is investigated thoroughly, and preventive actions are implemented. Where the chemicals in use are familiar, as in production areas, the incidence of exposure is decreasing. A CI^2 Team is working with the technical

Figure 7.2-5: New R&D Contracts

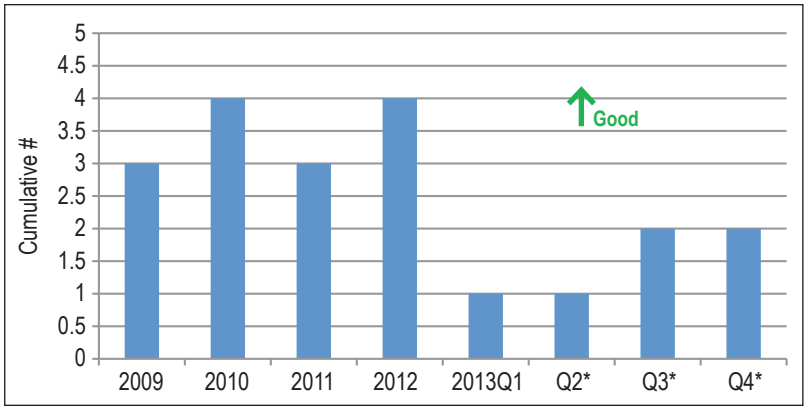


Figure 7.2-6: Net Promoter Score

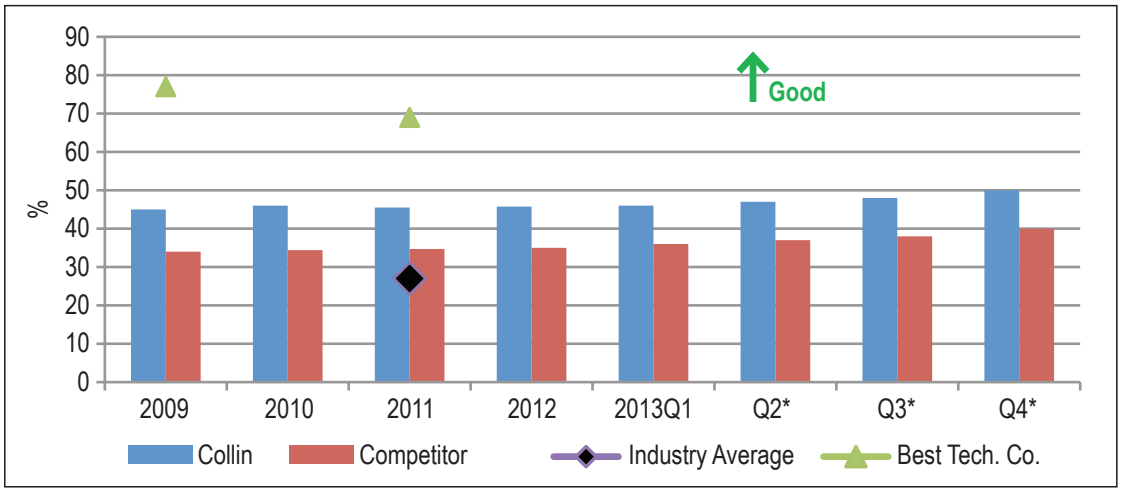


Figure 7.2-7: Overall Customer Engagement

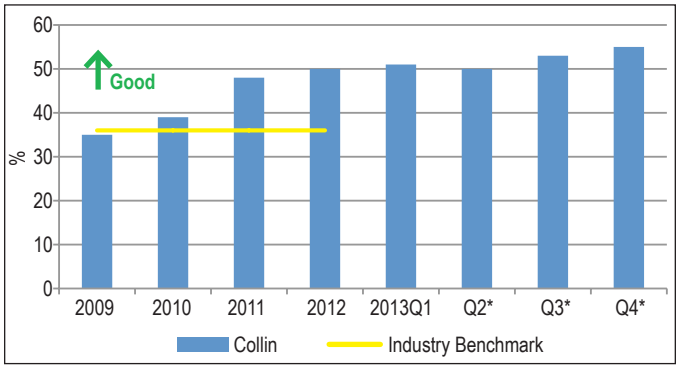
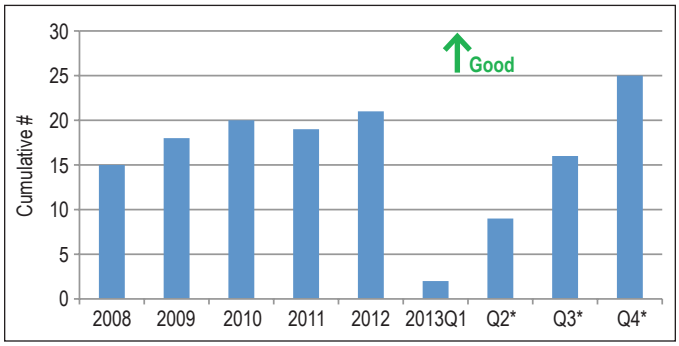


Figure 7.2-8: Cumulative Number of Customer Referrals

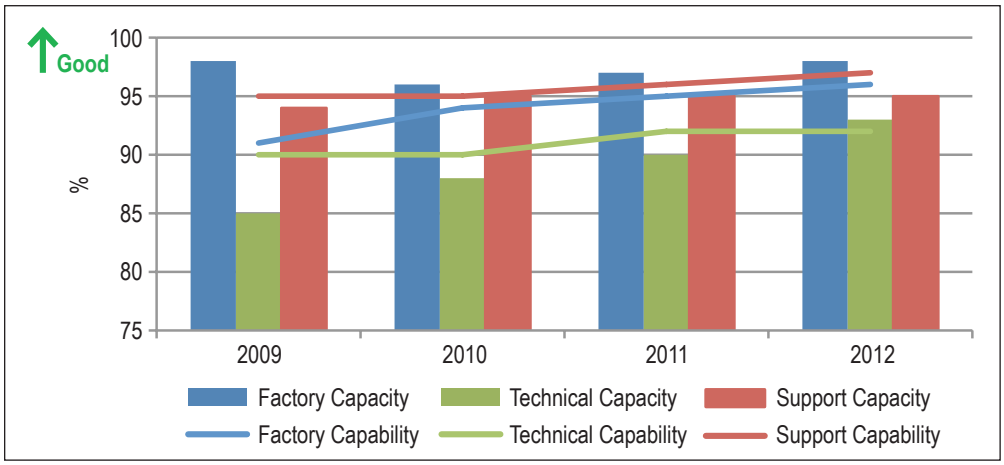


staff in R&D to identify ways to ramp up awareness as new chemicals are introduced at Collin.

Goals have been established for the air quality in Collin facilities (Figure 7.3-5). Air-borne hazardous chemicals and use of lead in production processes have been virtually eliminated. Collin has also made good progress in controlling air-borne noxious chemicals that are not hazardous but considered an irritant due to odor.

Collin has established wellness activities; satisfaction is shown in Figure 7.3-2. In addition, Collin tracks the percentage of the workforce that participates in wellness activities and the percentage of EOs considered at risk from the voluntary Wellness Survey that EOs complete courtesy of the insurance carrier (Figure 7.3-6). Participation in wellness activities has exceeded the benchmark in 2012, and the percentage of EOs at risk has declined in each of the past two years.

Figure 7.3-1: Capacity and Capability Results



EO Excels is the implemented suggestion and incentive award system that Collin has had in place for many years. The distinguishing factor is that EOs need to implement the suggestion before they may be rewarded based on the savings to the company. The number of implemented suggestions (Figure 7.3-7) has been sustained for the past four years and is on track for a similar cumulative value for 2013.

Figure 7.3-2: EO Survey Results by Question

Survey Question	2009	2010	2011	2012	2013	Benchmark
"I feel safe and secure on the job."	88	87	88	89	93	
"I take pride in being an owner of Collin."	99.4	99.5	99.6	99.7	99.8	
"I can make a difference on the job."	87	88	93	94	95	
"There is open communication."	45	49	48	49	49	37
"I have opportunities to learn and advance."	89	90	90	90	90	
"I have competitive wages and benefits."	79	81	82	85	85	
"I trust senior leaders' decisions."	84	87	88	93	94	74
"I am satisfied with Greenway."	85	88	88	88	88	
"I am satisfied with the wellness activities."	75	76	81	82	82	
"I am satisfied with the fitness center."	60	67	65	72	75	
Overall Engagement	27	28	29	31	32	30
Overall Satisfaction	79.1	81.3	82.3	84.2	85.1	83

Figure 7.3-3: RIR and DART

	RIR		DART	
	Collin	Top Quartile	Collin	Top Quartile
2010	0.6	1.1	0.3	<0.1
2011	0.5	0.7	0.2	0.3
2012	0.5	0.7	0.1	<0.1

Figure 7.3-4: Near Miss and Accidental Exposures Reporting

	# of Near Misses Reported		
	Factory	Technical	Support
2009	150	5	0
2010	208	19	1
2011	284	23	0
2012	375	37	3
	Accidental Exposures		
	Factory	Technical	Support
2009	2	3	0
2010	0	2	0
2011	1	1	0
2012	0	2	0

7.3a(3)

Workforce engagement (Figure 7.3-2) has surpassed the benchmark for manufacturing companies for the past two years. Analysis has shown that higher levels of engagement correlate to higher company earnings and improved EO retention (Figure 7.3-8).

7.3a(4)

Satisfaction with opportunities for development is shown in Figure 7.3-2. Strategic development includes the percentage of EOs holding one or more EIC certificates (indicating proficiency in their positions), EOs promoting sustainability, and EOs demonstrating leadership (Figure 7.3-9).

Collin tracked levels of training completion until recently, when training effectiveness results (Figure 7.3-10) replaced that measure. Training effectiveness is determined through surveys to the EO and to his/her supervisor three and six months after training to gather an indication of how learning has been applied on-the-job (OTJ). This change in behavior is the outcome desired from learning and development activities and is tracked by EO segment and compared to *T+E* magazine's application benchmark.

7.4 Leadership and Governance Results

7.4a

7.4a(1)

Stakeholder surveys provide many indicators of leadership effectiveness (Figure 7.4-1). Indicators of trust in leadership, the understanding of Collin's vision, and the effectiveness of senior leaders' communication demonstrate improvement over time and performance levels, surpassing benchmarks from all stakeholders.

Figure 7.3-5: Hazardous, Noxious, and Lead Exposures

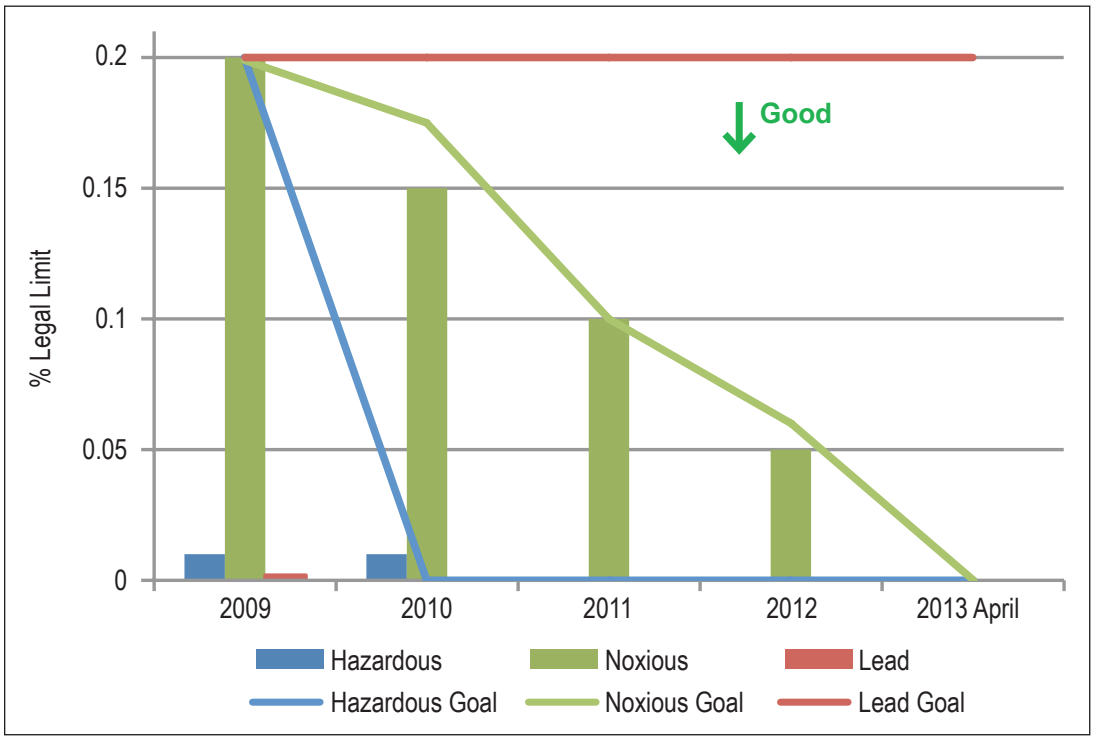


Figure 7.3-6: Participation in Wellness Activities and Employees at Risk

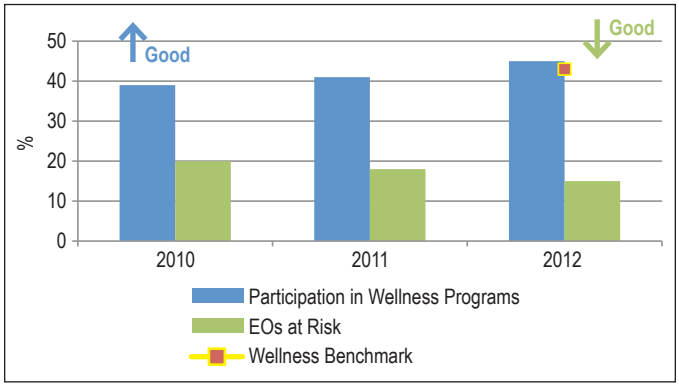


Figure 7.3-7: Cumulative Number of EO Excels Suggestions Implemented

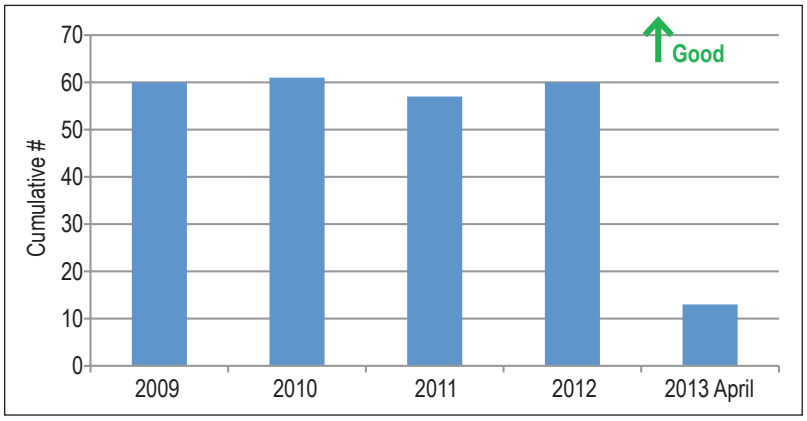
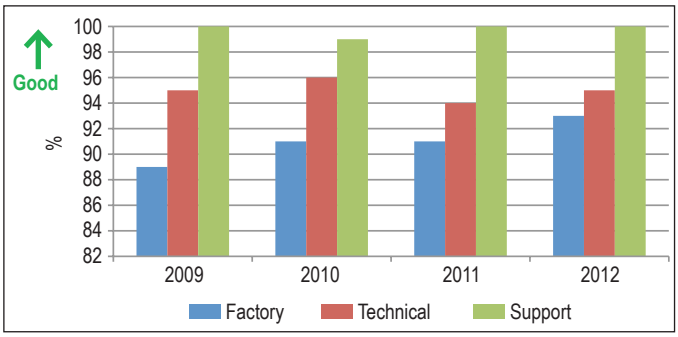


Figure 7.3-8: EO Retention



EOs and stakeholders indicate a strong confidence in the direction Collin is pursuing. EOs understand the Collin vision and how their individual performance supports attainment of the company strategy as a result of the cascading of the scorecard and frequent leader communication.

The effectiveness of the sound-byte approach to reinforce key concepts is shown in Figure 7.4-2. LT members check on awareness of the sound byte during walkabouts several days after the original discussion. The percentage reported represents the EOs who were aware of the topic of the most recent sound byte and could provide an example of how the message applies to their work roles. Collin is investigating the lower level of awareness in the technical staff. Current theory is that these technical EOs are more focused on project goals than on organizational goals.

Figure 7.3-9: EO Strategic Behavior

	2008	2009	2010	2011	2012
% EOs with one or more EIC certifications	50	71	85	88	89
% EOs promoting sustainability	20	24	25	50	63
% EOs demonstrating leadership	35	34	35	36	35

The semiannual self-assessment using the Baldrige Criteria is another indicator of leadership effectiveness and creation of a focus on action (Figure 7.4-3). Steady improvement is demonstrated over the past four years, culminating in the Excellence Award in 2012 from SCPE.

Figure 7.4-4 indicates the average number of discussion threads on the LT blogs for each posting. The LT interaction in these discussions indicates more effective two-way communication with EOs.

7.4a(2)

At least annually, the AB completes a self-assessment. Results from this assessment are shown in Figure 7.4-1. Board effectiveness is improving due to two factors: (1) less engaged board members have left the AB, and (2) the AB has defined clearer expectations for its individual and collective performance.

Fiscal accountability is demonstrated in the number of findings or observations (lower impact) identified during external and internal accounting and finance process assessments (Figure 7.4-5). The Collin internal finding is a good predictor of the issues that the external auditors might identify. Early detection by Collin facilitates immediate correction prior to the external audit and prevents findings.

7.4a(3)

Collin monitors several indicators related to legal requirements. Stakeholder feedback related to legal behavior is illustrated in Figure 7.4-1.

Collin has never received sanctions and has only had one issue associated with a malfunction during a routine air quality monitoring test. The malfunction was corrected on the spot and didn't result in a finding or fine. Emissions for both air and water fall well within the current permit levels, and Collin has been compliant for the past 14 years. The internal audit process for ISO certification includes audits for all processes associated with air and water compliance.

Figure 7.3-10: Training Effectiveness

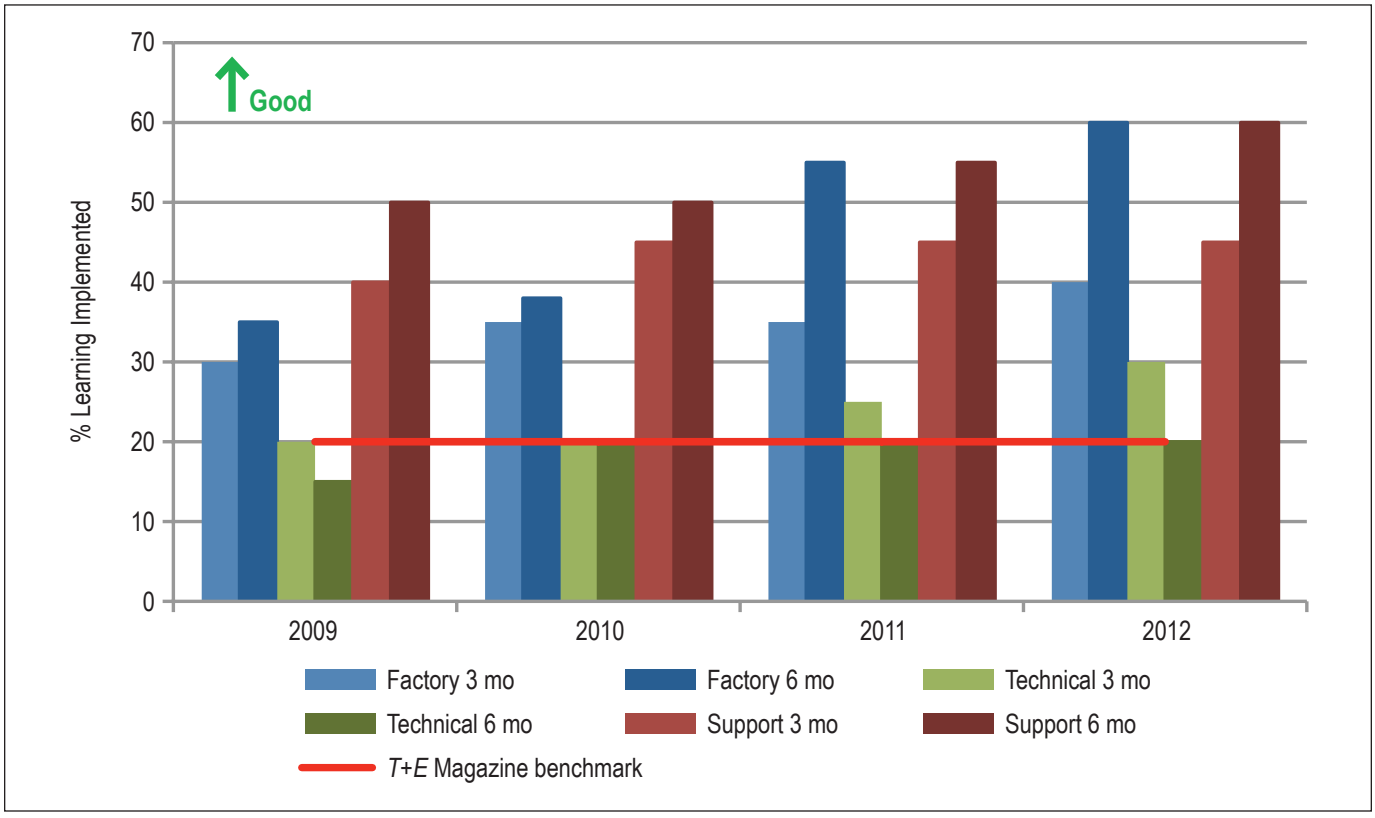


Figure 7.4-1: Leadership Effectiveness—Stakeholder Survey Results by Question

Survey Question	2009	2010	2011	2012	2013	Top-Decile Benchmark
EO Survey						
"I know how my work contributes to Collin's success."	90	93	94	95	97	93%
"I am confident that leaders are taking the company in the right direction."	86	87	89	88	89	85%
"I receive frequent updates on company strategy."	98	99	99.2	99.3	99.7	95%
"I can talk openly with leaders."	99	99	99.5	99.7	100	91%
"I am comfortable reporting suspected noncompliant behavior."	97.3	98.1	98.5	98.6	99.1	96%
"I am comfortable reporting suspected unethical behavior."	97.5	98.3	98.7	98.8	99.3	97%
"I have observed unethical behavior at Collin."	0.1	0	0	0	0	1.50%
Community Survey						
"Collin openly communicates with the community."	75	77	74	78	77	56%
"I am comfortable raising a concern with Collin's leaders."	22	25	37	41	43	35%
"Collin's leaders are active within the community."	80	80	84	82	83	48%
"Collin's activities provide value to the community."	77	75	78	79	82	N/A
"Collin prevents emissions."	76	75	76	78	79	N/A
AB Survey/Self-Assessment						
"All members of the AB provide value to Collin."	45	50	62	75		N/A
"The Collin AB behaves in an ethical manner."	100	100	100	100		N/A
"The Collin AB behaves in a legal manner."	100	100	100	100		N/A
"I actively contribute to Collin's success."	90	93	94	95		N/A
"I am engaged in committee work."	80	81	80	83		N/A
"Collin's outreach activities derive benefit for Collin as well as the community."	35	40	43	57		N/A
Customer Survey						
"I understand the Collin vision."	89	90	90	90	91	85
"Collin's leaders provide clear communication to me."	81	81	82	85	87	N/A
"I understand what steps Collin is taking to improve its products."	76	79	80	79	80	N/A
Partner Supplier Survey						
"I understand the Collin vision."	97	96	97	99	100	N/A
"Collin's leaders provide clear communication to me."	65	73	87	96	98	N/A
"I understand what steps Collin is taking to improve its products."	73	75	76	78	78	N/A
"I know how my product/service contributes to Collin's success."	85	86	89	92	91	N/A

Figure 7.4-2: Sound-Byte Effectiveness

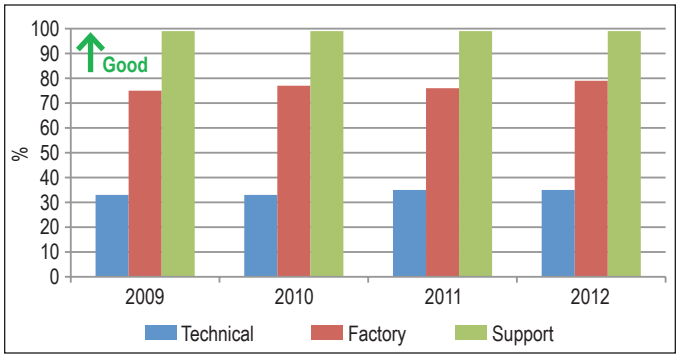


Figure 7.4-3: Baldrige Self-Assessment Scores

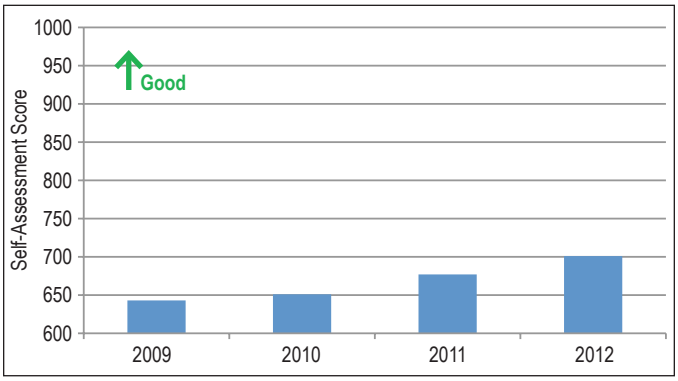


Figure 7.4-4: Discussion Threads with LT Members

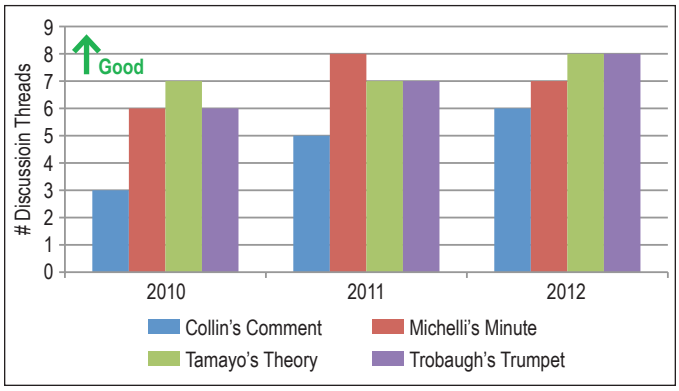


Figure 7.4-5: Fiscal Accountability

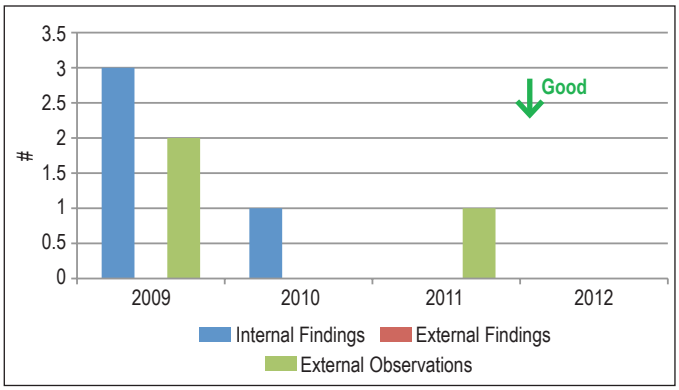
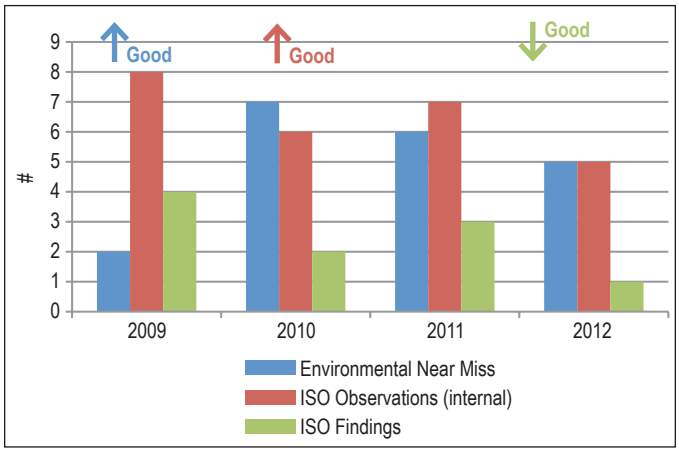


Figure 7.4-6: Environmental and ISO Near-Miss Reports and ISO Findings



Near-miss reporting for compliance processes (Figure 7.4-6) has been implemented with the intent of increasing awareness and reporting actions that could potentially be noncompliant. As in the case of near-miss injury reporting, the desired trend pattern is an increasing trend that indicates increased awareness of potential noncompliant situations.

7.4a(4)

Stakeholder feedback on ethical performance is demonstrated in Figure 7.4-1. EOs can report possible breaches of ethical behavior using an anonymous hotline, and plans are underway for an online reporting feature. Over the past five years, four calls to the hotline have alleged suspected unethical behavior. Upon investigation, all four instances were not substantiated as ethical breaches.

7.4a(5)

Beyond stakeholder feedback, a number of areas of concern relate to the environmentally sound management of Collin's processes. Equipment Energy Efficiency (Figure 7.4-7) is an indicator of how efficiently machines are being utilized over the course of the day. Higher efficiency indicates better use of natural resources required for production.

Collin has been focused on recycling process waste since the 1990s. Figure 7.4-8 shows current trends and levels of recycling solid waste. The amount of recycled waste is determined as a percentage of the total waste material over the course of the year.

The purity of reclaimed water has consistently been better than the 99.9% goal for the past five years. Likewise, the reuse of reclaimed water has consistently exceeded 95% over the same time frame.

The handling methods used for hazardous and noxious chemicals are a potential source of unexpected emissions. Handling errors (Figure 7.4-9) have been steadily decreasing as a result of the aggressive EHS&S program.

Figure 7.4-7: Equipment Energy Efficiency

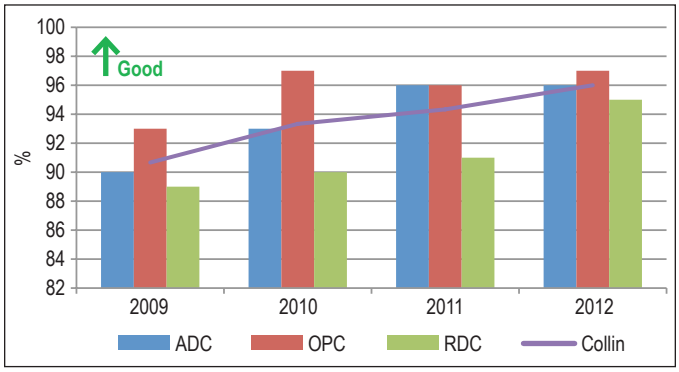
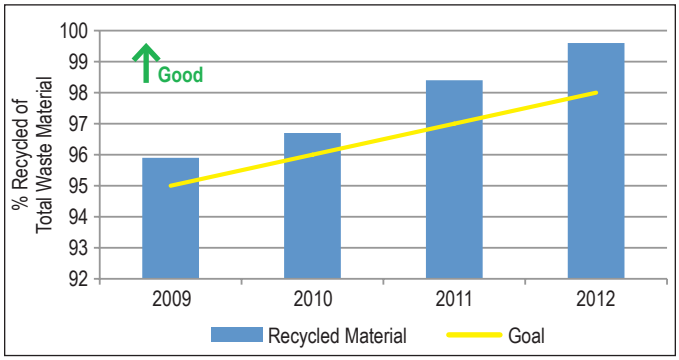


Figure 7.4-8: Solid Waste Recycling



7.4b

Collin has been focused on improving the execution of its strategic objectives and action plans. Progress towards each strategic objective and action plan is monitored on a monthly basis and tracked on a quarterly basis. Each long-term objective has annual goals that are tracked for the current year. Current levels and trends are shown in Figure 7.4-10. Over the years, improvements in setting feasible strategies and action plans have resulted in more timely completion of actions and achievement of strategy.

Figure 7.4-9: Hazardous Chemical Handling Errors

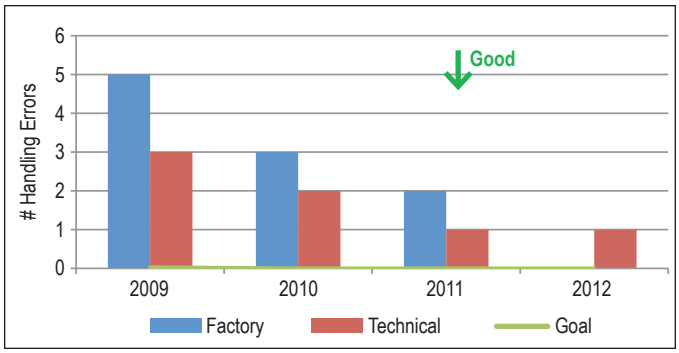


Figure 7.4-10: Strategy Execution Cumulative Percentage of Complete Action Plans and Strategic Objectives

	2010				2011				2012			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Action Plans	10%	30%	45%	70%	15%	25%	40%	75%	25%	50%	75%	100%
Strategic Objectives	—	5%	60%	75%	—	—	60%	90%	15%	30%	50%	95%

Figure 7.4-11: Core Competency Results

	2010	2011	2012
Patents	2	1	2
Personal Touch Testimonials	6	10	18

Progress in strengthening core competencies has been steady. *Ingenuity* is represented in the number of patents granted to Collin, *Excellence* is demonstrated in the number of Personal Touch testimonials (Figure 7.4-11), and *Expertise* is demonstrated in process capabilities (Figure 7.1-8).

Intelligent risk discussions are triggered by CI[2] teams. The number of discussions initiated is shown in Figure 7.4-12.Based on year-to-date activity, the total number of discussions is projected to be 12 for 2013.

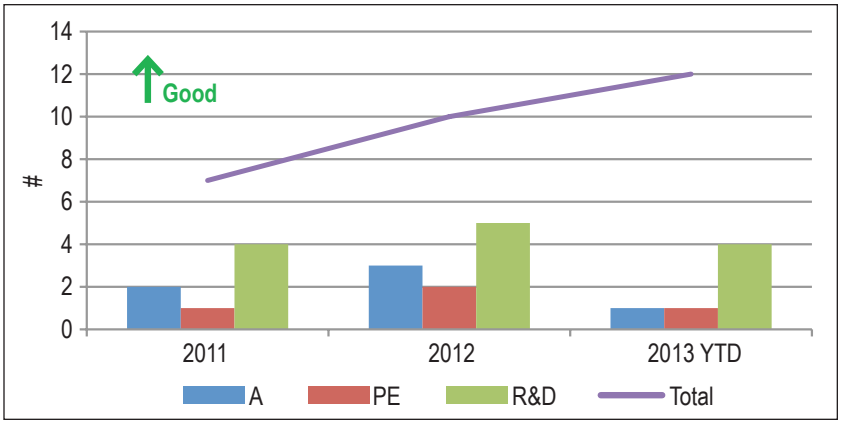
7.5 Financial and Market Results

7.5a

7.5a(1)

Several indicators of financial performance are reviewed at the monthly LT scorecard review. Historically, Collin has

Figure 7.4-12: Intelligent Risk Discussions



maintained sales or revenue levels (Figure 7.5-1) of just under $1 billion per year. Such sales were maintained in spite of difficult economic conditions due to the agility in planning and marketing developed as a result of use of Baldrige.

Earnings are an important measure to Collin's EOs. The preferred measure is earnings before interest, taxes, depreciation, and amortization (EBITDA). The measure is EBITDA margin, which is represented in Figure 7.5-2 as EBITDA/revenue and is measured as a percentage. Collin's earnings (Figure 7.5-2) demonstrate steady improvement and compare favorably to the CO. study recommended by USEO as a good source for comparative data from privately held ESOP companies.

Figure 7.5-1: Sales by Business Segment

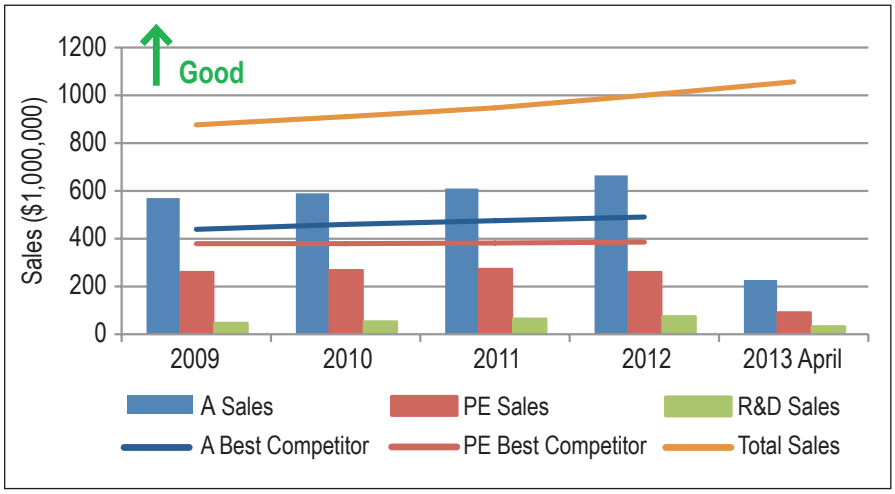


Figure 7.5-2: EBITDA

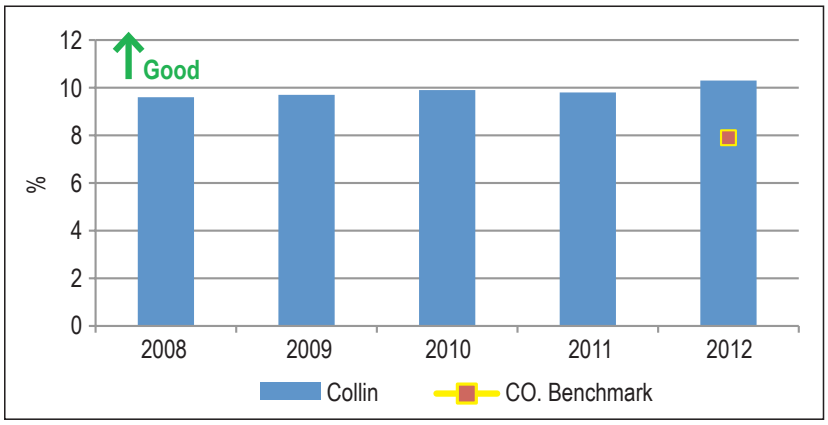
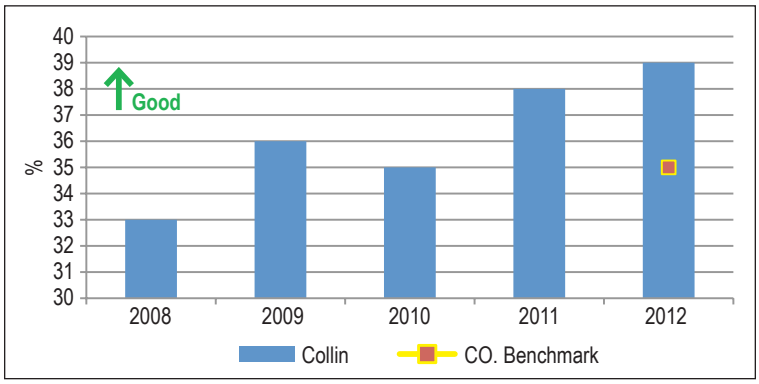


Figure 7.5-3: Gross Margin



Gross Margin (Figure 7.5-3) is an indicator of the profitability of the company. Gross margin demonstrates sustained improvement and has been equivalent to or outperformed the CO. benchmark for the past four years.

Return on Net Assets (Figure 7.5-4) is a good indicator of shareholder value and has been increasing steadily. Return on assets is the product of return on revenue and net asset turnover and incorporates the costs of upgrades and modernizations, which are increasingly important in a capital- and technology-intensive organization like Collin.

Inventory Turns (Figure 7.5-5) provides a measure of how fast a company's inventory moves through the business. It represents how long a company's capital must be dedicated to supporting its inventory. Due to the Partner Supplier program and JIT inventory practice, this measure reflects Collin's efforts to minimize its inventory investments.

Days Outstanding Accounts Receivable (Figure 7.5-6) is an indicator of the efficiency of the billing process, which is needed to maintain good cash flow through the company.

7.5a(2)

The interconnect market does not afford any organization more than about a 10% share of the market. Since typical market share indicators are not effective, Collin relies on other indicators. More than 80% of current orders are from existing customers as repeat business; however, simply measuring the amount of repeat business was not actionable as a refined measure. The

Figure 7.5-4: Return on Net Assets

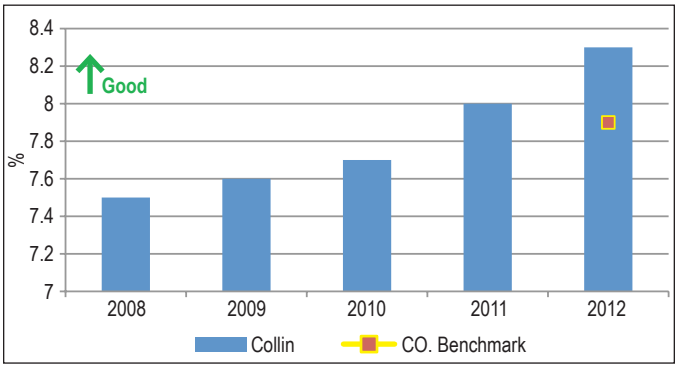


Figure 7.5-5: Inventory Turns

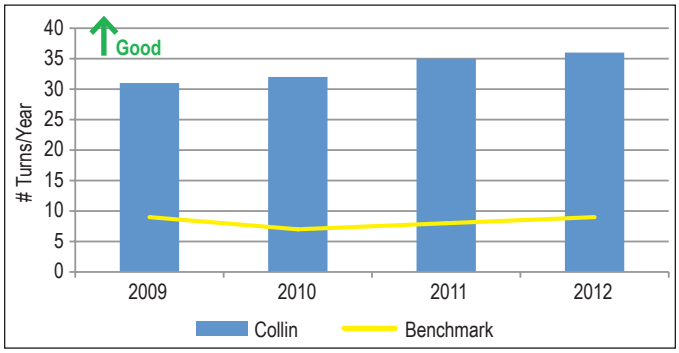


Figure 7.5-6: Days Outstanding Accounts Receivable

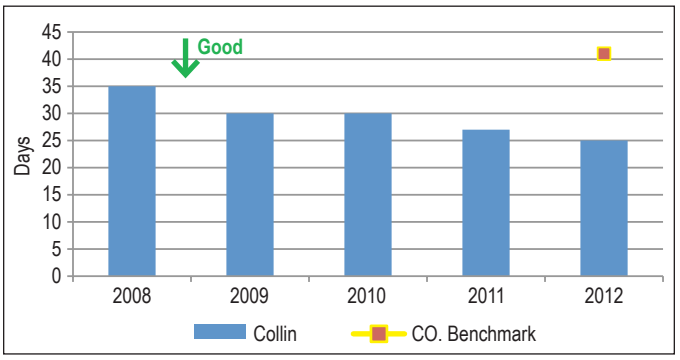
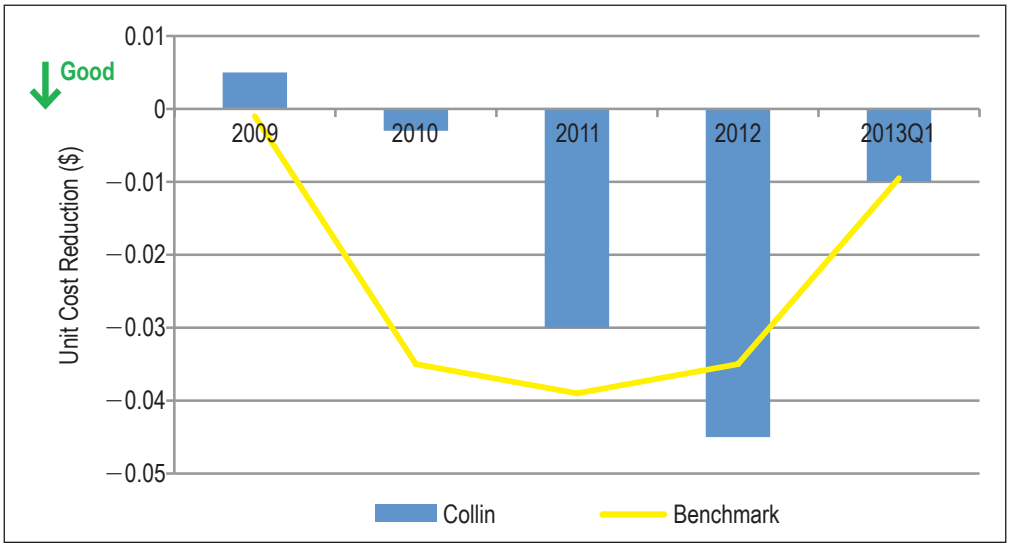


Figure 7.5-7 Unit Cost Reduction—PE

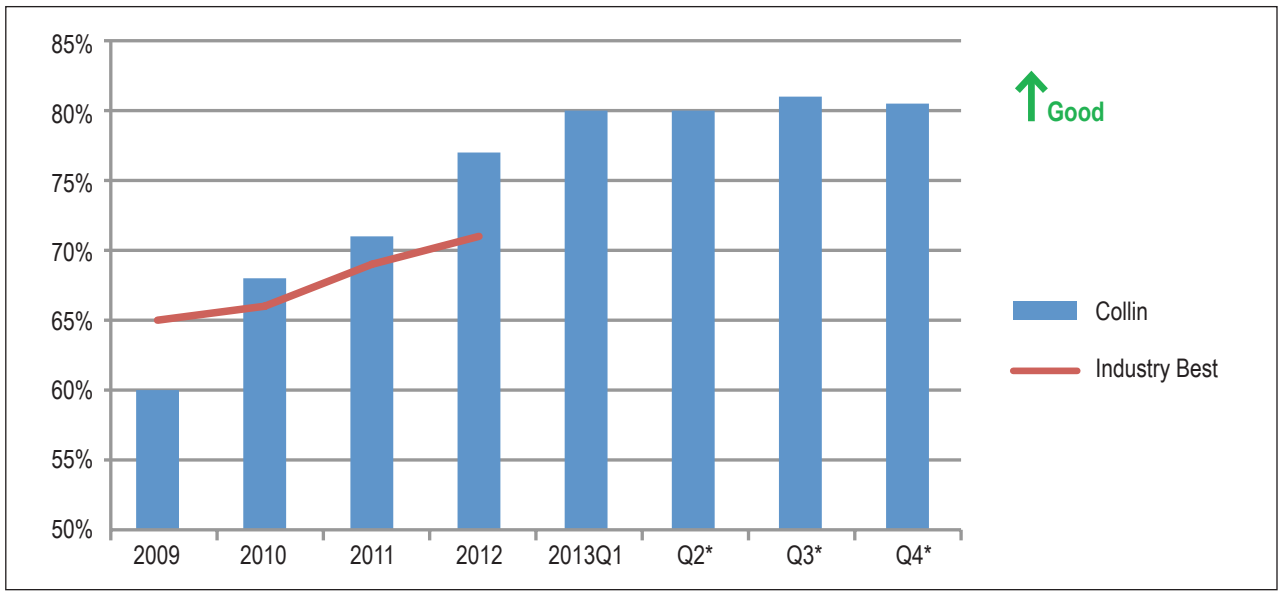


percentage of repeat business compared to the total business (Figure 7.5-8) of Collin is a more actionable measure and a good indicator of the effectiveness of the marketing process.

Some customers have policy statements that will not allow a single supplier to acquire more than 80% of their available business. This creates a cap on the indicator. Collin believes the cap is very near its current level of performance.

As described in 7.2a(1), Collin has been working to reduce unit cost for the PE market in recent years, resulting in a favorable performance trend.

Figure 7.5-8: Percentage of Available Repeat Business Won



The Malcolm Baldrige National Quality Award

The Malcolm Baldrige National Quality Award, created by Public Law 100-107 in 1987, is the highest level of national recognition for performance excellence that a U.S. organization can receive. The award promotes

- awareness of performance excellence as an increasingly important element in U.S. competitiveness and
- the sharing of successful performance strategies and information on the benefits of using these strategies.

The President of the United States traditionally presents the award. The award crystal, composed of two solid crystal prismatic forms, stands 14 inches tall. The crystal is held in a base of black anodized aluminum, with the award recipient's name engraved on the base. A 22-karat, gold-plated medallion is captured in the front section of the crystal. The medal bears the name of the award and "The Quest for Excellence" on one side and the Presidential Seal on the other.

Organizations apply for the award in one of six eligibility categories: manufacturing, service, small business, education, health care, and nonprofit. Up to 18 awards may be given annually across the six categories.

For more information on the award and the application process, see **http://www.nist.gov/baldrige/apply.cfm**.

The Quest for Excellence®

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Marriott Baltimore Waterfront, Baltimore, Maryland

Each year at The Quest for Excellence, Baldrige Award recipients share their exceptional performance practices with leaders of business, education, health care, and nonprofit organizations and inspire attendees to apply the insights they gain within their own organizations. Plan to attend and learn about the recipients' best management practices and Baldrige journeys, participate in educational presentations on the Baldrige Criteria, and network with Baldrige Award recipients and other attendees.

For more information on The Quest for Excellence, see **http://www.nist.gov/baldrige/qe**.

The ratio of the Baldrige Program's benefits for the U.S. economy to its costs is estimated at **820 to 1**.

93 Baldrige Award winners serve as national role models.

2010–2012 award applicants represent **450,468 jobs**, 2,213 work sites, over $74 million in revenue/budgets, and about 417 million customers served.

478 Baldrige examiners volunteered roughly **$7.3 million** in services in 2012.

State Baldrige-based examiners volunteered around **$30 million** in services in 2012.

Baldrige Performance Excellence Program

Created by Congress in 1987, the Baldrige Program (http://www.nist.gov/baldrige) is managed by the National Institute of Standards and Technology, an agency of the U.S. Department of Commerce. The program helps organizations improve their performance and succeed in the competitive global marketplace. It is the only public-private partnership and Presidential award program dedicated to improving U.S. organizations. The program administers the Presidential Malcolm Baldrige National Quality Award.

In collaboration with the greater Baldrige community, we provide organizations with

- an integrated management framework;
- organizational self-assessment tools;
- analysis of organizational strengths and opportunities for improvement by a team of trained experts; and
- educational presentations, conferences, and workshops on proven best management practices and on using the Baldrige Criteria to improve.

Foundation for the Malcolm Baldrige National Quality Award

The Foundation's main objective is to raise funds to permanently endow the award program. Prominent leaders from U.S. organizations serve as foundation trustees, and a broad cross section of U.S. organizations provides financial support to the foundation.

Alliance for Performance Excellence

The Alliance (http://www.baldrigepe.org/alliance) is a nonprofit national network of local, state, and regional Baldrige-based programs working with organizations from all industry sectors. Alliance members offer performance improvement tools and resources at the grassroots level, giving organizations a simple and straightforward way into the Baldrige framework and thereby helping them improve their efficiency, effectiveness, and results. Alliance member programs serve as a feeder system for the national Baldrige Award.

American Society for Quality

The American Society for Quality (ASQ; http://www.asq.org/) assists in administering the award program under contract to the National Institute of Standards and Technology (NIST). ASQ's vision is to make quality a global priority, an organizational imperative, and a personal ethic and, in the process, to become the community for all who seek quality concepts, technology, or tools to improve themselves and their world.

For more information:
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