



The Journey: Climbing the CAD to Business Central Integration Mountain

CADTALK Software | Hosted by Sabre Limited

Meet Your Guides

The experts leading you up the mountain today

John Thomas



CADTALK

Host & Moderator

Jeff Brickler



CADTALK

Head of Sales

Dylan Olson



CADTALK

Solutions Architect

Why We're Here Today

1 The Universal Challenge

Engineering data trapped in silos — great data that can't reach the people and systems that need it most.

2 Integration as a Journey

Not a one-time project, not a checkbox — a continuous path toward greater efficiency and intelligence.

3 Your Takeaway

By the end of this session, you'll know exactly where you are on the mountain — and what your next step looks like.



The Disconnected Reality

Engineering teams produce incredible data — but it's locked away, unable to flow where it's needed.



CAD

Rich design data, geometry, and specifications — isolated in engineering tools.



PDM

Product data management systems holding revisions and documents — disconnected from production.



ERP

Business Central waiting for accurate item masters and BOMs — fed by slow manual processes.



MES

Shop floor systems starved of timely, accurate engineering data to execute production.

- ❏ Manual handoffs create bottlenecks at every stage — turning hours of engineering work into days of waiting.



The Real Cost of Manual Processes

The Numbers Don't Lie

44%

Doubled Data Collection

Of manufacturers since 2022

70%

Still Manual Entry

Despite the data explosion

What This Costs You

- Rising labor and error costs — now a **top CEO concern**
- Engineering change cycles measured in **days, not hours**
- Hidden costs: rework, delays, and missed quotes
- Engineers spending time on data entry instead of engineering

What This Looks Like in Business Central

Manual processes create predictable pain points across every core manufacturing workflow in BC.

Item Master Creation Bottlenecks

Every new part requires manual entry — slowing down procurement, planning, and production scheduling before work even begins.

BOM Accuracy Issues

Manual transcription of bill of materials introduces errors that cascade through production, costing, and inventory management.

Routing Creation Delays

Work center sequences and operation times entered by hand — a time-consuming process prone to omissions and mistakes.

Engineering Change Order Processing

ECO processing time stretches from hours to days as changes must be manually re-entered and verified across multiple records.

Audience Poll #1

How are you currently transferring design data into your ERP?

A

Completely manual — re-keying everything by hand

B

Spreadsheet-based exports and imports

C

Basic integration — simple fields only

D

Automated integration with business rules



Integration is a Journey, Not a Destination

Success isn't reaching the summit — it's finding the right elevation for your business.

The Integration Mountain has six distinct stages. Every organization sits somewhere on this mountain. The goal isn't always the top — it's knowing where you are and making a deliberate choice about where to go next.

Base Camp: Manual Processes

STAGE 1 OF 6

What It Looks Like

- Complete manual re-entry of all design data into ERP
- Printed BOMs passed between departments
- Sticky notes and email chains as the "integration layer"
- No connection whatsoever between CAD and Business Central

The Reality at Base Camp

Every engineer is a data entry clerk. Every change requires a full re-entry cycle. The systems that should be working together are operating as completely separate islands.

This is where most manufacturers start — and where too many stay far longer than they should.



Fogbreak Overlook: Spreadsheet Solutions

STAGE 2 OF 6

A step up from pure manual entry — but still far from a real solution.

1

Excel-Based Manipulation

Data exported from CAD, massaged in spreadsheets, then imported into BC — a fragile multi-step process.

2

VLOOKUPS & Macros

Complex formulas that only one person truly understands — creating dangerous single points of failure.

3

Manual Cycles Remain

Still requires manual export and import cycles — automation is an illusion, not a reality.



"Critical infrastructure only one person understands" — and what happens when that person leaves?



Connection Crest: Basic Integration

STAGE 3 OF 6

What Works

- Simple field mapping between CAD and BC
- Part numbers and basic attributes transfer automatically
- Single-level BOMs handled without manual entry

Where It Falls Short

Connection Crest handles the easy 20% of your data and declares victory. The moment complexity enters — multi-level assemblies, business rules, revision control — you're back to manual workarounds.

❏ "Handles the easy 20% and declares victory" — leaving 80% of the real challenge unsolved.





Intelligence Ridge: Smart Automation

STAGE 4 OF 6

This is where integration starts delivering transformational business value.



Rules Engine

Configurable business logic applied automatically — your processes encoded into the integration layer.



Complex Assemblies

Multi-level BOMs automated end-to-end — no manual intervention required regardless of depth or complexity.



~60% Efficiency Gain

Dramatic reduction in time spent on data transfer — engineers focus on engineering, not data entry.



Managing by Exception

Instead of handling every task manually, teams only intervene when something truly requires human judgment.

What 60% Efficiency Means to the Business

Intelligence Ridge isn't just a technical milestone — it's a financial transformation.

\$234K

Recovered Per Year

Per 10 engineers — time redirected from data entry to value-creating engineering work

2–3mo

Payback Period

Typical time to full return on investment at Intelligence Ridge

Lead Times

Engineering changes that took **days** now complete in **hours** — dramatically accelerating time to production.

Error Elimination

Error-driven rework eliminated at the source — no more transcription mistakes cascading through production.

Competitive Edge

Faster quotes, faster changes, faster delivery — a measurable advantage in every customer interaction.

Automation Aerie: Predictive Intelligence

STAGE 5 OF 6

Reaching ~80% Automation

At Automation Aerie, the integration layer doesn't just react — it anticipates.

- Cross-department workflow automation
- Proactive issue identification before problems reach the shop floor
- Intelligent routing of exceptions to the right people

The Shift in How Teams Work

At this elevation, the integration system becomes a strategic asset — not just a data pipe. Teams spend their time on decisions, not data movement. The system surfaces what needs attention before it becomes a crisis.



Integration Summit: Full Automation

STAGE 6 OF 6

~95% Automation

Zero manual intervention for standard processes. Design flows to the shop floor without human handoffs — the engineering-to-production pipeline operates as a single, seamless system.

Design to Production

Engineer completes an assembly in CAD — Business Central is updated automatically, production is scheduled, materials are planned.

Zero Handoff Errors

No human in the loop for standard processes means no transcription errors, no delays, no "I thought you sent that."

Continuous Synchronization

CAD and ERP stay in perfect sync — revisions, changes, and new designs propagate instantly across the entire business.





Audience Poll #2

Where is your organization on Integration Mountain?

A — Base Camp

Fully manual — all data re-entered by hand

B — Fogbreak Overlook

Spreadsheet-based exports and imports

C — Connection Crest

Basic integration — simple fields only

D — Intelligence Ridge or Higher

Smart automation with business rules



The Business Central Opportunity

Business Central is architected for extensibility — its adaptability is its greatest strength for manufacturers.

What BC Does Natively

- Item master management and BOM structures
- Production orders and routing
- Inventory and procurement planning
- Financial integration across operations

What CADTALK Adds

- Automated population of BC from CAD and PDM systems
- Business rules that match your specific engineering processes
- Revision control keeping CAD and ERP synchronized
- Transformed BC reporting, planning, and production accuracy

- CADTALK is another piece of what makes Business Central powerful for manufacturers — extending BC's native strengths into the engineering domain.

Beyond Basic Field Mapping

True integration goes far deeper than moving part numbers from one system to another.



Item Master Creation

Automatic creation with all proper attributes — categories, units of measure, costing methods — applied by rule.



Multi-Level BOM Transfer

Complete assembly structures transferred with routing intelligence — every level, every component, every operation.



Business Rules Engine

Rules that match your specific processes — not generic defaults that require workarounds on day one.



Revision Control

CAD and ERP stay synchronized through every engineering change — no version drift, no stale data on the shop floor.

Real-World Example: From Design to Business Central

An engineer completes a complex assembly in CAD. Here's what happens at each maturity level:

Base Camp

1

Engineer prints BOM. Data entry clerk re-keys every item.
2-3 days. Multiple errors introduced.

2

Fogbreak

Engineer exports to Excel. Someone runs macros. Import attempted. Errors corrected manually. 1-2 days.

Connection Crest

3

Simple parts transfer automatically. Complex sub-assemblies still manual. Half a day saved, half still lost.

4

Intelligence Ridge

Full assembly transfers with business rules applied.
Engineer reviews exceptions only. Hours or minutes, not days.

Automation Aerie/Integration Summit

5

Assembly saved in CAD. BC updated automatically.
Production scheduled. Zero manual steps. Minutes.



The Business Case for Acting Now

Common Blockers

- "We're too busy right now"
- "The timing isn't right"
- "We'll do it after the next project"
- "It's not broken enough yet"

Why Waiting Costs More Than Acting

- The cost of manual processes **compounds every month** you delay
- Already in BC? Your data model is clean — this is the **best possible time** to integrate
- Integration planned alongside ERP implementation is **3x easier** than bolted on after go-live
- Every engineering change processed manually is a cost that integration would have eliminated

Five Questions to Ask About Your Integration

Use these questions to honestly assess where you are — and what the opportunity looks like for your team.

1

Engineer Time

How much time do your engineers spend on data entry vs. actual engineering work? What would that ratio look like with automation?

2

BOM Complexity

What percentage of your BOMs are complex multi-level assemblies? Basic integration won't handle these — are you working around it?

3

Change Velocity

How long does an engineering change take to reach the shop floor today? What's the cost of that delay in production and customer satisfaction?

4

Business Rules

Does your current integration handle your business rules automatically — or does it require manual workarounds for anything non-standard?

5

The 60% Question

What would a 60% reduction in data transfer time mean for your team's capacity, lead times, and competitive position?



Concrete Takeaways



Maternity is a Spectrum

Integration maturity isn't binary — it's a continuous journey with meaningful value at every elevation above where you are today.



Basic Integration ≠ Solved

Basic integration handles approximately 20% of the real challenge. The remaining 80% — complexity, business rules, revision control — requires more.



Right Destination for You

The right elevation depends on your complexity, your goals, and your team's capacity. Not every organization needs the summit.



Start with Honesty

Begin with an honest assessment of where you are today. You can't plan the climb without knowing your starting point.



Your Next Step

You don't have to figure this out alone. CADTALK is here to help you find your elevation — honestly and without pressure.



Integration Maturity Self-Assessment

Visit cadtalk.com/journey to help you honestly evaluate where your organization sits on Integration Mountain — and what the gap to the next level looks like.



Discovery Session with CADTALK

No commitment required. A focused conversation about your current state, your goals, and what a realistic path forward looks like for your specific environment.

We'll tell you honestly where you are and what it takes to get to the next level — even if that answer is 'not yet.'



Questions?

Let's Talk

This is your opportunity to dig deeper into anything we've covered — from the Integration Mountain stages to specific Business Central scenarios to the business case for your organization.

Where are you on the mountain?

Share your current state and we'll help you identify the most impactful next step.

What's your biggest integration challenge?

Complex assemblies, business rules, revision control — let's talk through your specific situation.

What would 60% efficiency mean for you?

Run the numbers for your team — the results are often surprising.



Thank You

Thank you for joining us on this journey up Integration Mountain. Special thanks to **Sabre Limited** for hosting today's session.

Stay Connected with CADTALK

Visit **cadtalk.com** to learn more, access resources, and connect with our team. We're here to help you find your elevation.

Recording & Resources

The recording of today's session along with the Integration Maturity Self-Assessment and additional resources will be emailed to all registered attendees.

Special Thanks

A sincere thank you to **Sabre Limited** for hosting this event and bringing together this community of manufacturers navigating the integration journey.