



MIKE MOORE & ASSOCIATES

Learning Session: DITCH THE SPREADSHEET

THE DESIGN AND USE OF LEAN APPLICATIONS BUILT
USING LOW-CODE AND NO-CODE PLATFORMS

MIKE MOORE, MM&A
and **MORNÉ FOURIE**, HALFWAY TOYOTA



Learning Session: Ditch The Spreadsheet!

- So, what's the **Big Idea**?
 - And what's it got to do with LEAN?
- No-Code and Low-Code
 - What is this technology and why does it exist?
- Show me
 - Case study: Robins & Day Used Vehicle Appraisal
 - Case study: Halfway Production Centre
- Here's one I created earlier ...
 - Conference session feedback app
 - How to connect an app that I build to other apps
- What does it all mean for me?

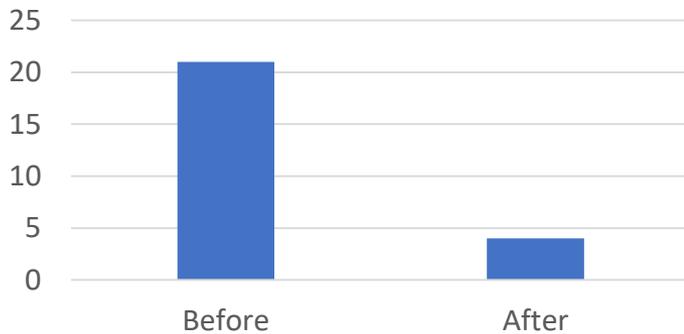
Morné Fourie ...



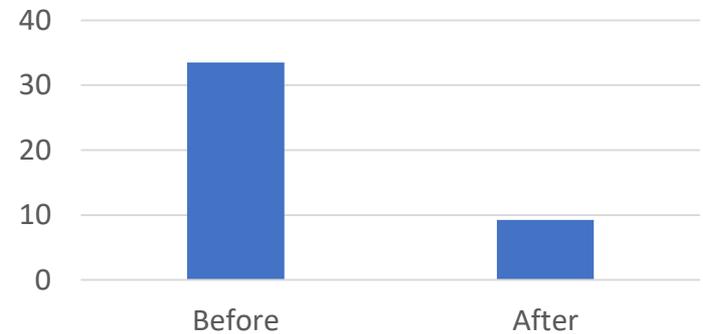
...the mechanic
who builds
apps

What Morne achieved

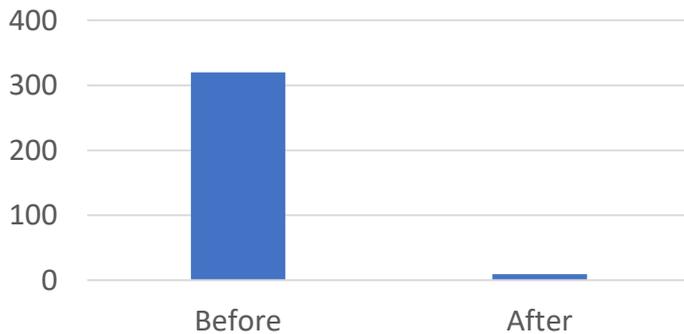
Physical Check & Damage Report



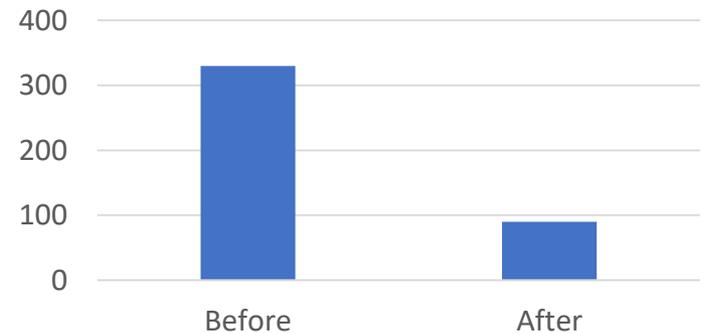
Time to Complete Vehicle



First Vehicle Ready Time



Time to finish batch of 10



The overall impact of the work

- Systems used down from **11** to **5**
- Admin time to complete from **12:30** to **6:34**
- Walks to the same vehicle from **3** to **1**

- Time saved per batch of 10 vehicles **5 hours 11 minutes**
- That's **18 work days per month** saved

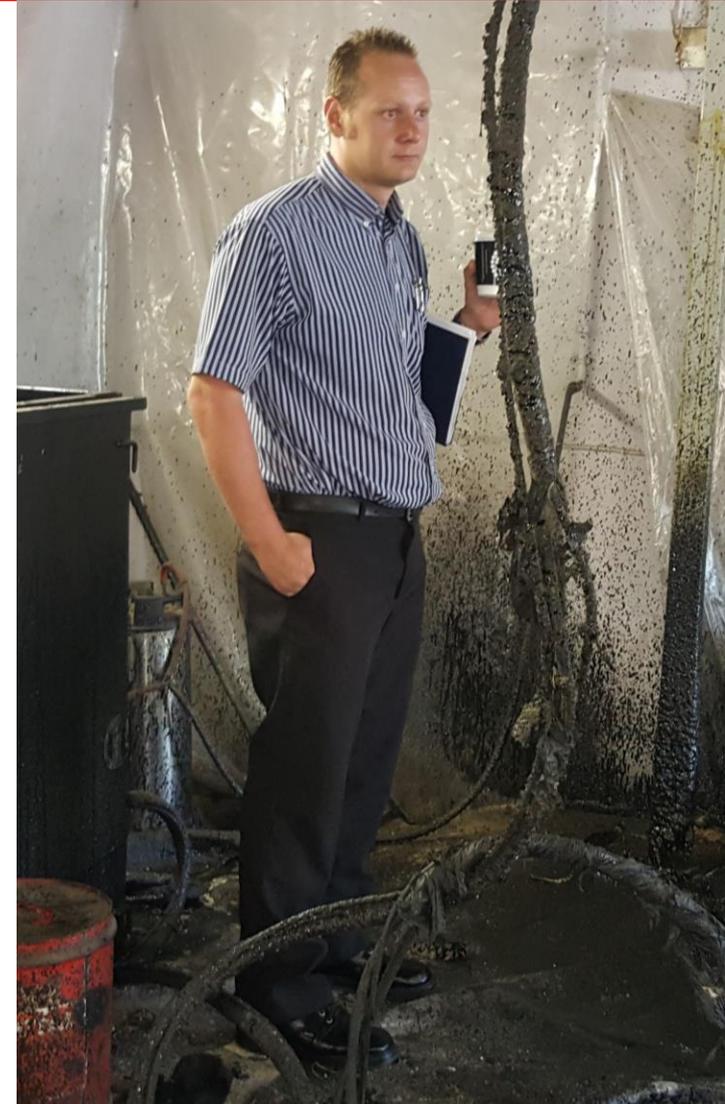
- This has been a successful and entirely *sustainable* transformation

Morné's approach

- Focus on flowing value to the customer
- Concentrate on quality first, then speed, then cost
- Wanted to build an app that was a solution to a problem, not just another system
- Create an app that supported his team's way of working
- Needed to be able to kaizen the admin and therefore the app alongside the physical work

Halfway[™]

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As a Citizen Developer

1. Learned to develop robust, no-code software applications in a few days
2. Identified the waste in the current Production Centre process
3. Understood that the admin, paper-work and interaction with several different systems did not add value
4. Recognised the need to work smarter, to make the admin part of The Work as much as possible
5. Developed an app that made admin a *by-product* of doing The Work
6. Worked closely with his team to implement and refine the app
7. In doing so, reduced lead time from over 5 hours to under 20 minutes.

Mike Moore

- Managing Partner MM&A
- Career-long software developer
 - Though with stints in product design, business management, process engineering, swing dancing, flying small aeroplanes, tech start-ups and project trouble-shooting
- Own business founded in 2006
- Since 2015 pioneering the use of no-code and low-code applications to create Citizen Developers in the workplace



Citizen Developers and no-code

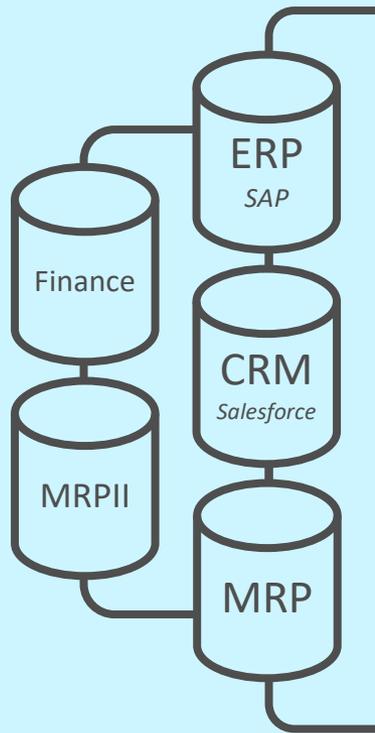
- Discovered no-code platforms in 2014 while looking for a ‘low-cost, on-line database’ to replace a system built on Excel for a client
- The client was using Excel as a database to log machine breakdowns and manage the repair and maintenance process
- There was much waste: admin associated with the process took longer than the work; the admin fell by the wayside and the process became all but invisible
- I devised an application which would run on the technicians’ smart phones – it took a day to design and build
- The process became visible, transparent and manageable
- Within weeks the routine maintenance programme had been re-designed and breakdowns and line-stops reduced by 85%

WHAT IS A NO-CODE PLATFORM?

And why are we *ditching the spreadsheet?*

Traditional IS ecosystem

Corporate information systems ...



vs. Islands of data

1. A BI tool
2. An estimating tool
3. Financial modelling
4. A scheduling app
5. A pricing tool
6. A meeting notepad
7. A CRM tool
8. A *database*

Data rich, information poor

- Excel is ubiquitous
 - It appears everywhere
- Filling in the gaps left by *changing* business requirements
- Experience has made me suspicious
 - Its presence can be an indicator of underlying inefficiency and waste
- But it's a price worth paying ...

Clues ...

Have I got the latest version

Which tabs are the 'live' ones?

How do I know if these formulae are valid?

Where do I make my changes?

Where did this data come from?

Who do I send it to next?

Is it correct?

Who else has been editing this document?

Why Excel is so popular

- Simple
 - Easy to get up and running, gentle learning curve
- Ubiquitous
 - Everyone has got it already
- Low cost
 - No additional investment once you have a licence – or use a free version
- Self-sufficiency
 - Keeps the project away from the IT department
- Collaboration
 - Easy to share a spreadsheet with colleagues
- Rapid results
 - Start typing and you're off, can have the data on everyone's desk within minutes

But there are downsides

- **Simplicity**
 - Temptation to race ahead without planning
 - Not enough thought given to design
 - No information architecture
 - Results in inconsistent information that can be confusing or misleading
- **Ubiquitous**
 - Every knows how to use it but ...
 - Too easy to make a mistake, e.g. edit wrong cell, over-type formulae
 - Few users know how to secure and protect effectively

But there are downsides

- Self-sufficiency
 - Islands of information form rapidly
 - Users decide policies for themselves
 - Duplicated or over-lapping processes emerge
 - Data is replicated many times
 - Opportunities to rationalise to save waste are missed
 - Opportunities to integrate with existing systems and data sources missed
 - Best practise ignored (especially security and business continuity) due to lack of oversight
 - Spreadsheets are emailed, unsecured, unencrypted

But there are downsides

- Collaborative
 - Emailing a spreadsheet is easy but leads to duplication and confusion
 - Effective version control becomes a challenge
 - Adopting 'master copy on server' strategy difficult to implement for larger organisations or with fast-moving data
- Rapid results
 - Rapid isn't always better
 - Quality assurance steps are invariably missed
 - Testing of formulae, macros and pivot tables is inadequate
 - Rushing to deliver results – but are the results correct?

When the only tool you have is a hammer ...

... everything starts to look like a nail



The problem is not Excel *per se*

- Excel is reliable and robust
- Probably more functionality per \$ than any other app in history
- It's how it's used; non-expert users create *fragile* solutions
- **What's the alternative?**

Code-free, cloud-based, app builders

- New generation of tools designed to replace spreadsheets in the gaps between corporate information systems

- Cloud-based
- Robust
- Easy-to-use
- Multi-user
- Secure
- Low-cost
- No infrastructure requirement
- Multi-platform
- Rapid deployment

knack*

device
magic

FastField
mobile forms

intuit
QuickBase

zapier*

kintone

appenate

caspio

WUFOO

Integromat
Automate your workflow

APIFY

mx mendix

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Origin story

“What if we could build a web application that could build web applications?”

knack*

Low Code App? Why and when?

- A need to collect, format and present data to support a process
- Reluctance to initiate a formal IT project
- Time is of the essence
- Uncertainty around precise requirements
- Need for flexibility and speed of use to facilitate prototyping
- Getting up and running *now* more important than getting it *perfect*
- Budget constrained
- Where you would traditionally consider **Excel®** or **MS Access®**

Low-Code solutions prove to be

More flexible*

More cost-effective*

Less prone to error*

Simpler to build*

Easier and quicker to deploy*

More secure*

Better interoperability*

No-Code can create entire systems

Group Name: Sales Briefing App
Sequence: 01
Estimating Strategy: PERT (selected), Bidding Poker

Update details

Showing 1-6 of 6 items

Story / Work Package / Task	Overview	Priority	Best Estimate	3 Point Estimate	o	Resource
Scoping		☆☆☆☆☆	5	5.50	1.17	Mike H
Project Management	Ongoing through lifecycle of this component	☆☆☆☆☆	10	12.50	4.17	Den R
Design		☆☆☆☆☆	10	10.00	1.67	Mike H
Build		☆☆☆☆☆	34	45.33	17.00	Jamie J
Testing		☆☆☆☆☆	20	20.00	3.33	Mike H
Deploy & hand-holding		☆☆☆☆☆	5	5.50	1.17	Den R
Sum			0	84	98.83	28.50

Story / Work Package / Task title: Overview

Priority: ☆☆☆☆☆

Resource: Select

Optimistic Estimate: 0
Most Likely Estimate: 0
Pessimistic Estimate: 0

Submit

Back to Edit project

Corporate CRM enhancement created 06/01/2017
App to collect details from sales adviser briefings interface to our CRM solution.

Owner	No Groups	No Stories
Fred Fredburger	3	12
Best Estimate	3 Point Estimate	o
103	118.08	32.35
Best Estimate Value	3 Point Estimate Value	Active
\$79,700.00	\$81,331.0	Yes

There is a 68% chance that this project requires between 89.33 and 151.03 days effort.
There is a 68% chance that this project requires funding between \$59,328 and \$193,336

Story Ref

- Testing
- Scoping
- Project Management
- Design
- Deploy & hand-holding
- Build

Group	Best Estimate
01 Sales Briefing App	76.12
02 Web services interface to Salesforce	9.34
03 Enhancement to the BI solution	4.67
04 Sales Briefing App / Design & hand-holding	13.68
05 Enhancement to the BI solution	10.61

Estimates Planning Resources

Corporate CRM enhancement created 06/01/2017

ALL Resourced Unresourced No Estimate

January 2017

Resource Name	Planning Colour
Jamie J	Orange
Mike H	Purple
Ben R	Turquoise

Back to Planning

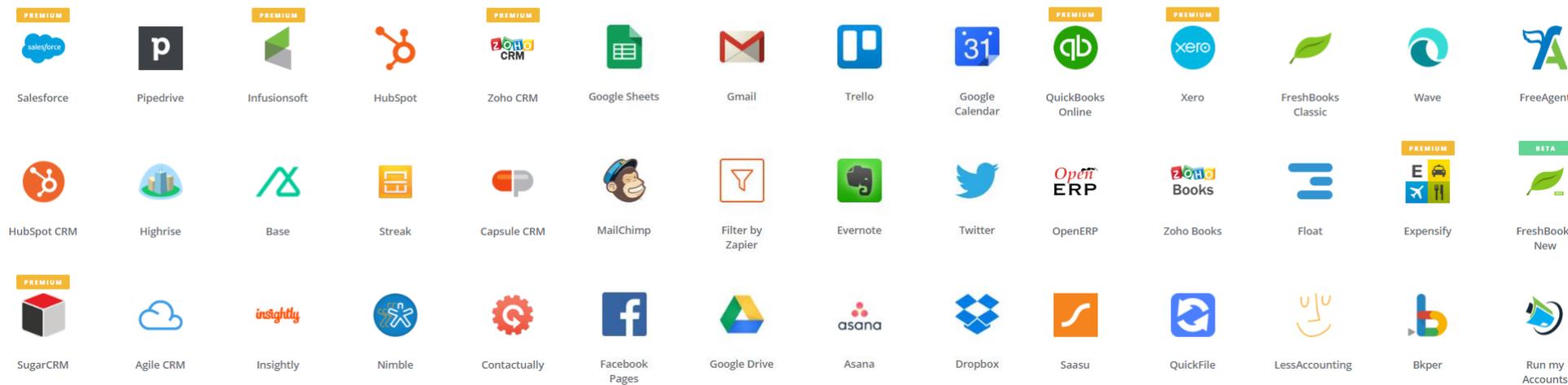


Low-code apps

- Look and perform like a fully functional on-line applications
- Can be deployed on mobile platforms such as smartphones and tablets as well as desktop computers
- Offer full transactional auditability, referential integrity and data validation
- Provide data entry, look-up tables, visualisation of data, intuitive interface
- Can be embedded seamlessly into a conventional websites or intranets
- Ironically, can both import from Excel and export to Excel!
- Scalable from 1 – 1000s of users
- No infrastructure cost (capital or cost of ownership)
- Secure and robust

What about interoperability?

- The new wave of cloud-based applications contains many innovative tools to enable integration between systems
- **ZAPIER** provides seamless integration between hundreds of disparate applications ...



Integration ideas using Zapier

- Zapier has a tightly embedded interface to commonly used LEAN tools such as Trello, Smartsheet and Leankit
- Making integration between these apps and Knack* straightforward
- For example, we can capture data as it is being created in Knack and push it to Trello – and Vice Versa
 - Production Work Order status updates
 - Physical Product Movements
 - Inventory location and status
 - Vehicles in a workshop



smartsheet

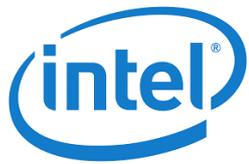
What about my legacy systems?

- Data in ERP and MRP systems has traditionally been difficult to integrate with in real time
- Now tools like Apify and UiPath mean we can use low-code products to pull data from these systems and push it into our applications with ease
- For example, we can capture data from old 'mainframe style' or 'green screen' systems and make it available without any manual work or re-keying
 - Reduces errors associated with transcription
 - Faster and more reliable than cutting and pasting
 - Helps to deliver integrated and sustainable apps, not 'islands of automation' that fall by the wayside



Who is using this technology?

Knack*'s customers include:



HONDA



HARVARD
UNIVERSITY



Panasonic



CAMBRIDGE
UNIVERSITY PRESS



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Frictionless data and the 'citizen developer'

- Teams given creative freedom experience a productivity increase
- Empowerment improves morale and sense of ownership
- Liberated from the strength-sapping delays often inherent with IT
- Yet creating real *industrial-strength* applications rather than 'make do' solutions
- Result is better apps, adding value and reducing cost
- Reducing customer dissatisfaction and minimising waste
- A toolkit for managers, equipping them to create, refine and support new processes in the business ... and *continually improve* them

THE PSA CASE STUDY

Mike Moore & David Male



THE HALFWAY CASE STUDY

Morné Fourie



HERE'S
ONE I
CREATED
EARLIER



From Tuesday's MASTERCLASS

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Example integration using Zapier

- Zapier has a tightly embedded interface to commonly used LEAN tools such as Trello
- Making integration between these apps and Knack* straightforward
- For example, we can capture data as it is being created in Knack and push it to Trello – and Vice Versa
 - An HR process tracking example
 - I have made this very simple to illustrate the technology



What does it all mean for me

- I can use my understanding of the work to build *real applications* to support my team
 - Previously I relied on tools like Excel that were not fit for purpose
- I am liberated from the inevitable delays associated with I.T.
 - Previously I waited weeks or months for features and fixes
- I can involve my team in kaizen for the app, and they see the results instantly
 - Previously they felt that they couldn't influence how IT systems operated
- As new ideas emerge from my team I can try them out straight away
 - Previously I couldn't find an easy way to experiment if it involved corporate applications

What does it all mean for me

- Cost need no longer be a barrier to kaizen of my admin
 - Previously I had to make a Capital Expenditure request to get things done with my IT systems
- I can connect my app to useful data available in the cloud
 - Previously my Excel app had to be updated from downloaded CSV files
- I can think about connecting to internal systems like ERP, MRP
 - Previously data from these systems were unavailable unless IT created a 'feed' for me
- The ability to try out new ideas is morale-boosting
 - Previously I found it difficult to harness my creativity

Frictionless data and the 'citizen developer'

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- Empowerment improves morale and sense of ownership
- Liberated from the strength-sapping delays often inherent with IT
- Yet creating real *industrial-strength* applications rather than 'make do' solutions
- Result is better apps, **adding value** and **reducing cost**
- **Reducing customer dissatisfaction** and **minimising waste**
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MIKE MOORE & ASSOCIATES

Thank you for DITCHING THE SPREADSHEET

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