



Dreamspace: The Future of Commercial Bakery Equipment

Baking & Snack +  **BEMA**



CYPRESS RESEARCH
ASSOCIATES

Introduction

Cypress Research Associates, LLC conducted a study commissioned by *Baking & Snack* magazine and BEMA which explored **the future of commercial bakery equipment**.

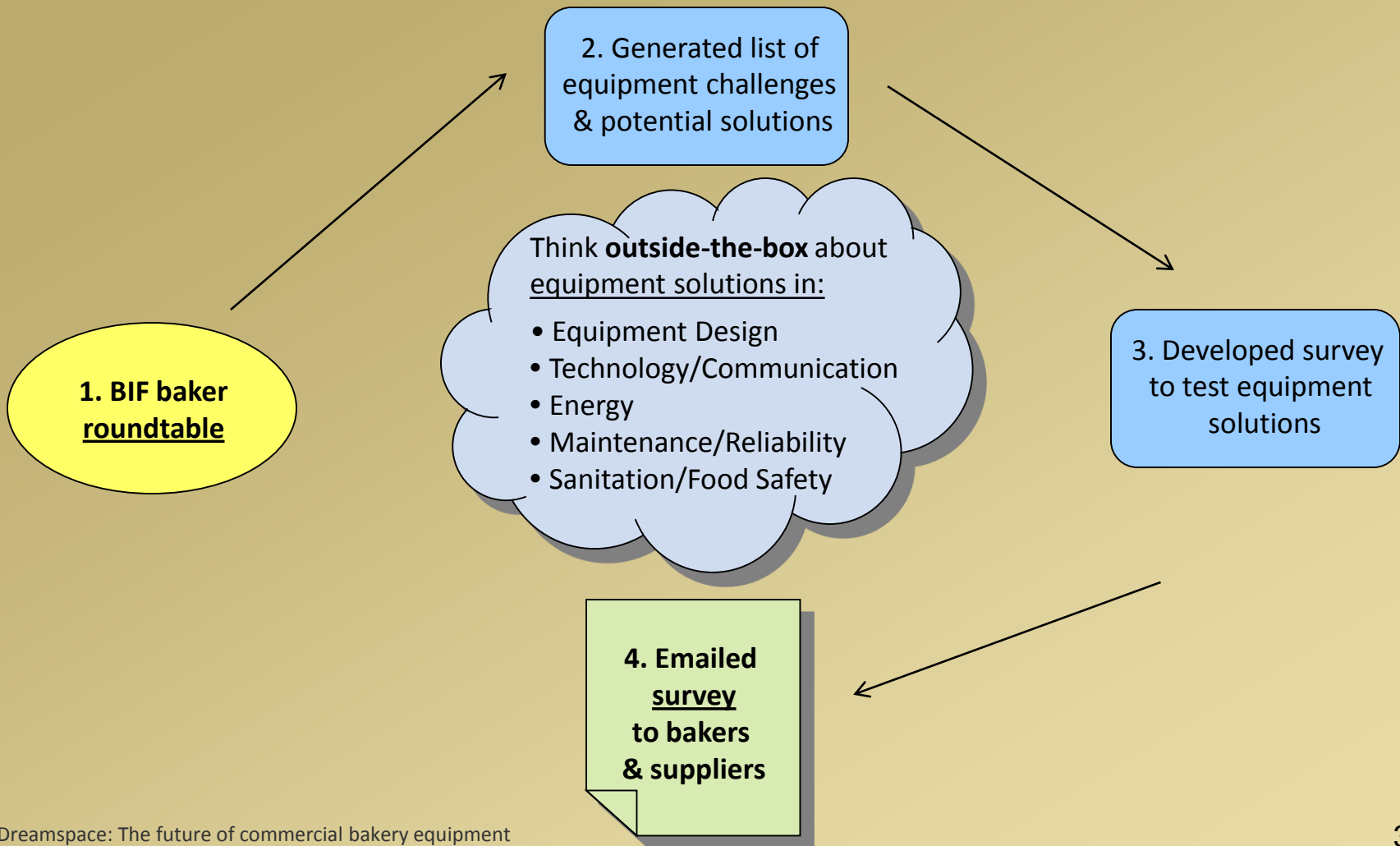
Phase 1: BIF Baker Roundtable (November 2011)

Phase 2: Online Industry Survey of Bakers & Equipment Suppliers (February 2012)



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Commercial Bakery Equipment

Study Methodology



Methodology: Online Survey

Baking & Snack magazine provided Cypress Research Associates, LLC an Excel file of contact information which contained a stratified random sampling of 1,487 baking industry executives. BEMA provided Cypress Research with an Excel file of contacts for 374 equipment suppliers.

Separate online surveys were deployed to each industry segment – bakers and suppliers – during February 2012. Survey responses were received from a total of:

- ✓ 119 bakers (8% response rate)
- ✓ 107 equipment suppliers (29% response rate)

The statistical information within the presentation may be accepted as accurate within a tolerance of +/- 5 percentage points at the 90% level of confidence for the total sample. Sub-samples are, of course, subject to wider tolerances.

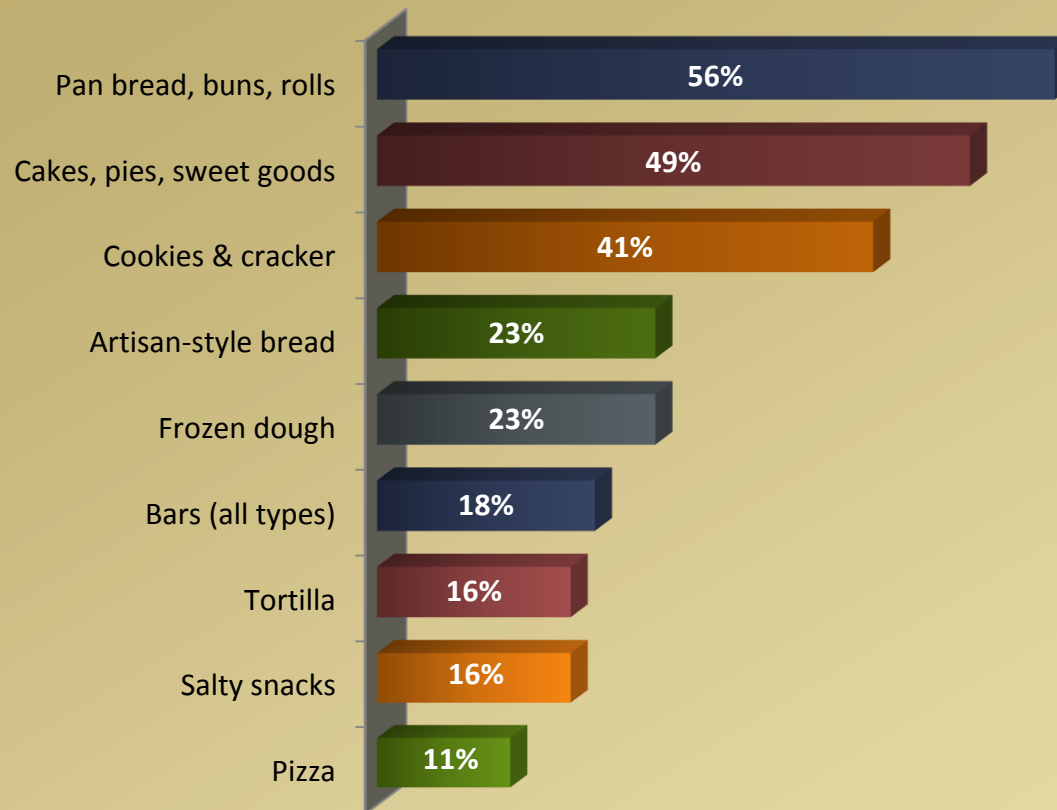
For more information about this study's findings, please contact Marjorie Troxel Hellmer at 816.361.6596 or mthellmer@cypressresearch.com.

Study Results

Respondent Profile

Respondent Profile

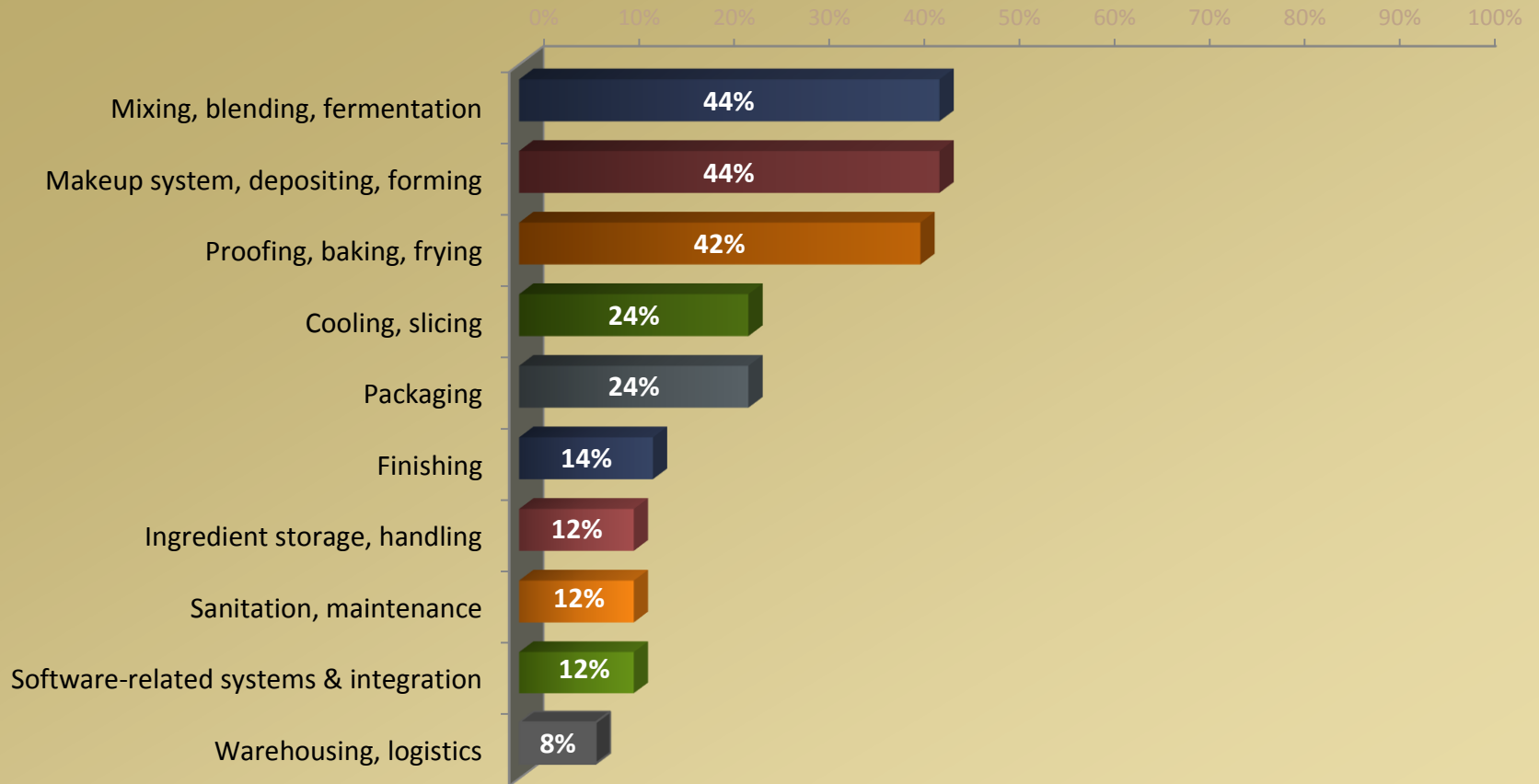
Primary business - BAKERS



Note: Multiple responses accepted

Respondent Profile

Primary business - SUPPLIERS

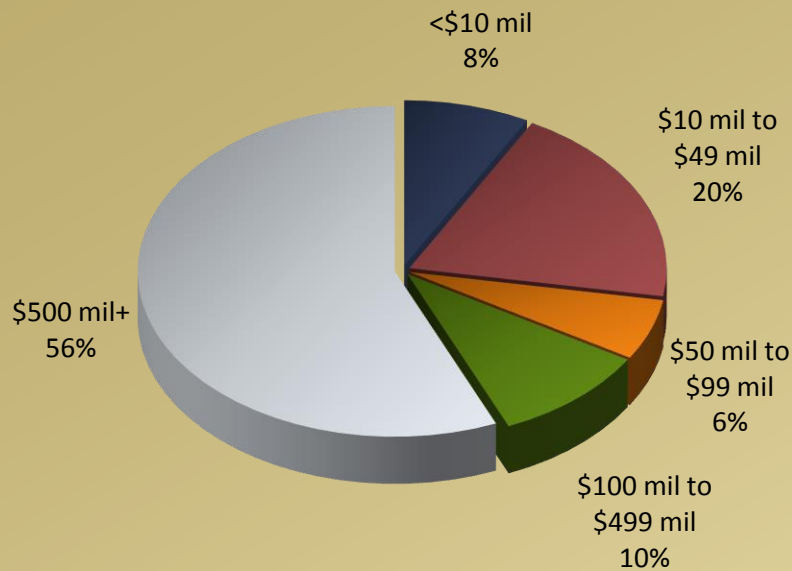


Note: Multiple responses accepted

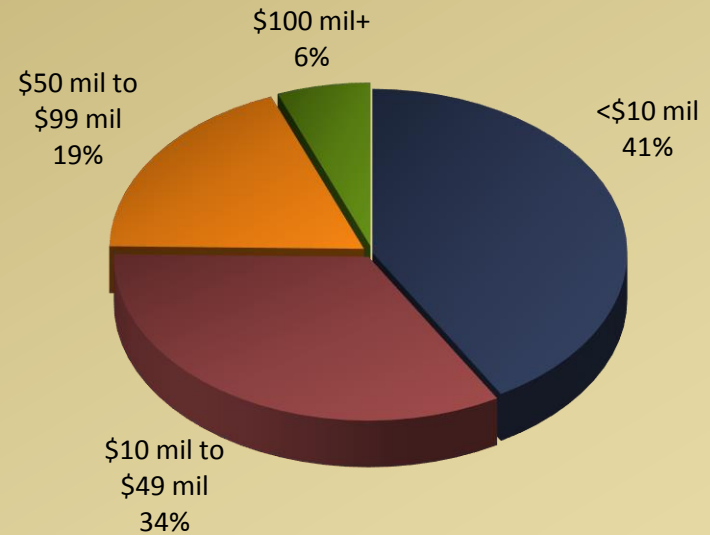
Respondent Profile

Annual company-wide gross sales

Bakers



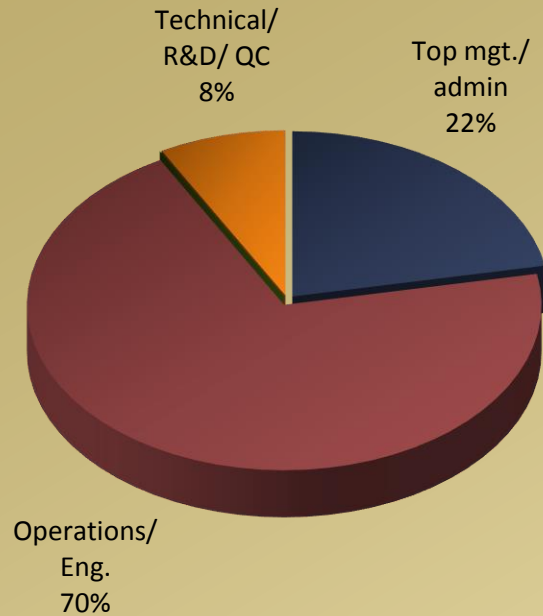
Equipment Suppliers



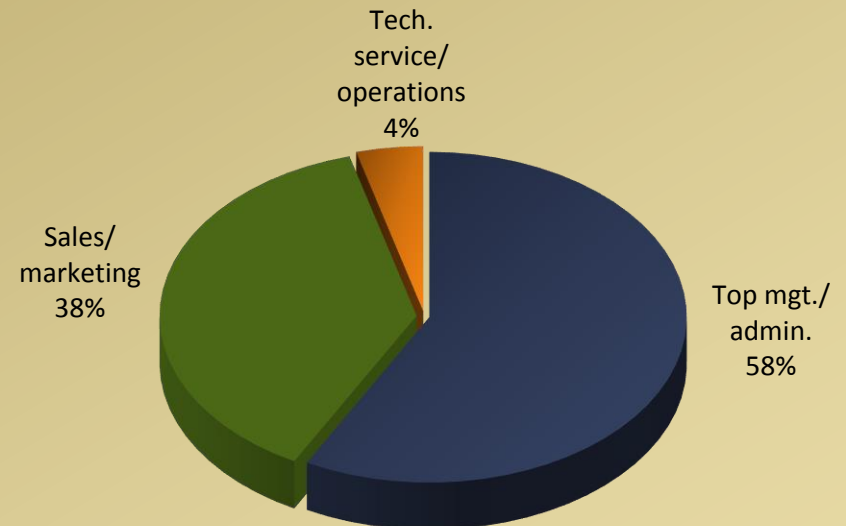
Respondent Profile

Primary job function

Bakers

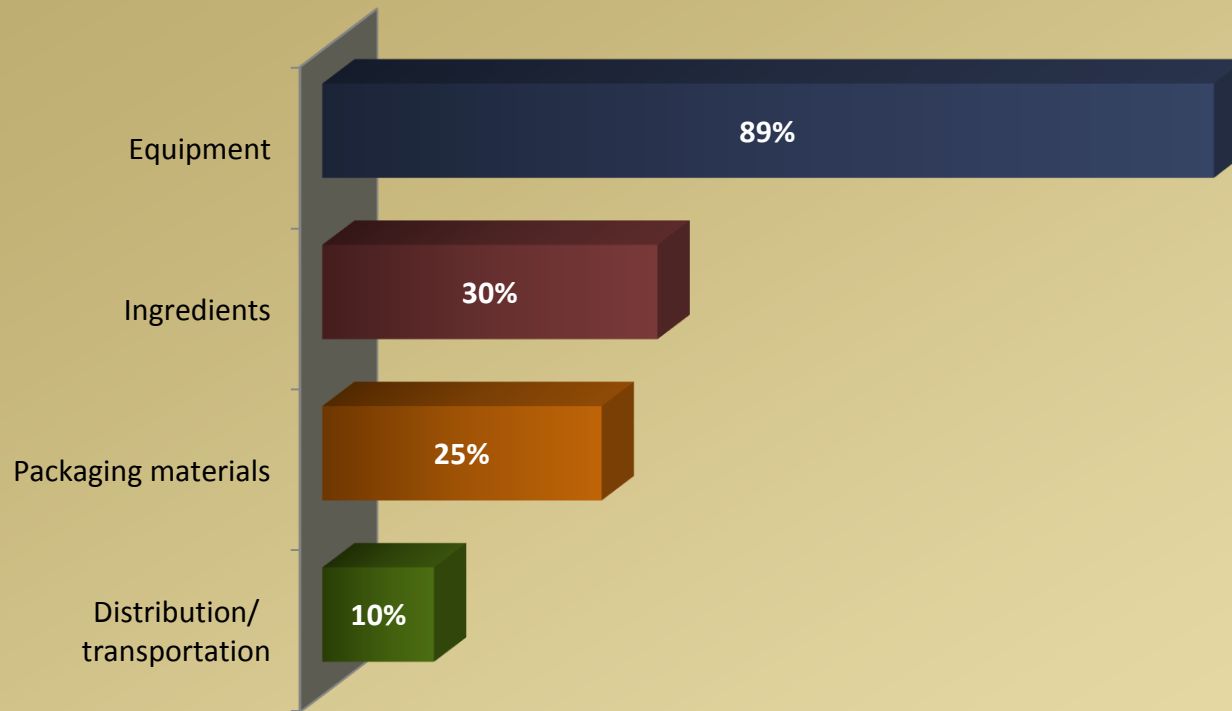


Equipment Suppliers



Respondent Profile

***Bakers only* - Purchasing involvement (buying, recommending or approving) in the following categories:**



Note: Multiple responses accepted

Study Results:

Perceived Value of Equipment Solutions

Perceived Value of Equipment Solutions

For the remainder of the survey, participants were presented with a list of **25 equipment solutions** that were grouped into the following areas:

- Equipment Design/Equipment Features (7 items)
- Technology/Communication (5 items)
- Energy (5 items)
- Maintenance/Reliability (3 items)
- Sanitation/Food Safety (5 items)

Perceived Value of Equipment Solutions

Participants were asked the following question about each equipment solution:

Baker Survey:

- How valuable do you believe it would be to implement the following equipment solutions in **your** facilities? (Please think outside the box – disregard cost and current availability)

Supplier Survey:

- How valuable do you believe it would be to implement the following equipment solutions in **your customers'** facilities? (Please think outside the box – disregard cost and current availability)

Participants rated each solution on a scale of 1='Not at all Valuable' to 7='Very Valuable'

Perceived Value of Equipment Solutions

Sample Equipment Challenge/Solution:

Q: How valuable do you believe it would be to implement the following equipment solutions in your (or your customers') facilities? *(Please think outside the box – disregard cost and current availability)*

Current Challenge: Proofers and ovens waste significant energy during startup/cool down

Future Solution: Proofer and oven interiors made of materials that do not absorb heat

(Examples of benefits: Saves energy, time & money; reduces lead time needed to pre-heat ovens; quickly stops proofing process)

**Not at all
Valuable**

1

2

3

**Somewhat
Valuable**

4

5

6

**Very
Valuable**

7

Perceived Value of Equipment Solutions

Overall findings reveal that:

- ✓ Bakers' average ratings of the 25 equipment solutions ranged from:
 - **4.9 to 6.3** (7='Very Valuable')

- ✓ Equipment suppliers' average ratings of the 25 equipment solutions ranged from:
 - **4.4 to 6.0** (7='Very Valuable')

- ✓ Bakers tended to rate proposed equipment solutions as more valuable than suppliers

Following are the TOP RATED equipment solutions for each content area according to bakers.

Study Results:

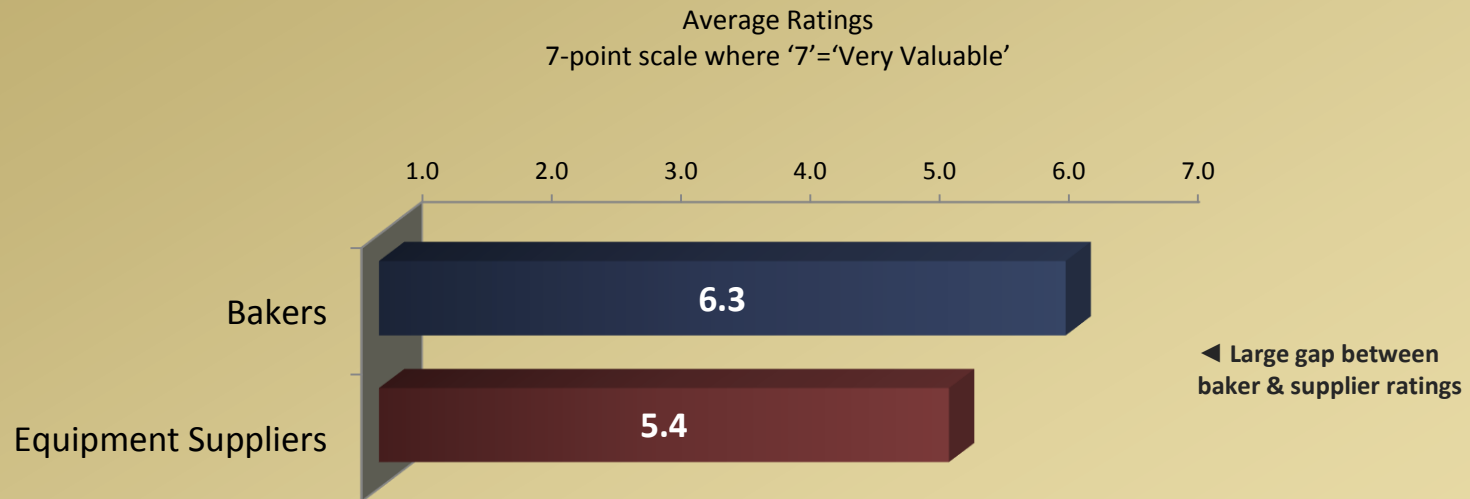
Equipment Design/Equipment Features

Equipment Design/Equipment Features

Current Challenge: Equipment guards protect operators from hazards, but reduce visibility/accessibility

Future Solution: Equipment designed without hazards, therefore no need for guards

(Examples of benefits: Improves equipment visibility; improves employee safety; reduces maintenance)



Study Results:

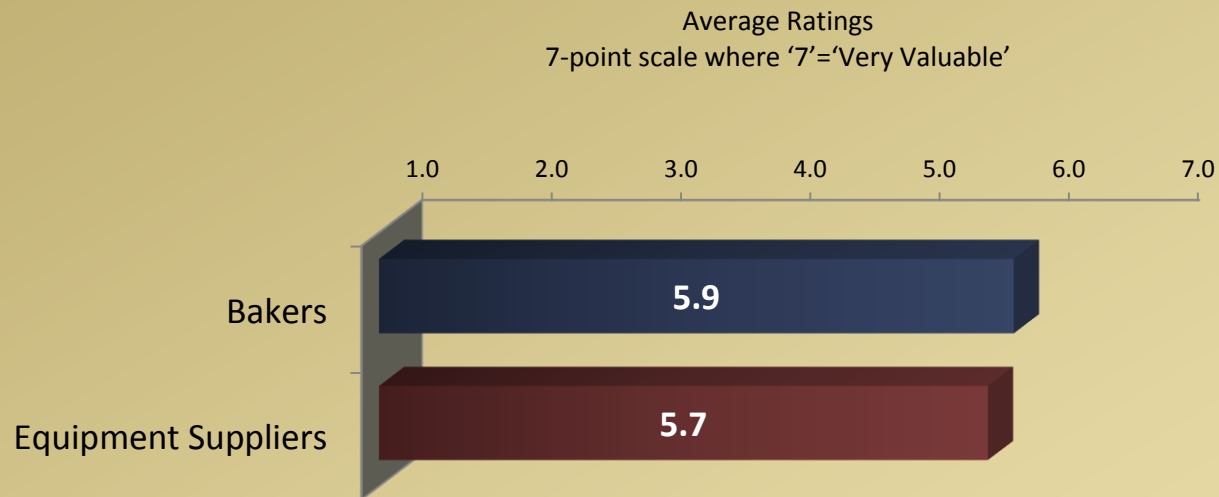
Technology/Communication

Technology/Communication

Current Challenge: Current diagnostics for operational and performance indicators are lagging (e.g., after dough is mixed, bread is baked)

Future Solution: Integrated, real-time diagnostics for operating conditions, performance, changes to dough, proofing or baking processing (e.g., product sensors that deliver real-time indicators)

(Examples of benefits: Less waste of finished dough/finished product)

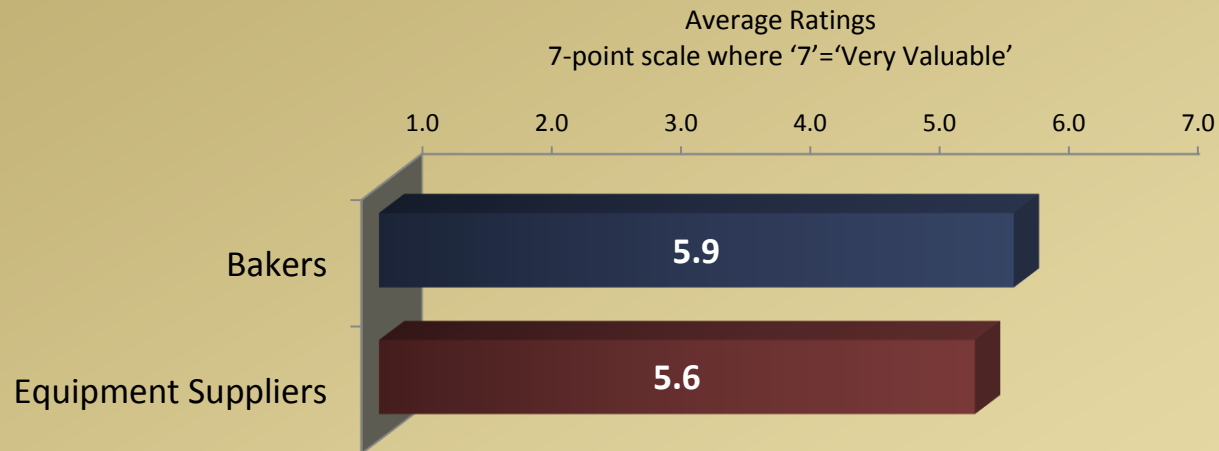


Technology/Communication

Current Challenge: Plant floor machines operate independently, are not fully integrated from beginning to end of process; manual changeovers are required

Future Solution: Entire plant floor is integrated, wirelessly connected, machines talk to each other, run appropriately, self-correcting/adjusting throughout baking process; floor wirelessly mapped for automatic changeovers

(Examples of benefits: Lights-out bakery that is remotely monitored)



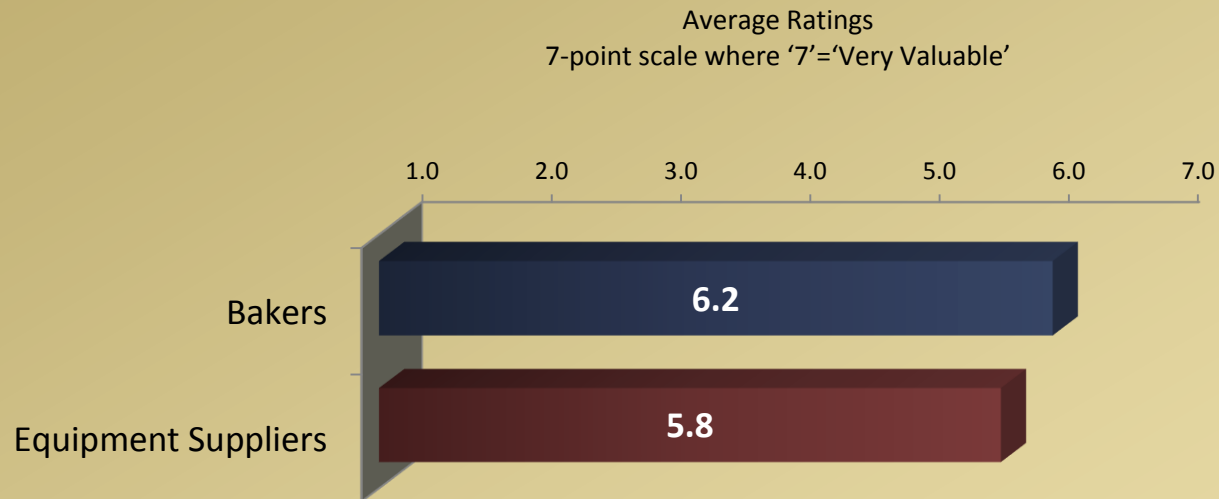
Study Results:

Energy

Energy

Current Challenge: Equipment not operating at maximum efficiency

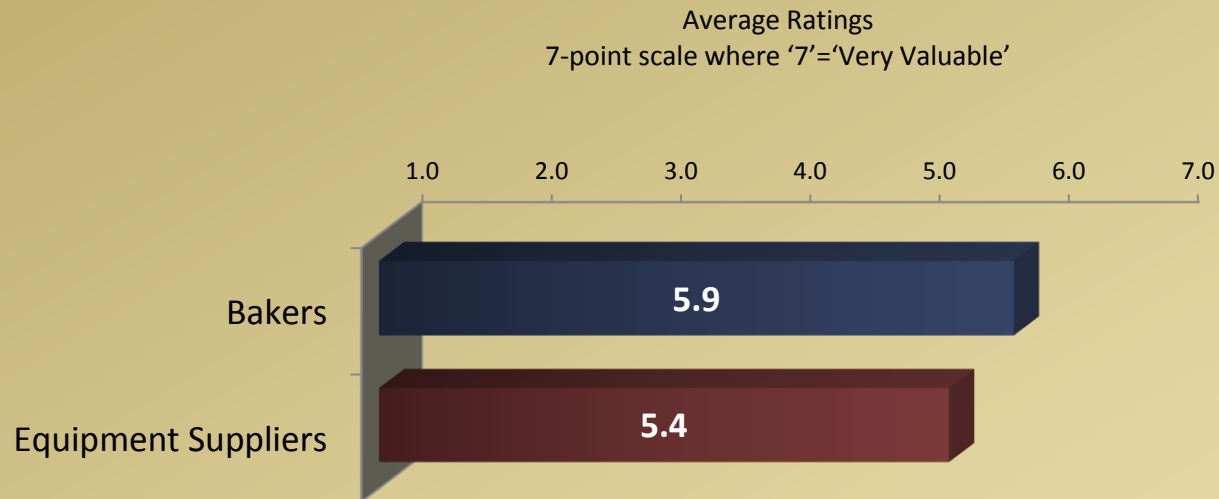
Future Solution: Equipment that is affordable, highly energy-efficient/green (benefits to air compressors, oxidizers, ovens, boilers, blowers, pumps)



Energy

Current Challenge: Lack of widespread recovery of heat/energy from equipment

Future Solution: Recovery of all heat/energy from the process for reuse, storage or feeding back to the utility grid



Study Results:

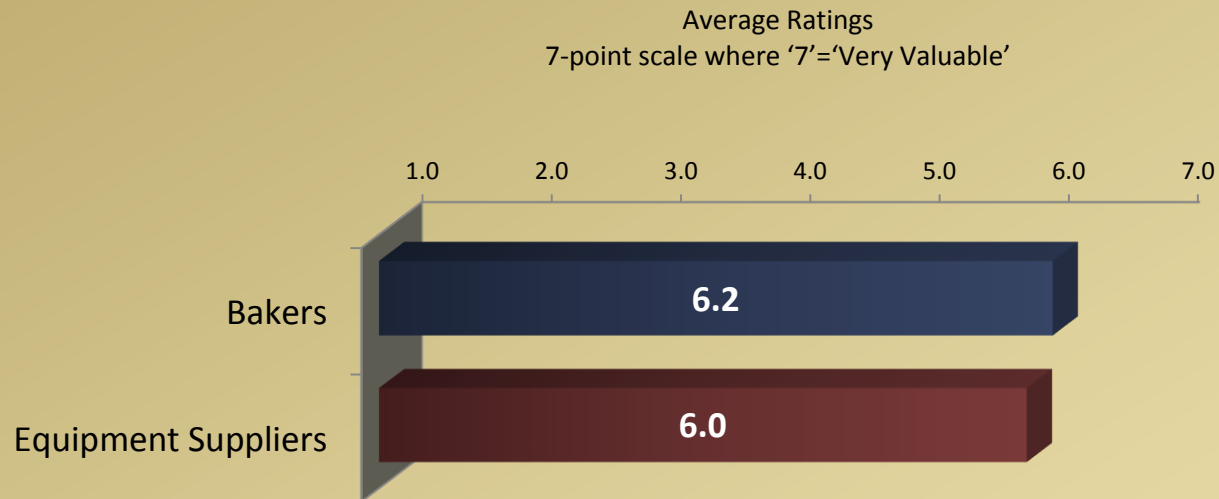
Maintenance/Reliability

Maintenance/Reliability

Current Challenge: Current diagnostics for maintenance indicators are lagging

Future Solution: Integrated, real-time diagnostics for maintenance

(Examples of benefits: Equipment diagnoses specific needs; emphasizes leading/predictive indicators; forecasts part wear-out; uses forecasting for better efficiencies)



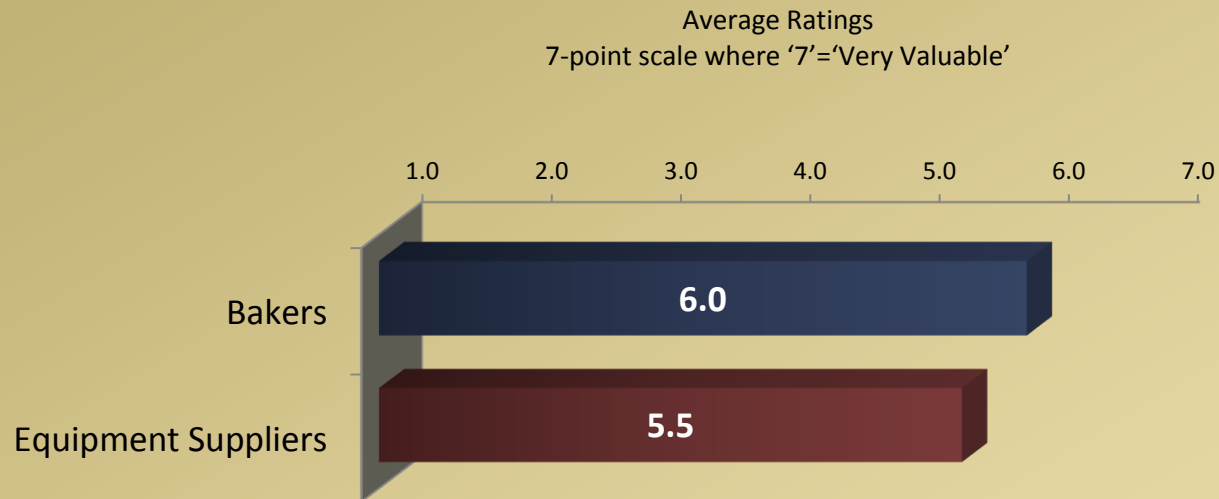
Study Results:

Sanitation/Food Safety

Sanitation/Food Safety

Current Challenge: Labor-, time-, and cost-intensive process for foreign material, allergen and pathogen testing

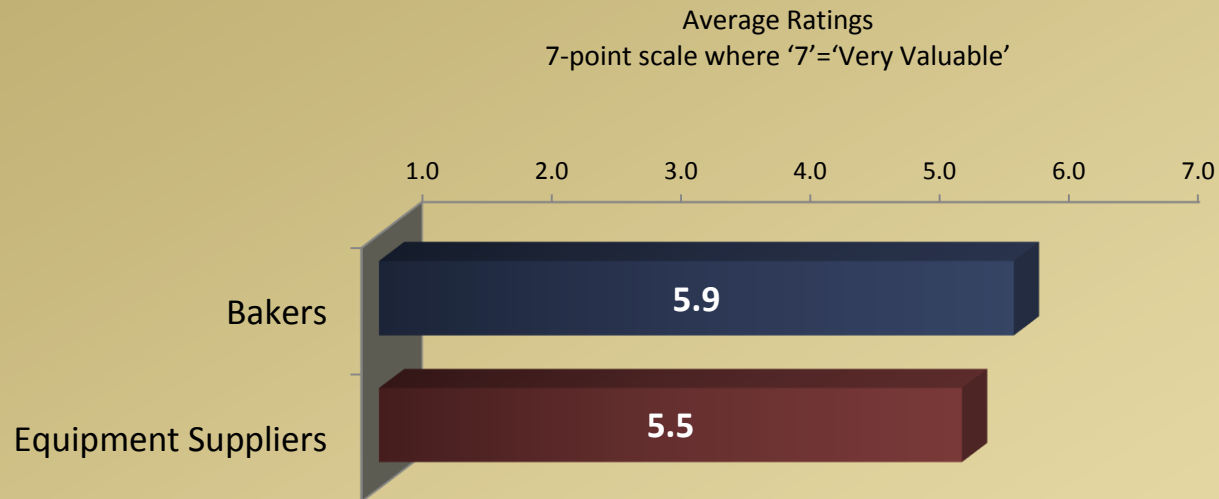
Future Solution: Advanced, real-time environmental sensors to detect foreign materials, allergens and pathogens



Sanitation/Food Safety

Current Challenge: Clean-in-place (CIP) is not 100% effective

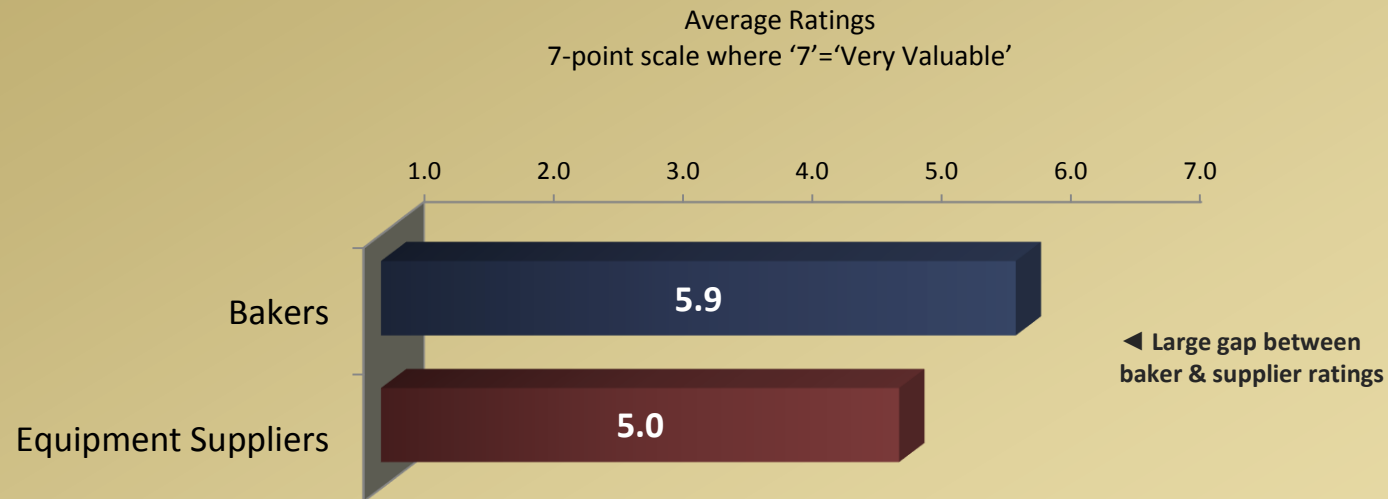
Future Solution: Automatic CIP with 100% assurance safety verification



Sanitation/Food Safety

Current Challenge: Potential risk of allergens/pathogens on equipment (e.g., mixers, make-up, pans, conveyors)

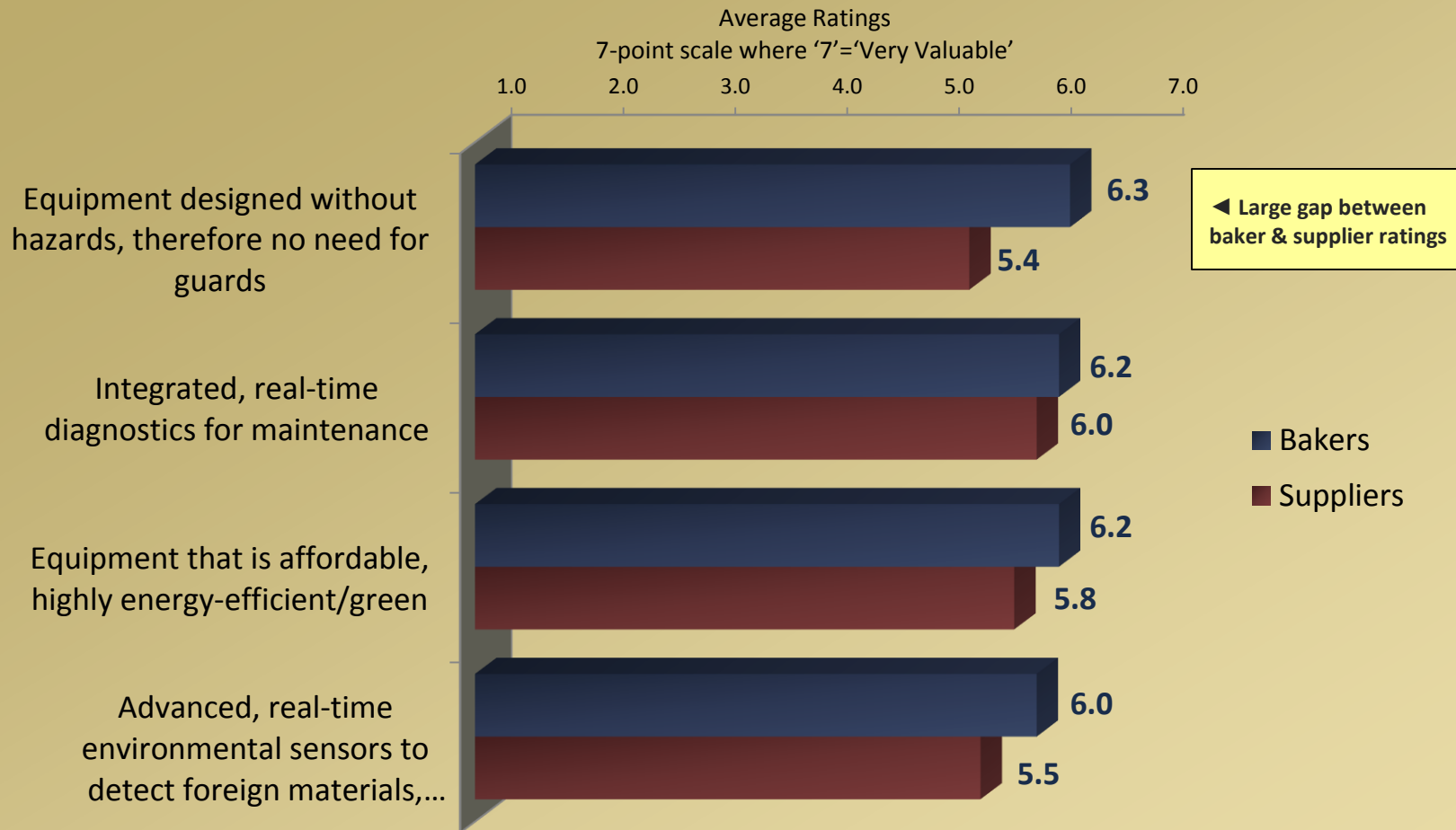
Future Solution: Non-stick and anti-microbial equipment materials (designs out foreign materials)



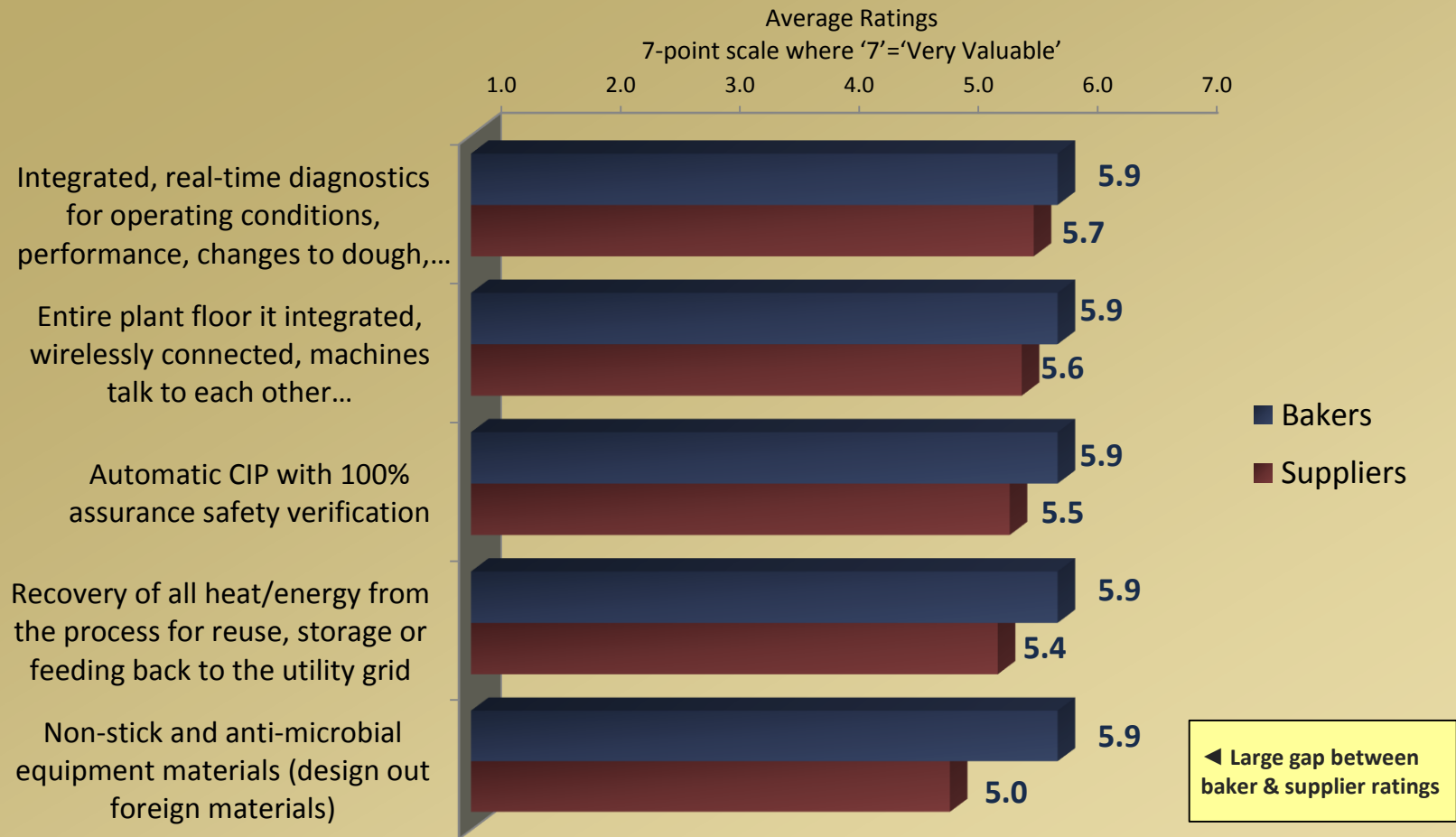
Summary:

Ranking of Top Equipment Solutions

Summary: Ranking of Top Equipment Solutions



Summary: Ranking of Top Equipment Solutions

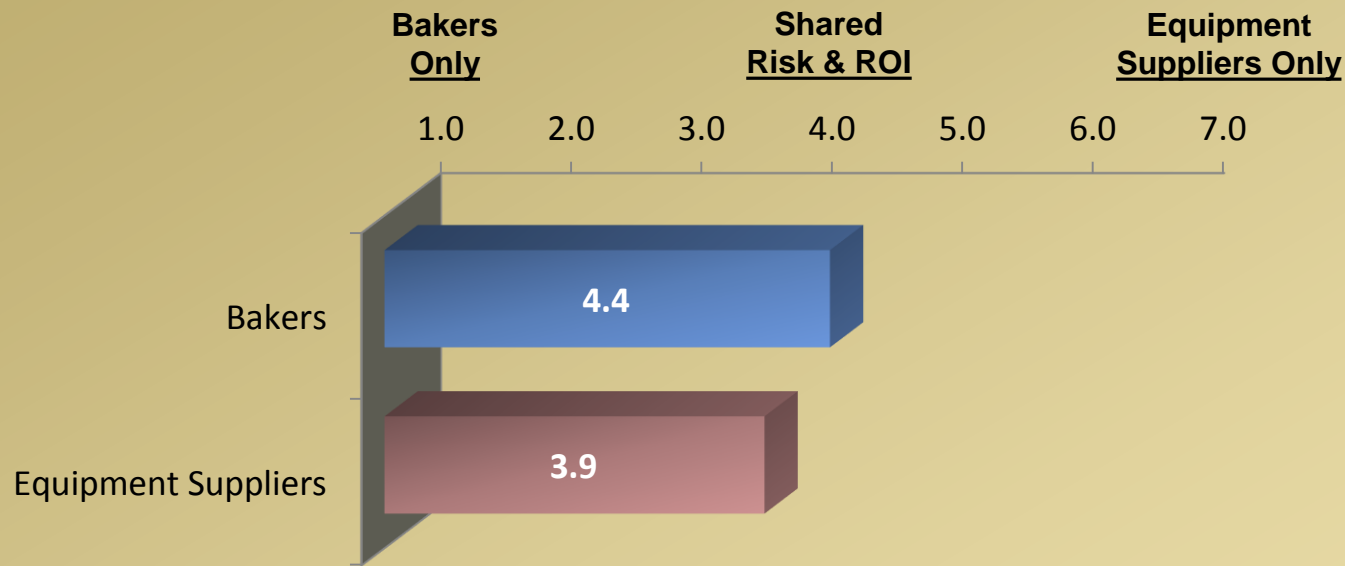


Study Results:

Final Industry Thought Question

Risk & ROI of Equipment Innovation

In order to foster greater innovation within the commercial baking industry, who (bakers or equipment suppliers) should be responsible for the Risk & ROI of testing existing technologies from other industries and applying them to the baking industry?



Note: Average ratings



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