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# We're Software Developers!

# What's Your Super Power?

# The Top 7 Pillars

## for Accelerating Mobile, Web and Windows Software Development

Presented by: Lee Paul
**Surround Technologies**

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# Today's Speaker

## Presented By: Lee Paul

[CEO / Accelerated Software Development Evangelist ]

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# My First Heroic Feat

## A Super App

Microsoft Office Lens

Sometimes Microsoft gets it right!!

Available on iPhone, Android and Windows Phone

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We are

# Software Development & Modernization

# *SUPERHEROS*

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With

The **Right Strategies**

The **Right People**

The **Right Processes**

& The **Right Tools**

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# To Accelerate the Development of Software People Love!

You will

**build powerful applications FAST**

and

**change them even faster!**

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# Solutions for:

## Mobile
## Web
## Windows
## Integration

# DEVELOP

FASTER BETTER MORE

## *SMARTER*

# Reach your
# Software Superhero Status!

Speaking of Super.

**My son thinks I am!!**

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# I showed him an old floppy disk….

He said “Wow… Cool!
You 3D printed the save icon!”

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# TODAY'S SESSION:

# THE TOP 7 PILLARS

## Accelerating Mobile, Web and Windows Software Development

# *4 Tenets of Software*

The ***4 Tenents of Software*** are design principles that denote what it takes to create a great software application.

- Holistic View
- Puts Users into Consideration
- Best Practices
- Maximum Quality and Return

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# The 4 Tenets of Software

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## *The First Tenet is: Useful*

- *It's the foundation of a users satisfaction.*
- *Software should provide some **useful** function*
- *It should perform the function(s) necessary to complete the tasks*
- *It should be superior to any other*
- *The more useful it is the more it will be used*

***Don't Reinvent the Wheel…***

# The 4 Tenets of Software

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## *The Second Tenet is:* ***Usable***

- *More than just Visual. It's how the software works for the user*
- *Users need to be able to gain productivity*
- *Perform tasks with minimal effort*
- *Performs the expected function perfectly*

***Don't Make Me Think…***

# The 4 Tenets of Software

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## *The Third Tenet is: Desirable*

- *Users should choose it over alternative products available to them.*
- *Find it appealing*
- *Helps them, makes life/work better*
- *More likely to dismiss deficiences if the overall experience is acceptable.*
- *“Software that people proclaim they love”*

# The 4 Tenets of Software

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## *The Fourth Tenet is:* ***Feasible***

- Time
- Cost
- Technical skills
- Available  Technology
- All the above must be taken into account and weighed against the return that is gained.
- If the software is not feasible, it should not be created.

# In this Session

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## *Ideas for achieving all 4 Tenets*

Useful

Desirable

Usable

Feasible

# Why are we here today?

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**Truly effective Software Development doesn't happen by chance.**

It's the result of planning and careful adherence to a sound methodology.

Surround has the highest expectation for the software that we develop.

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# Why are we here?

With highly skilled and advanced developers and all that is possible in software today, it, as you can imagine, was a substantial challenge to fully define the expectations for our software.

**Through the process we identified hundreds of attributes that needed to be a part of our blueprints.**

But, ultimately, as we do with everything, we identified patterns in those attributes and created very clear and easy to follow principals categorized into what we now call:

## The 7 Pillars to Accelerated Software Development.

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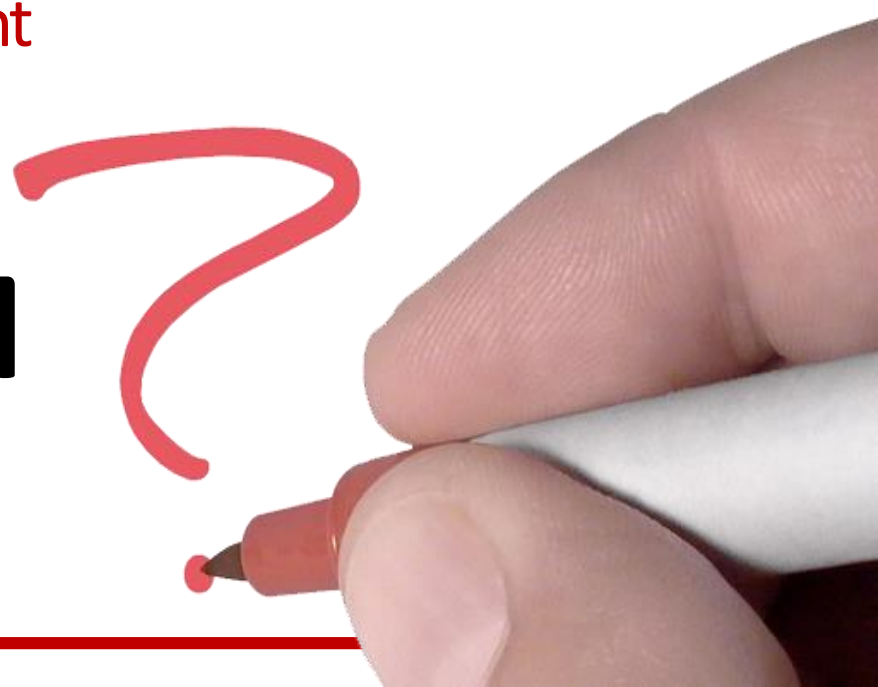
## Accelerating Software Development

# DEFINING THE PROBLEM



# An Ever Increasing Problem

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## In Software Development the Top Complaint is…

***Software can't keep up!***

# Developers are buried

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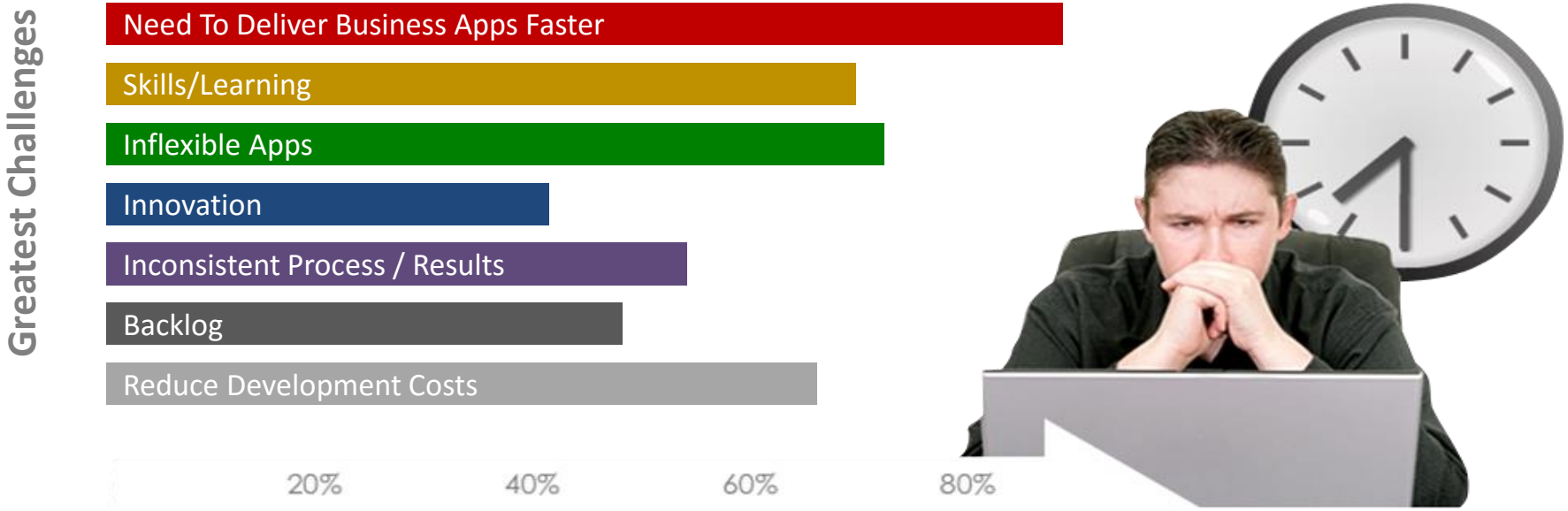
## Software stays in development

When It Should Be Helping Move Your Company Forward



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# Business Software

Business Environments are Evolving and the demand for software to do more is growing.

You need agile software so it adapts to business needs, is productive and most important,

***simple to use.***

# Your development is falling behind!

The Development and Delivery of key software applications isn't keeping pace with business needs.
Many businesses aren't progressing as fast as they could and should.

# It's only getting *HARDER*?

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- *More* Types of Systems
- *More* Integration
- *More* Devices
- *More* Diverse Requirements

- *More* Companies to Work With
- *More* Technologies
- *More* Productive Software
- *More, More, More…*

**All Software Developers** have the same goal when developing:

***To make the best applications possible!***

*...Unfortunately, they rarely have time or budget for that.*

**Can you Relate?**

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# Project Success Factors

- Risks – to project success
- Schedule – deadlines for project success
- Budget – must be based on a justifiable ROI
- Resources – time, money, skills (people), tools, equipment
- Quality – security, usability, robustness, utility, beauty, performance, reliability, …
- Scope – features of the software

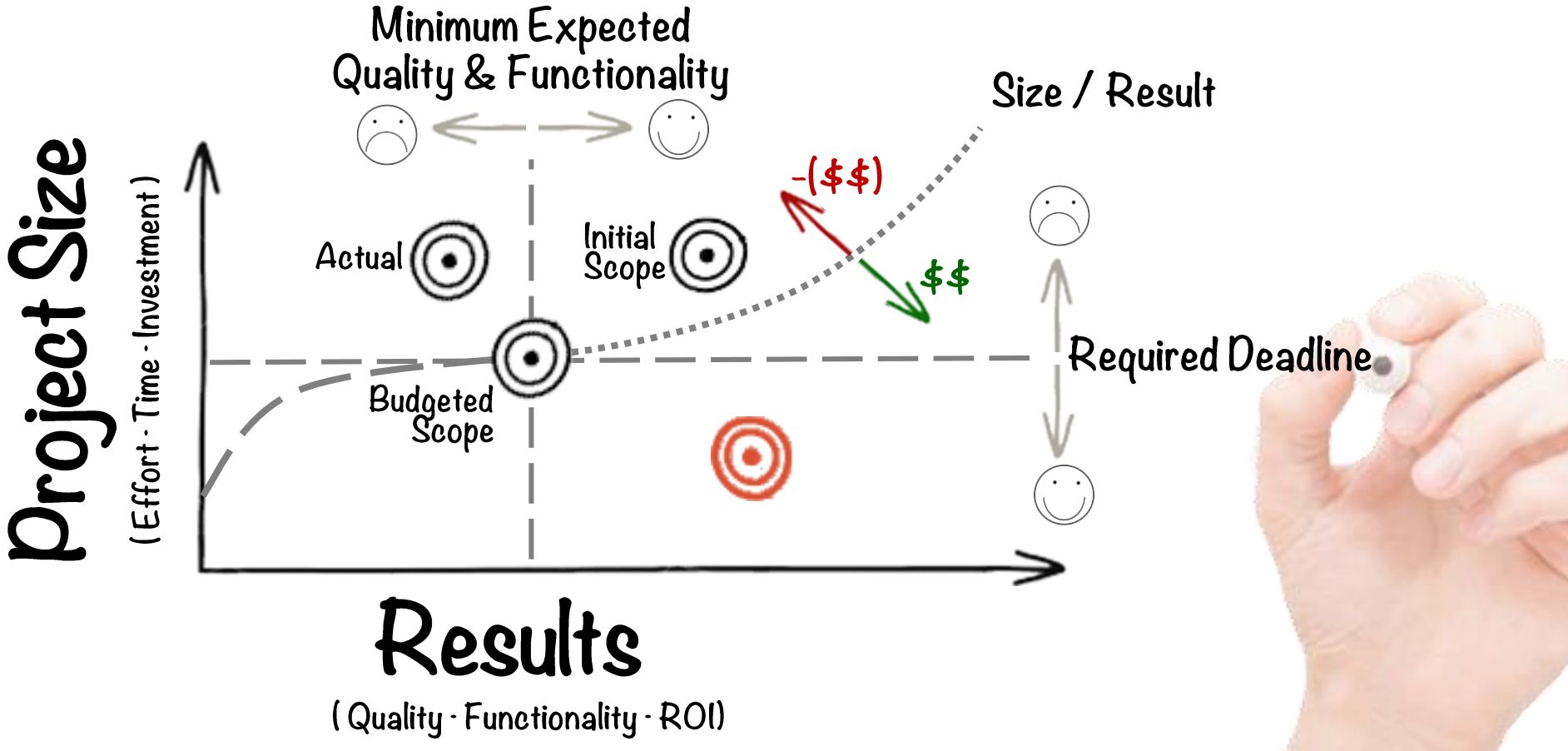
# "Simple Undeniable Truth"

**Project Size and the 6 Factors:** The greatest impact to all of these factors is the project size (effort, time/duration, and investment).

**Simple Undeniable Truth:** the more you can reduce project size, the greater your odds of success.

**Caution:** sacrificing quality and features to force success will have just the opposite effect!

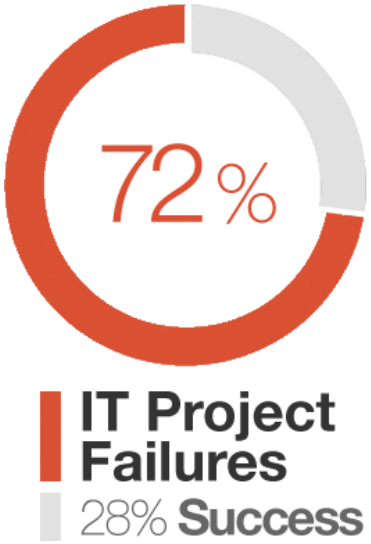
# Simple Undeniable Truth



# The Root of the Problem

Whether purchasing or building your software

- 72% of all major software projects fail. It is the highest percentage of any industry.
- 31% of all software projects are canceled before they are completed. As for the remaining 69%:
- 70% will fail to deliver 25% of expected features
- 53% will exceed budget by 200%
- 21% will exceed budget by > 1,000%
- Only 16% of projects are completed on time and within budget.




The top complaint by executives and users is software can't keep up with the business.

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# PROBLEMS PLAGUING SOFTWARE

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# Software Problems

- Software gets in the way of completing tasks
- Slows down the users workflow.
- Requires more work for users, rather than less.
- Hides system information through convoluted access or navigation.
- Is overly complex and difficult to learn.
- Is overly simplified and inefficient.
- Too easy to make mistakes.
- Is aggravating and frustrating to use.

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# PROBLEMS PLAGUING SOFTWARE DEVELOPMENT

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# Software Development Problems

- Long Software Release Times
- Long Waits for Requested Changes
- Significant Project Backlog and Reduced Delivery Capacity
- Lack of Return and Significant Total Cost of Ownership (TCO)
- Limitations and Proprietary Lock-Ins
- Changes are often High Risk and Disrupts Business
- Software from the dark ages.
- No ability to adapt to changing technology.
- Decreased Productivity and Adoption.
- Lack of Application Monitoring, Management & Control

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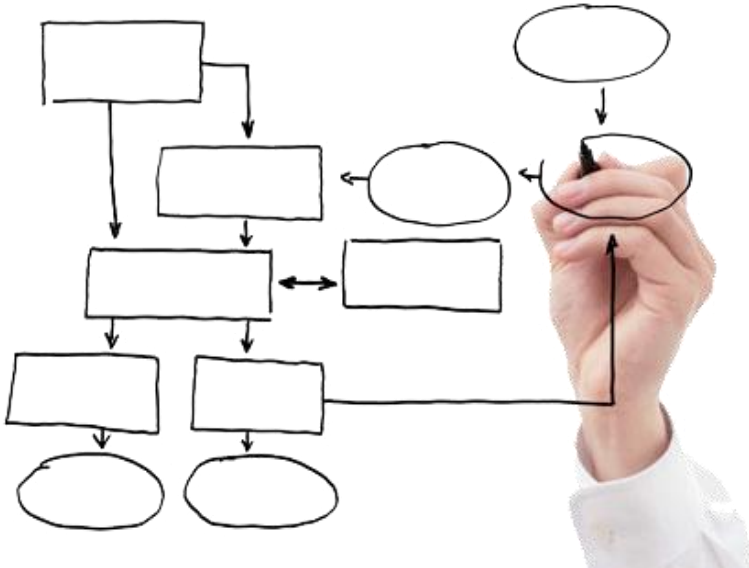
## Accelerating Software Development

# DEFINING THE REQUIREMENT



# 4 Players in the Development Process

- The Business

  They invest in software to meet a business need.

- Users

  Their use of the software provides the return on the investment.

- Developers

  They take the investment and deliver the software

- Providers

  They provide software and tools to decrease the investment, increase the return or both

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# Focus on what's important

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## *Exceed expectations.*

Keep development ***within budget*** and ***on schedule***.

Gain a ***process*** for fast, quality, repeatable and continual development.

Continue to ***improve and adapt*** your process.

# Stay Ahead

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- Deliver new software
- Modernize legacy applications
- Keep up with your business needs
- Stay ahead of the competition

# Develop Smarter

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Produce ***more*** applications

Produce them ***better***

Produce them ***faster***

**Develop *smarter.***

# Make an Investment, Measure the Return

- Transform how to envision, develop, and use software to drive ***greater growth and profit***.
- Realize the full value, return, and potential from ***software investments***.

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## Accelerating Software Development

# ADOPTING A STRATEGY

# *Top 7 Pillars:*
## *For Accelerating Windows, Web & Mobile Development*

1. Productive User Experience
2. Process, Methodology & Standards
3. Software Design & Architecture
4. Developer Efficiency
5. Application Interoperability
6. Modular Software Snap-Ins
7. Leverage Existing Software Assets

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# 7 Pillars for Accelerating Software Development

## 1. Productive User Experience

*A great application helps users succeed in the easiest and fastest way possible.*

# A Usable Product

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- Is easy to learn
- Hard to forget
- Minimizes burden
- Reduces workload
- Anticipates and forgives mistakes
- Does what the user wants, when the user wants it
- Always provides feedback
- Is satisfying and perhaps fun to use.
- Supports users at all skill levels and motivates them to advance

# With a Usable product, User can …

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- Find what they need
- Discover what else is there
- Use the software to its fullest
- Make quick and accurate decisions
- Do it without help from others
- See their progress and success
- Leave feeling their time was well spent

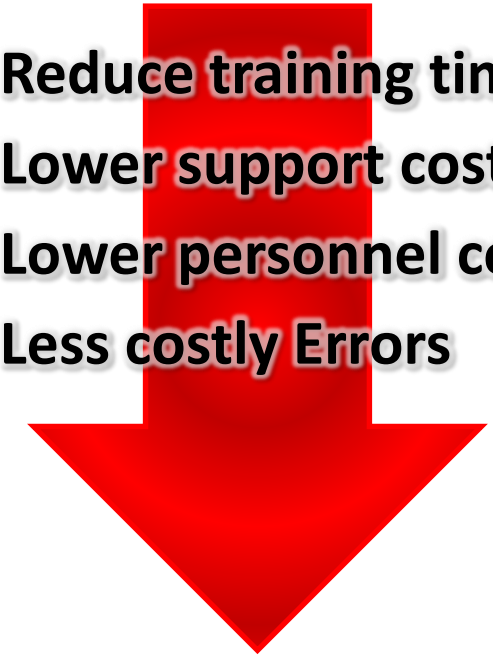
# User Experience is the ROI

***Business software development is always about the ROI*** and nowhere can this be better achieved than in lasting, daily end-user productivity.

# Productive UX Yields Daily Higher ROI

Software that is easy, intuitive and productive to use will

- Accelerate adoption
- Increase production
- Better service
- Improve customer satisfaction
- Boost Revenue



- Reduce training time
- Lower support costs
- Lower personnel costs
- Less costly Errors

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# Productive User Experience

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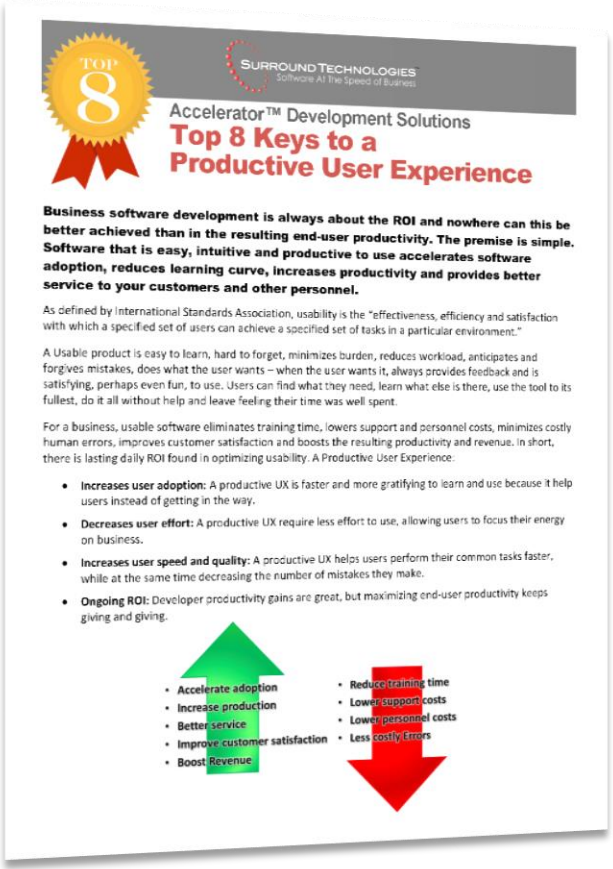

TOP 8

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Software At The Speed of Business

Accelerator™ Development Solutions

## Top 8 Keys to a Productive User Experience

**Business software development is always about the ROI and nowhere can this be better achieved than in the resulting end-user productivity. The premise is simple. Software that is easy, intuitive and productive to use accelerates software adoption, reduces learning curve, increases productivity and provides better service to your customers and other personnel.**

As defined by International Standards Association, usability is the "effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment."

A Usable product is easy to learn, hard to forget, minimizes burden, reduces workload, anticipates and forgives mistakes, does what the user wants – when the user wants it, always provides feedback and is satisfying, perhaps even fun, to use. Users can find what they need, learn what else is there, use the tool to its fullest, do it all without help and leave feeling their time was well spent.

For a business, usable software eliminates training time, lowers support and personnel costs, minimizes costly human errors, improves customer satisfaction and boosts the resulting productivity and revenue. In short, there is lasting daily ROI found in optimizing usability. A Productive User Experience:

- **Increases user adoption:** A productive UX is faster and more gratifying to learn and use because it help users instead of getting in the way.
- **Decreases user effort:** A productive UX require less effort to use, allowing users to focus their energy on business.
- **Increases user speed and quality:** A productive UX helps users perform their common tasks faster, while at the same time decreasing the number of mistakes they make.
- **Ongoing ROI:** Developer productivity gains are great, but maximizing end-user productivity keeps giving and giving.



1. **Learnability**
   Learn the business, use the software
2. **Memorability**
   Turn even complex business processes into easy ones
3. **Findability**
   Find what you need fast
4. **Discoverability**
   Get anywhere from anywhere
5. **Efficiency**
   Ready. Set. GO!
6. **Accuracy**
   Errors cost time and money.
7. **Multi-tasking**
   Do more. Waste less.
8. **Subjective End-User Satisfaction**
   A happy user is a happy business, and a happy business is a happy developer.

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# Demonstration

## Mobile, Web and Windows

# 7 Pillars for Accelerating Software Development

## 2. Process, Methodology & Standards

*Proven practices work. Use them.*

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# Pillar 2: Process, Methodology & Standards

## Define, Establish and Follow:

- **A Software Development Process** from concept to deployment to long term maintenance and enhancement
- **Software Development Standards** based on proven best practices.
- **Structured Development Methodologies** that optimize developer efficiency and focuses it on business functionality

**Create guidelines to developing software responsibly and effectively** with short- and long-term considerations for both the user and other developers that play significantly to the return on investment and ongoing total cost of ownership.

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# Example Development Process

- Analyze, Plan and Estimate
- Generation (Development Automation)
- Enrich, Extend and Integrate
- Plug in reusable and legacy functionality
- Test
- Deploy
- Monitor, Maintain, and Enhance
- Repeat

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# 7 Pillars for Accelerating Software Development

## 3. Software Design & Architecture

*Spend less time on set-up.*

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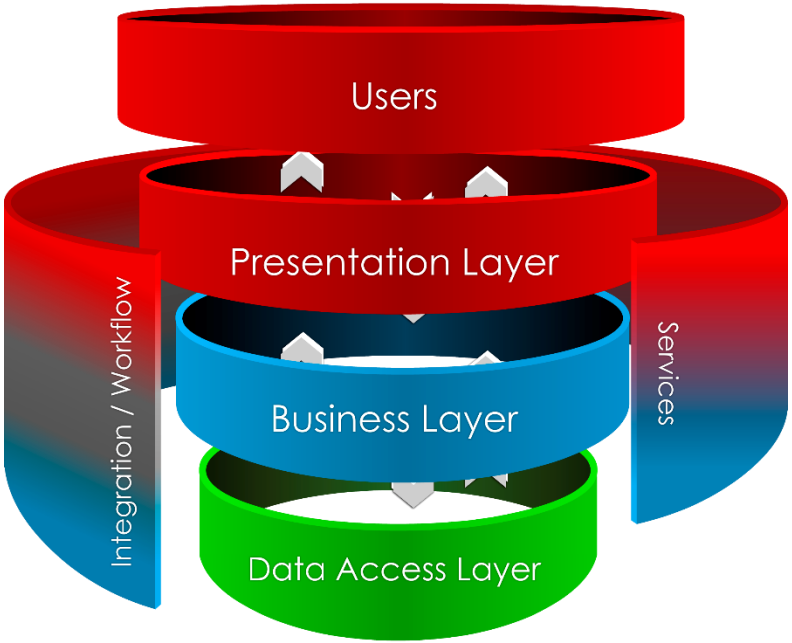
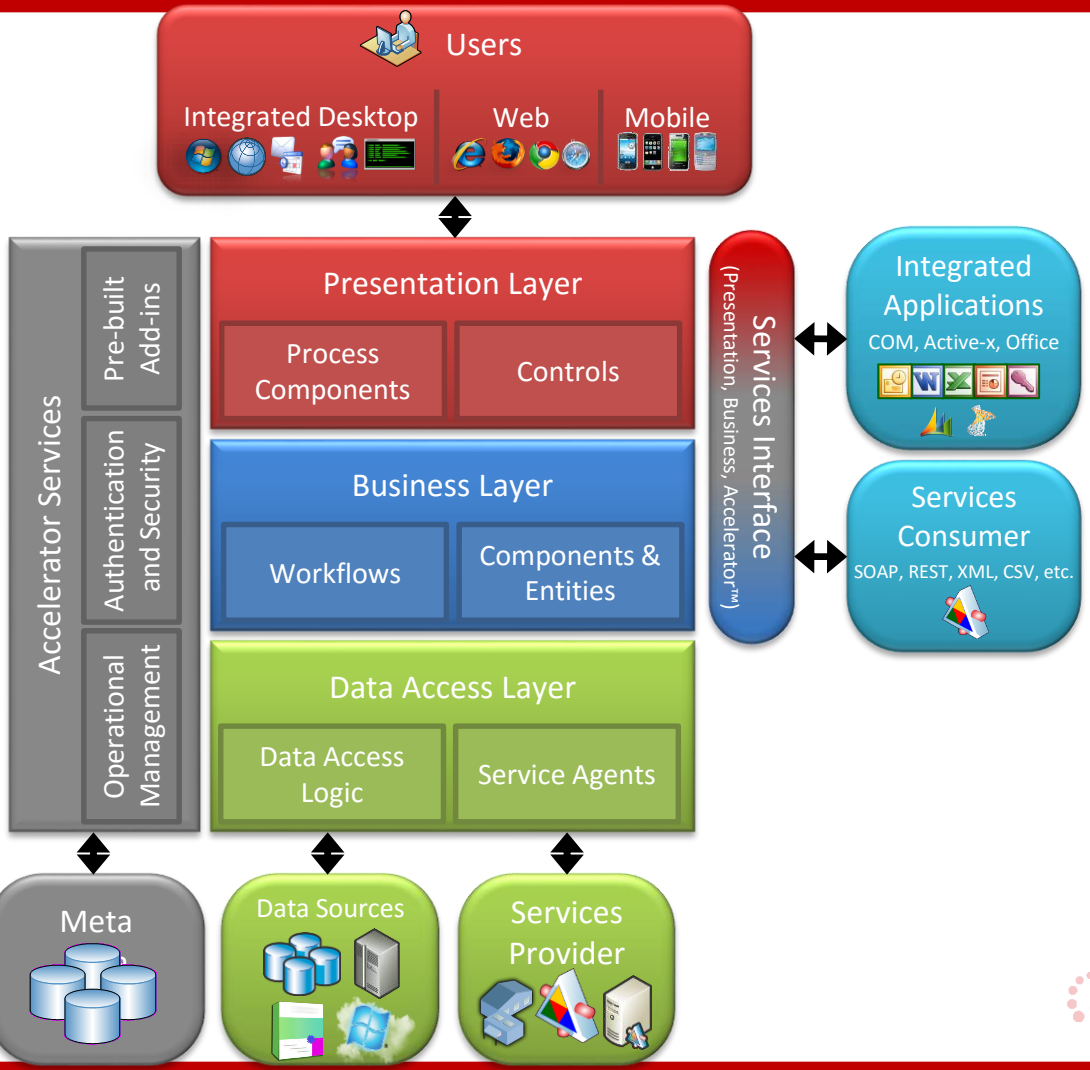
# Pillar 3: Software Design & Architecture




**Creating a well-defined agile software design and architecture will enable developers to spend more time on innovative business functionality** and less time on the underlying technology. It will enable the business to adapt quickly to changing technology shifts with lasting software and low total cost of ownership.

# n-Tier Architecture

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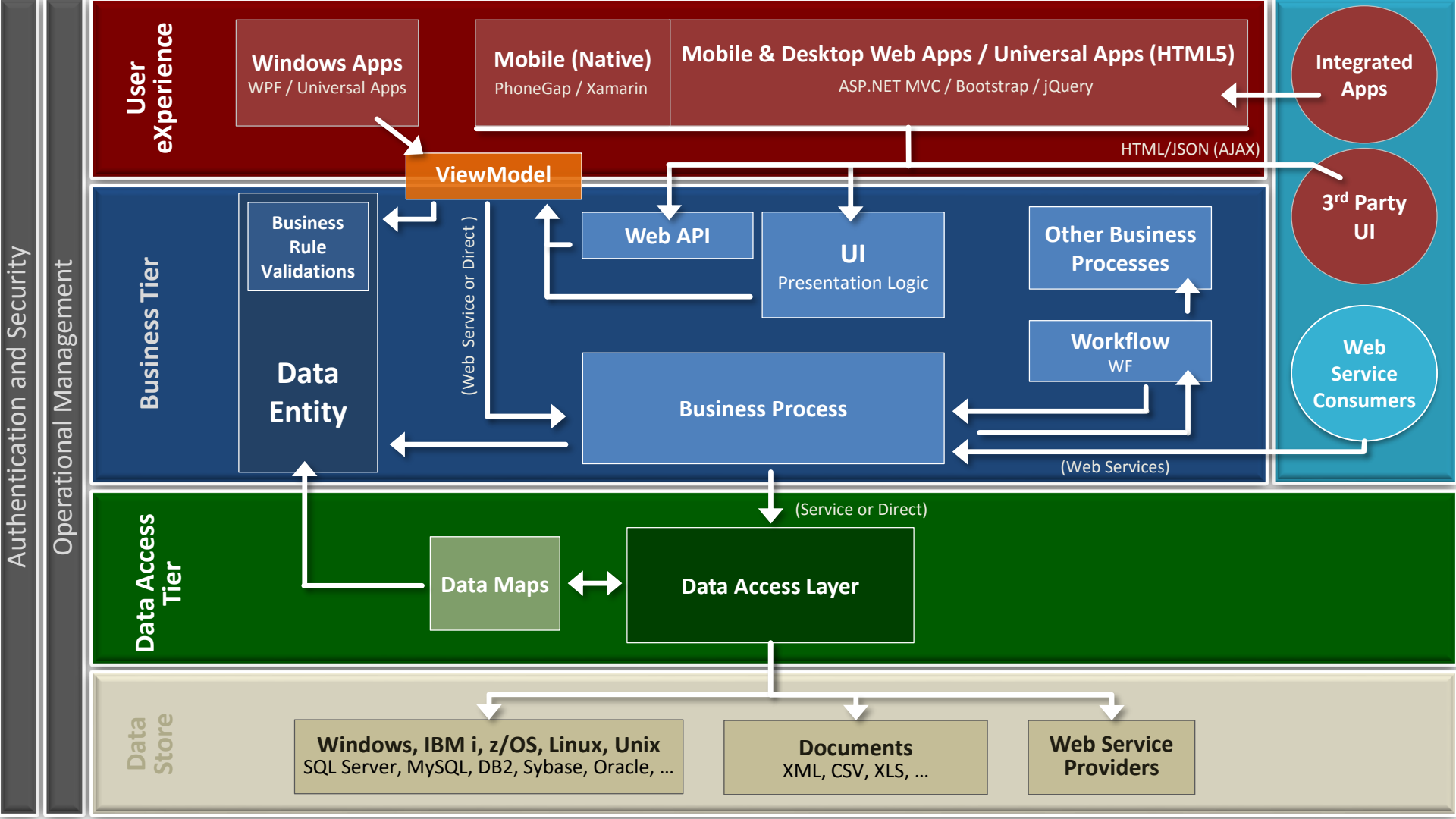
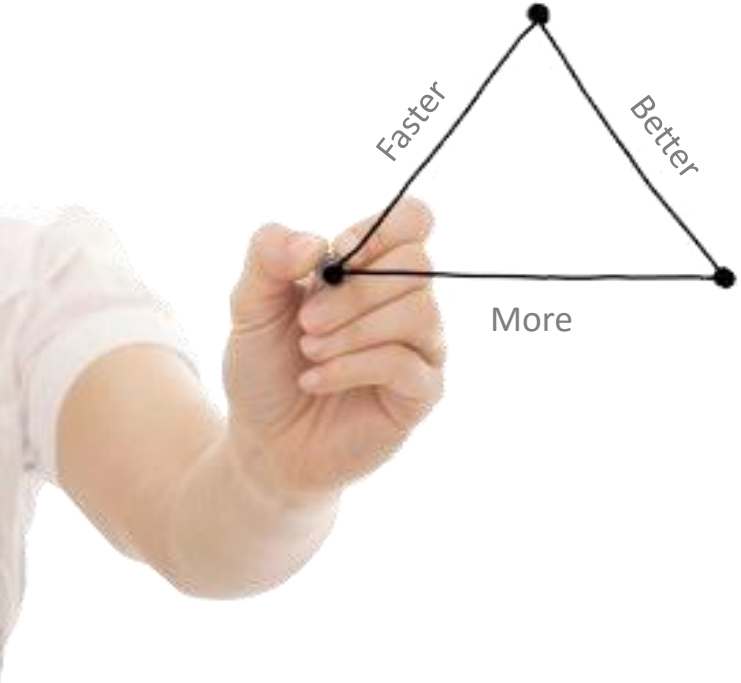

Authentication and Security
Operational Management
User eXperience
Windows Apps
WPF / Universal Apps
Mobile (Native)
PhoneGap / Xamarin
Mobile & Desktop Web Apps / Universal Apps (HTML5)
ASP.NET MVC / Bootstrap / jQuery
Integrated Apps
HTML/JSON (AJAX)
ViewModel
3rd Party UI
Business Tier
Business Rule Validations
Data Entity
(Web Service or Direct)
Web API
UI
Presentation Logic
Other Business Processes
Workflow
WF
Business Process
Web Service Consumers
(Web Services)
(Service or Direct)
Data Access Tier
Data Maps
Data Access Layer
Data Store
Windows, IBM i, z/OS, Linux, Unix
SQL Server, MySQL, DB2, Sybase, Oracle, ...
Documents
XML, CSV, XLS, ...
Web Service Providers

# 7 Pillars for Accelerating Software Development




## 4. Developer Efficiency

*Enable the developer to efficiently and effectively deliver that User eXperience, using the defined process, standards and methodologies and with the correct software design and architecture*

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# Pillar 4: Developer Efficiency

**Making developers as efficient and effective as possible is essential.**

It allows software to be developed faster and at lower cost, makes more applications viable, and delivers greater impact on the overall business.

Utilize tools to shift the time typically spent on hand-tooled plumbing of code and maintenance to new business specific innovative software development.

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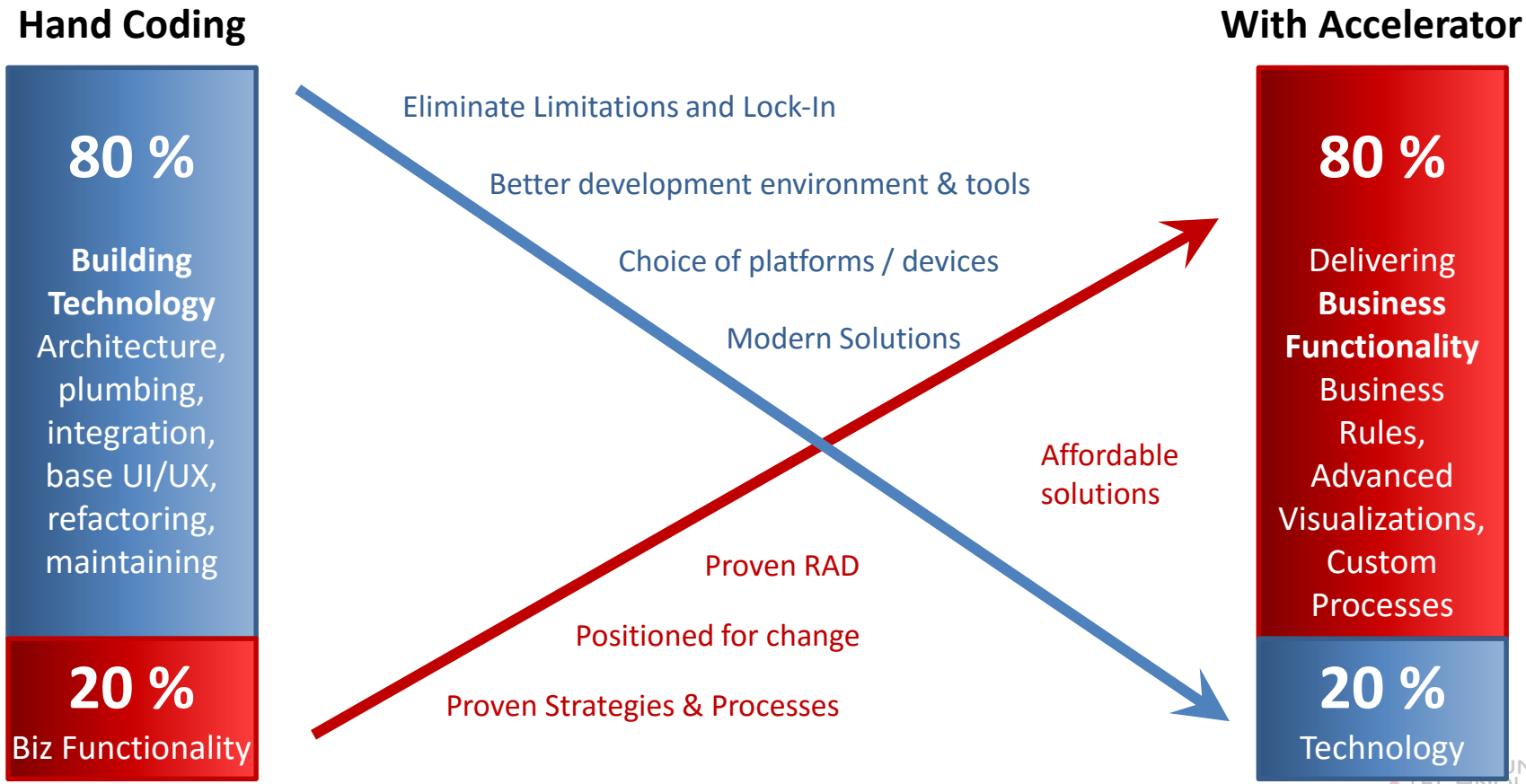
# Flipping the Development 80/20

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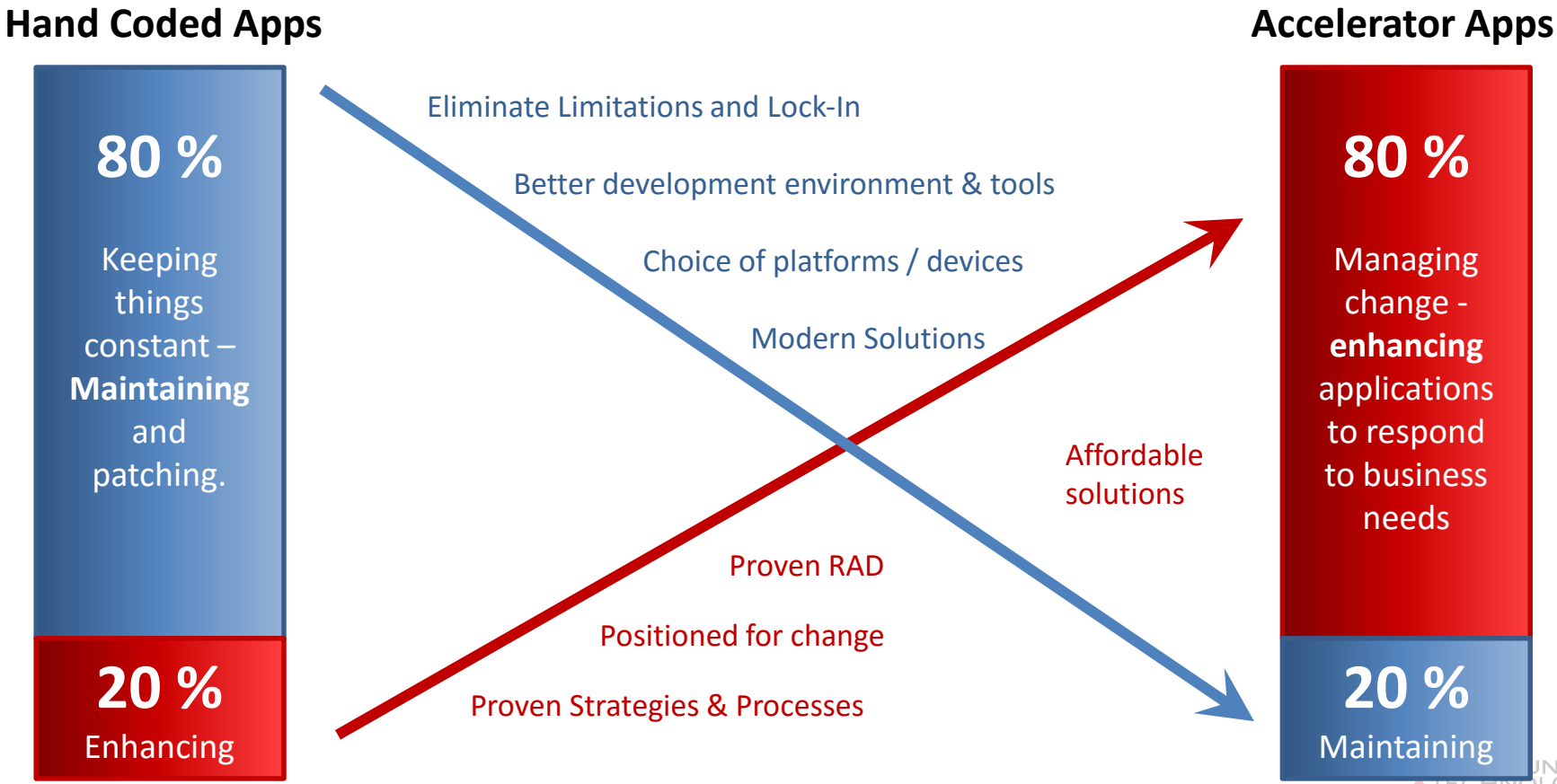
# Flipping the Maintenance Drag 80/20

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# Automation

- Measure the effort of your manual software development processes.
- Automate as much of it as possible (it's very freeing!)
- Reuse, reuse, reuse
- Software Generation
- Will help maintain standards
- Cleaner, consistent more maintainable code
- Huge time and cost reductions

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# Demonstration

## System Generation

# 7 Pillars for Accelerating Software Development

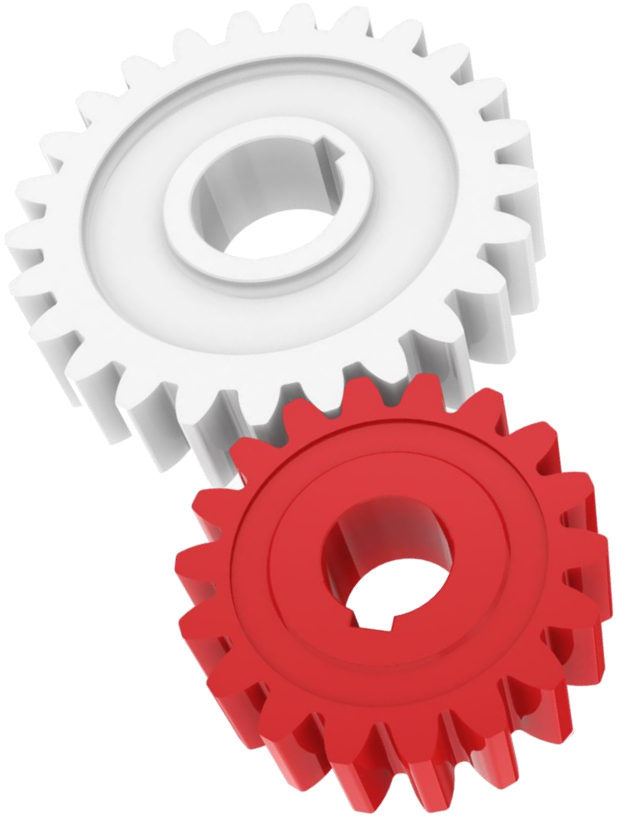
**Primary**

- Productive User Experience
- Standards & Methodologies
- Software Design and Architecture
- Developer Efficiency

**Extended**

- Application Interoperability
- Reusable Modular Snap-ins
- Leverage Existing Software Assets

# 7 Pillars for Accelerating Software Development



## 5. Application Interoperability

*You must be able to adapt to changing needs in order to survive.*

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# Pillar 5: Application Interoperability

Complications such as competitive pressures, partner demands, strategic initiatives, mergers and acquisitions, and more arise and add levels of complexity and technologies to a growing array of disparate systems.

***Today's software must be open and agile enough to pull them all together.***

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# 7 Pillars for Accelerating Software Development

## 6. Modular Software Snap-ins

*Don't reinvent the wheel over and over.*

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# Pillar 6: Module Software Snap-ins

**Another of our mantras is *"Reuse, Reuse, Reuse"*.**
That should apply from the smallest control to entire applications.

This is where Architecture is key once again. A modular architecture plays such an important role for allowing developers to easily snap in and integrate other software.

# 7 Pillars for Accelerating Software Development

## 7. Leverage Existing Software Assets

*Application integration that combines every system you have into one seamless user experience.*

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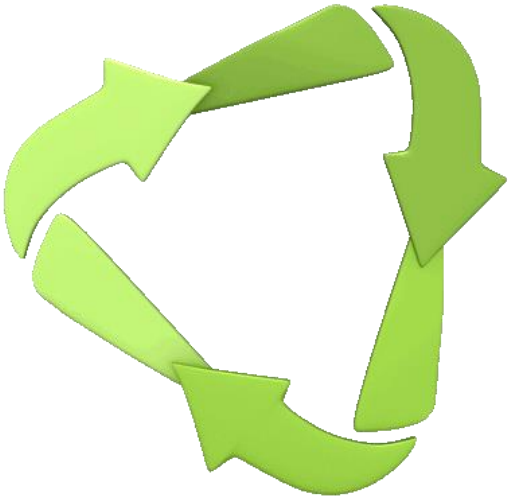
# Pillar 7:  Leverage Existing Software Assets



Reengineering existing software can be incredibly difficult and wasteful. *Don't rebuild it unless it is cost effective or business demands that you must.*

However, you can breathe new life into the aging assets and repurpose the technology into newer applications.

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## Creating Software Your Users Will Love

# PUTTING IT TO PRACTICE

# RAD x 3

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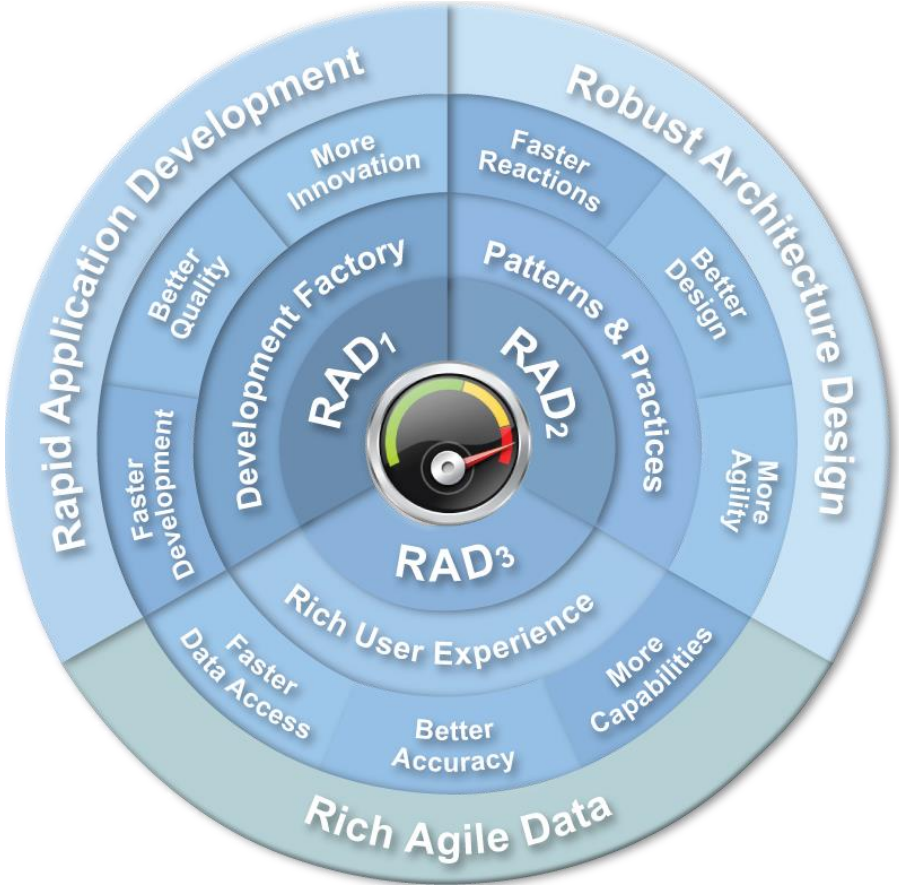


The Complete Approach to the Application Development Lifecycle

# Accelerator RAD$_1$ - Rapid App Dev

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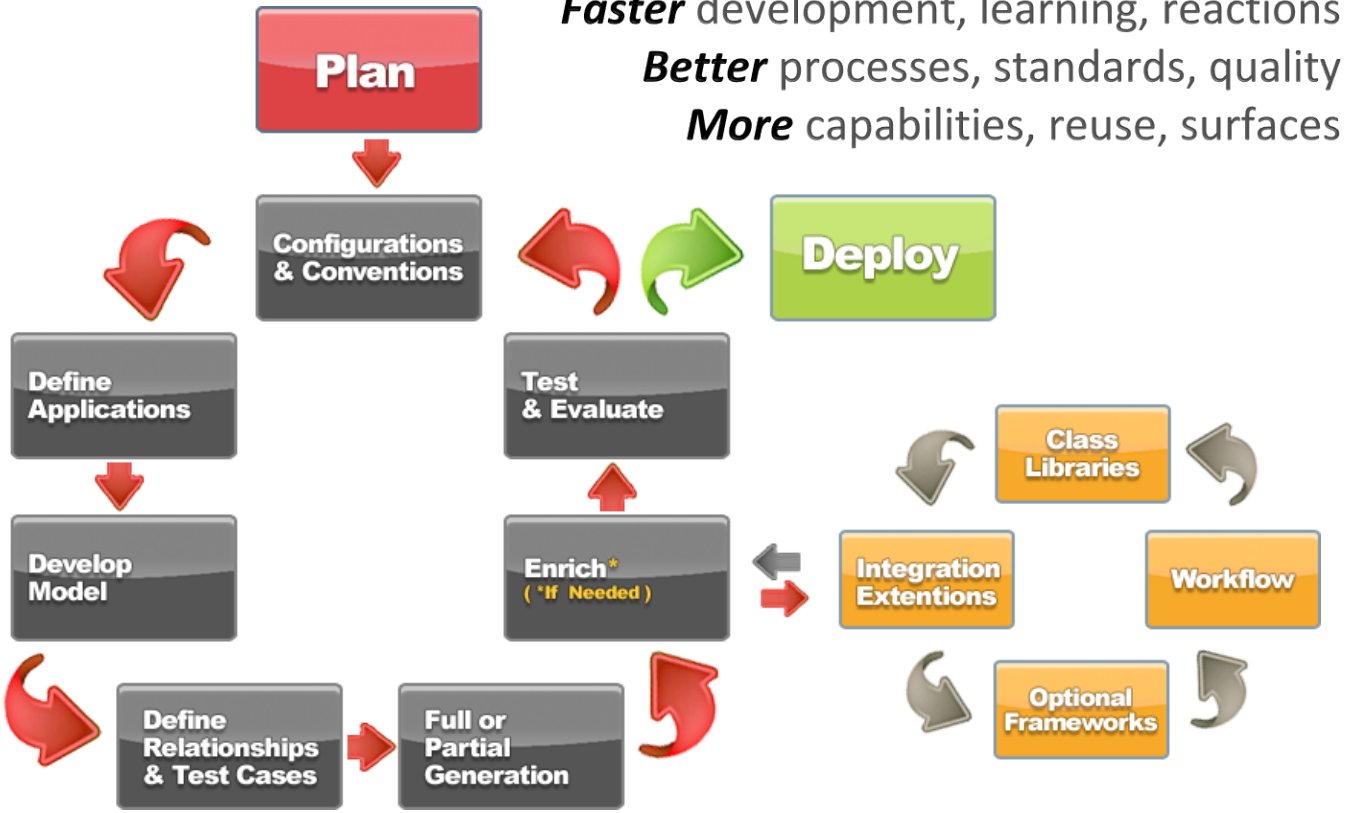
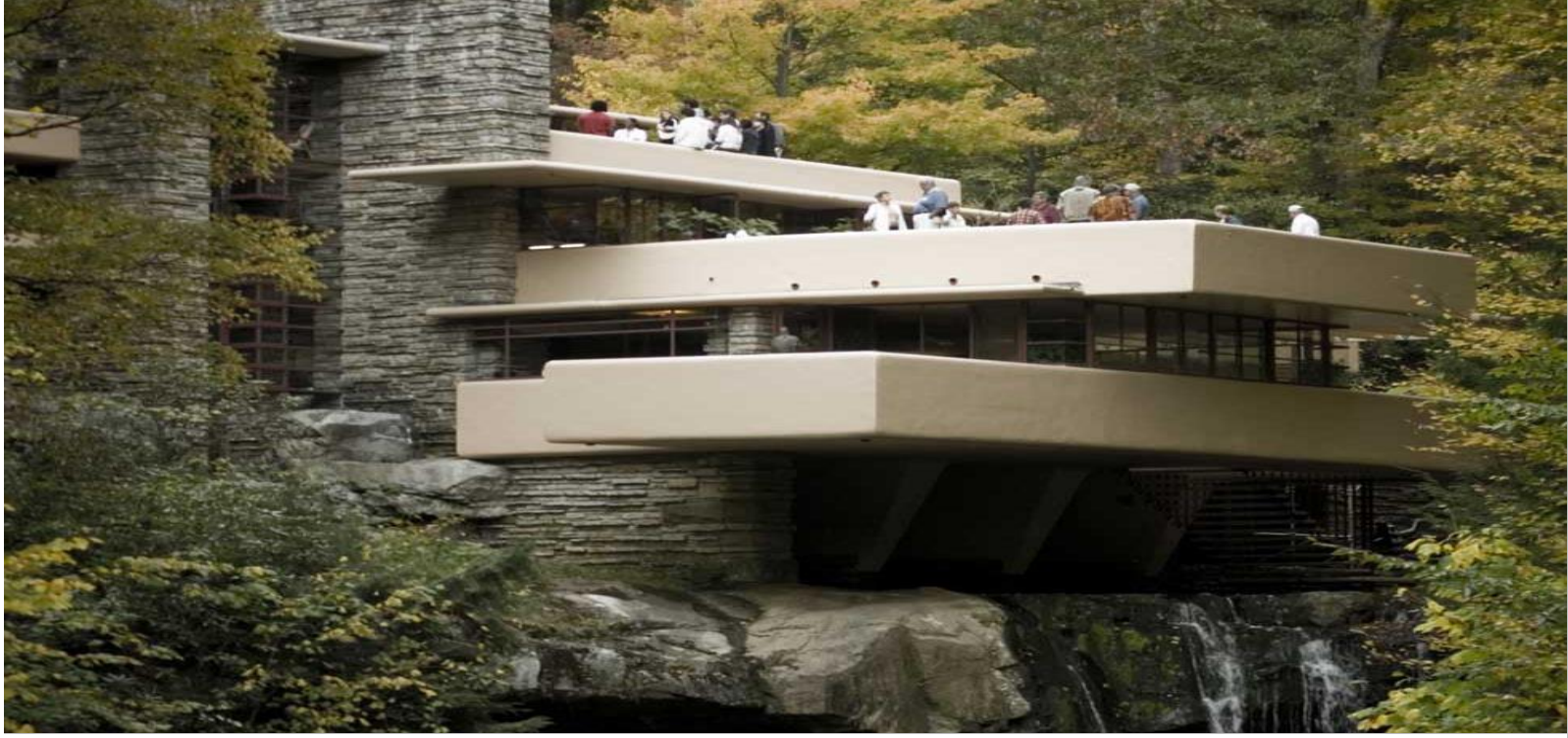
***Faster*** development, learning, reactions
***Better*** processes, standards, quality
***More*** capabilities, reuse, surfaces





# Architecture

**Build to Last ● Built for Change ● Built for Business, Developers and Users**

**Software lifetime measured in decades**

# Accelerator RAD$_3$ - Robust Arch. Design

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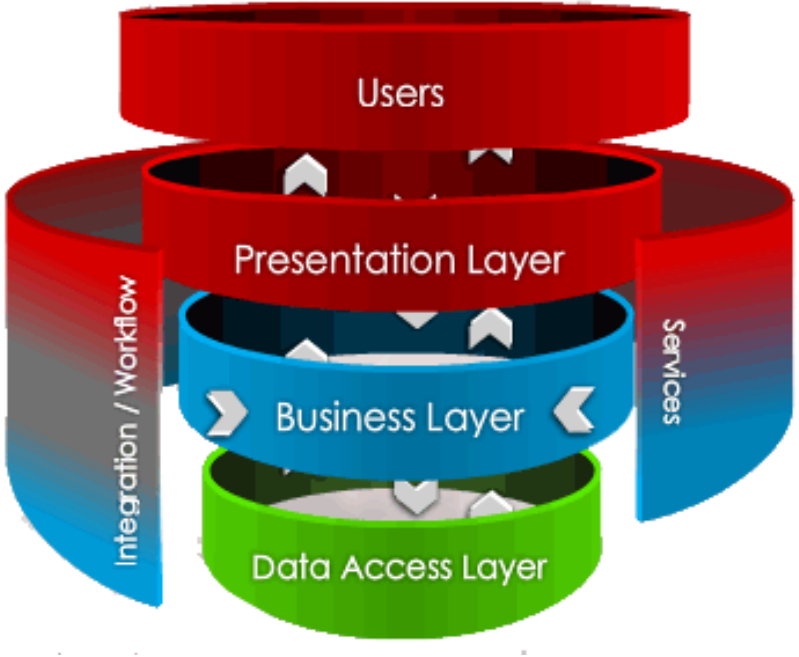
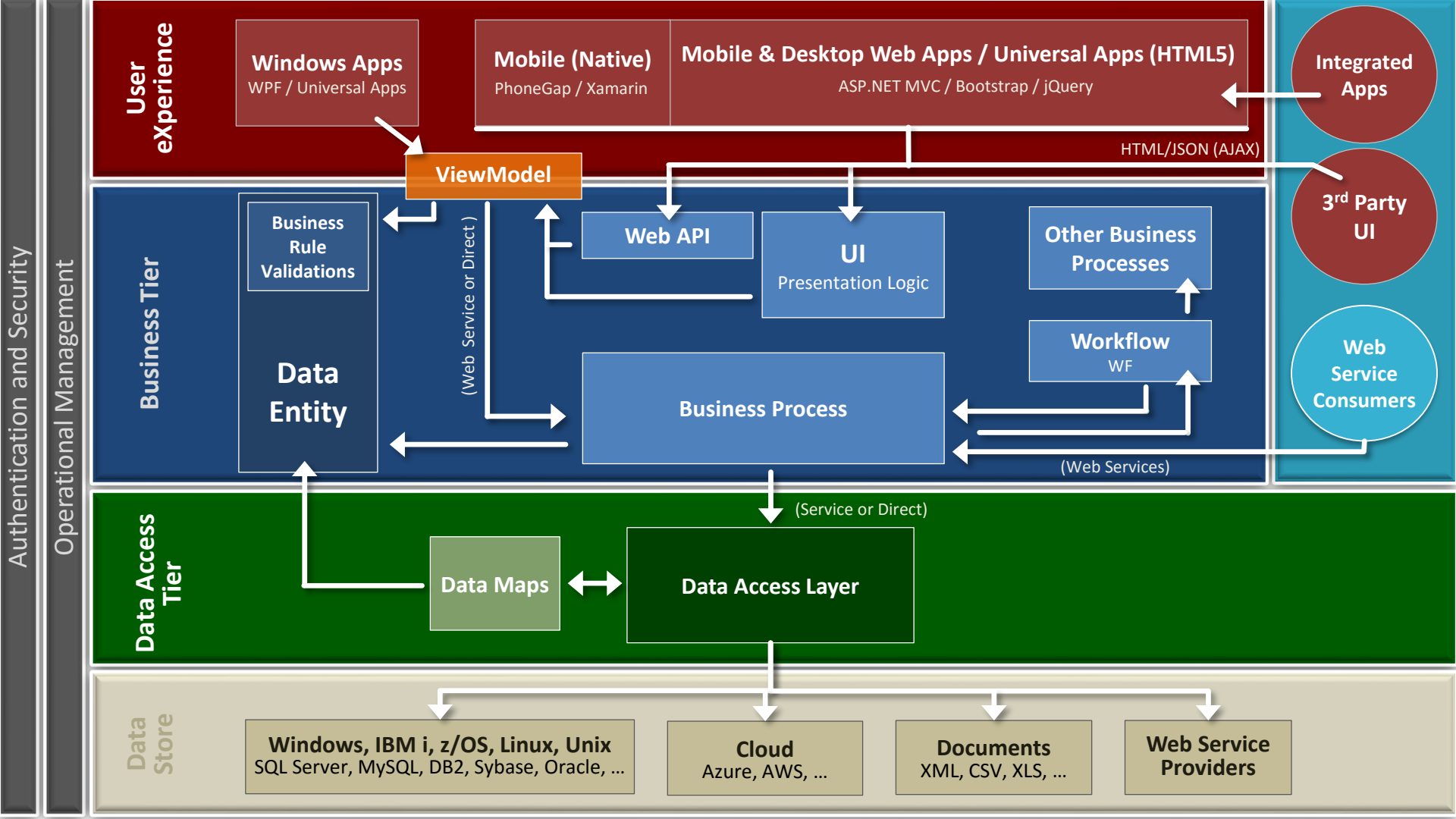
## Architecture

The Great Enabler of the Agile Enterprise




Authentication and Security
Operational Management
User eXperience
Windows Apps
WPF / Universal Apps
Mobile (Native)
PhoneGap / Xamarin
Mobile & Desktop Web Apps / Universal Apps (HTML5)
ASP.NET MVC / Bootstrap / jQuery
Integrated Apps
HTML/JSON (AJAX)
ViewModel
3rd Party UI
Business Tier
Business Rule Validations
Data Entity
(Web Service or Direct)
Web API
UI
Presentation Logic
Other Business Processes
Workflow
WF
Business Process
Web Service Consumers
(Web Services)
(Service or Direct)
Data Access Tier
Data Maps
Data Access Layer
Data Store
Windows, IBM i, z/OS, Linux, Unix
SQL Server, MySQL, DB2, Sybase, Oracle, ...
Cloud
Azure, AWS, ...
Documents
XML, CSV, XLS, ...
Web Service Providers

# Accelerator RAD$_3$ - Rich Agile Data

## Out of the Box Features:

- **Robust User Experience** (User Customizable)
- **Cross Platform UI** (Desktop, Browser & Mobile)
- **Search & Filtration capabilities**
- **Microsoft Office integration**
- **Maximized efficiency in *Time to Task***

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Out-of-the box

Enriched

Additional Patterns

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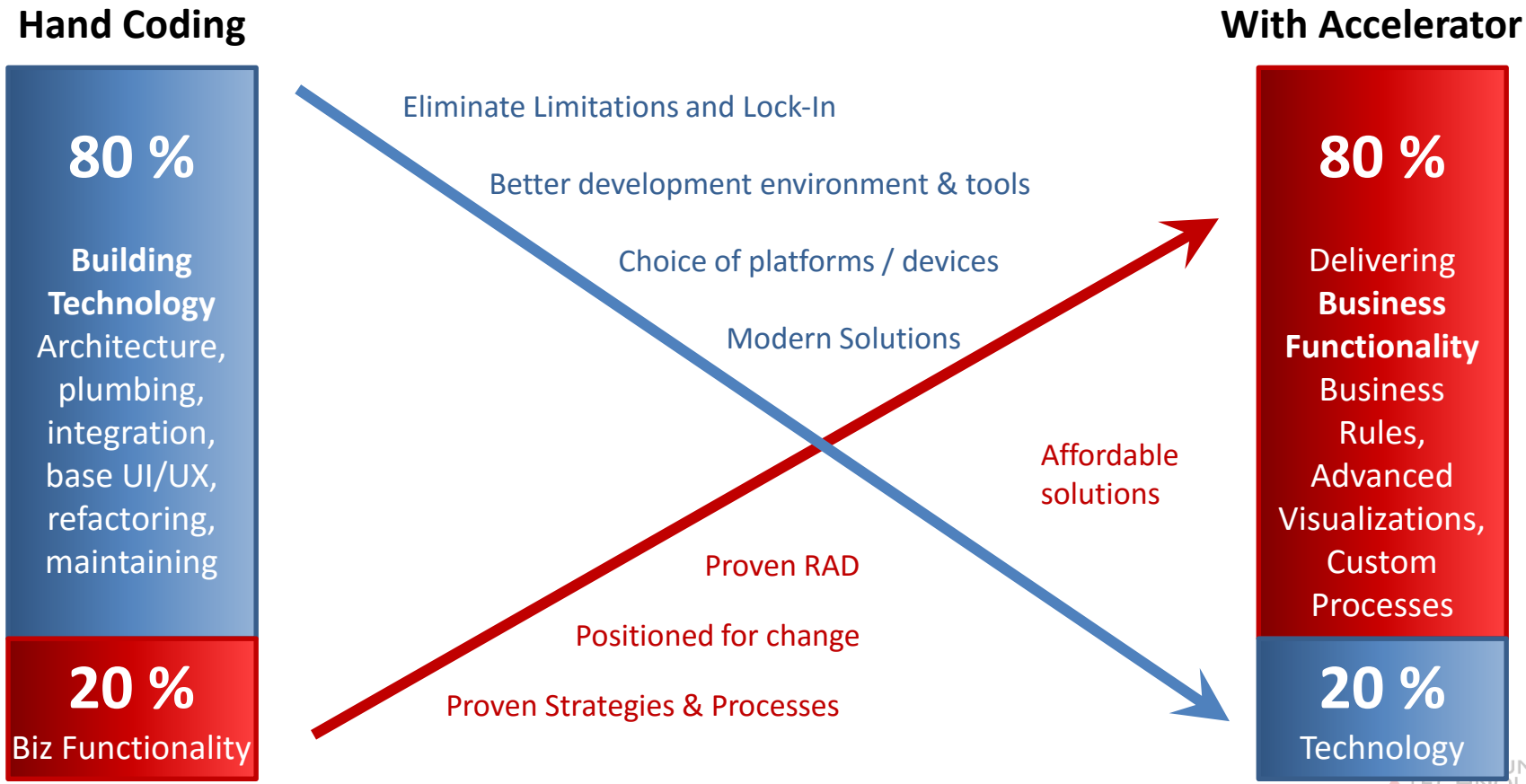
# Flipping the Development 80/20

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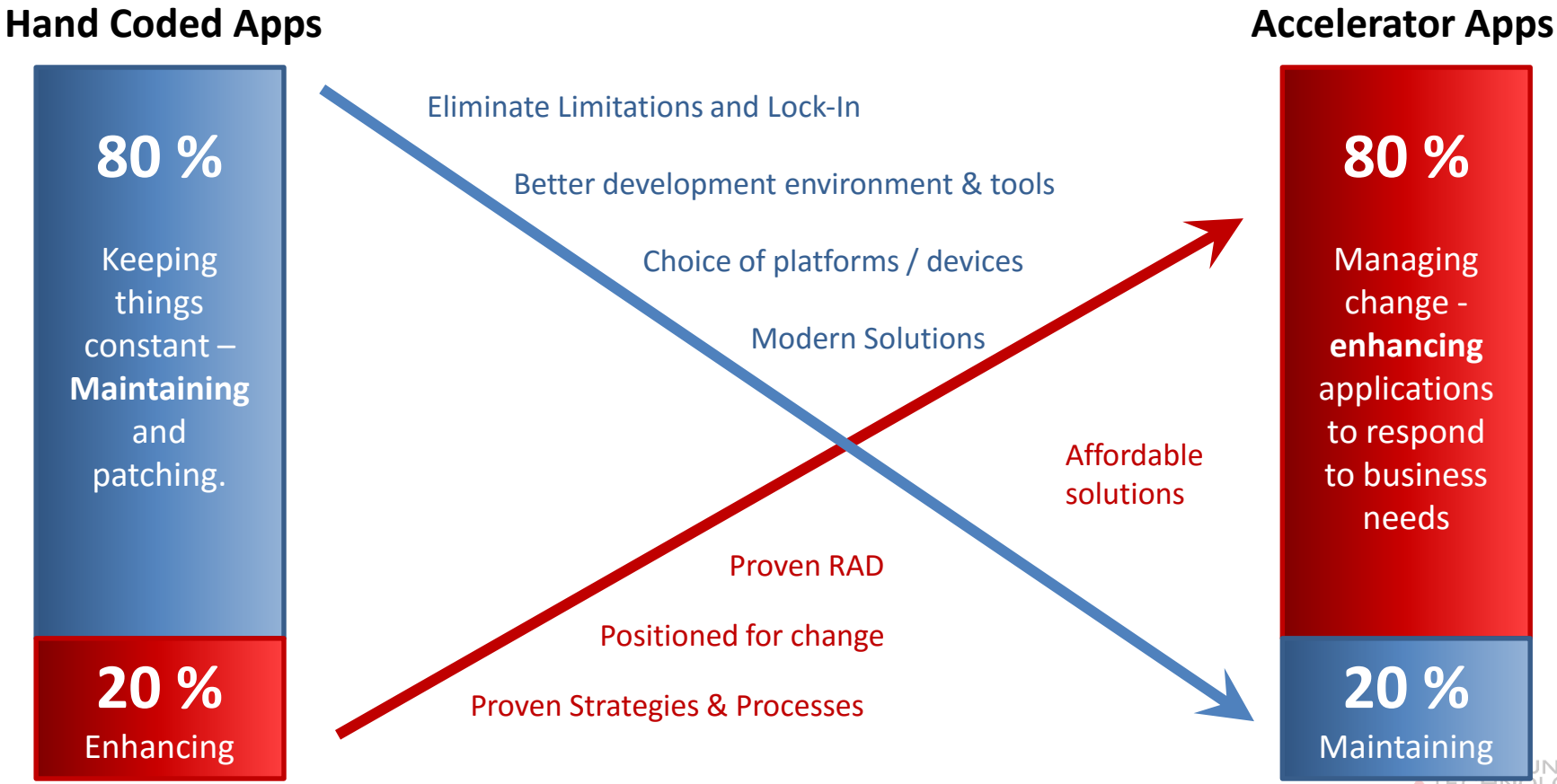
# Flipping the Maintenance Drag 80/20

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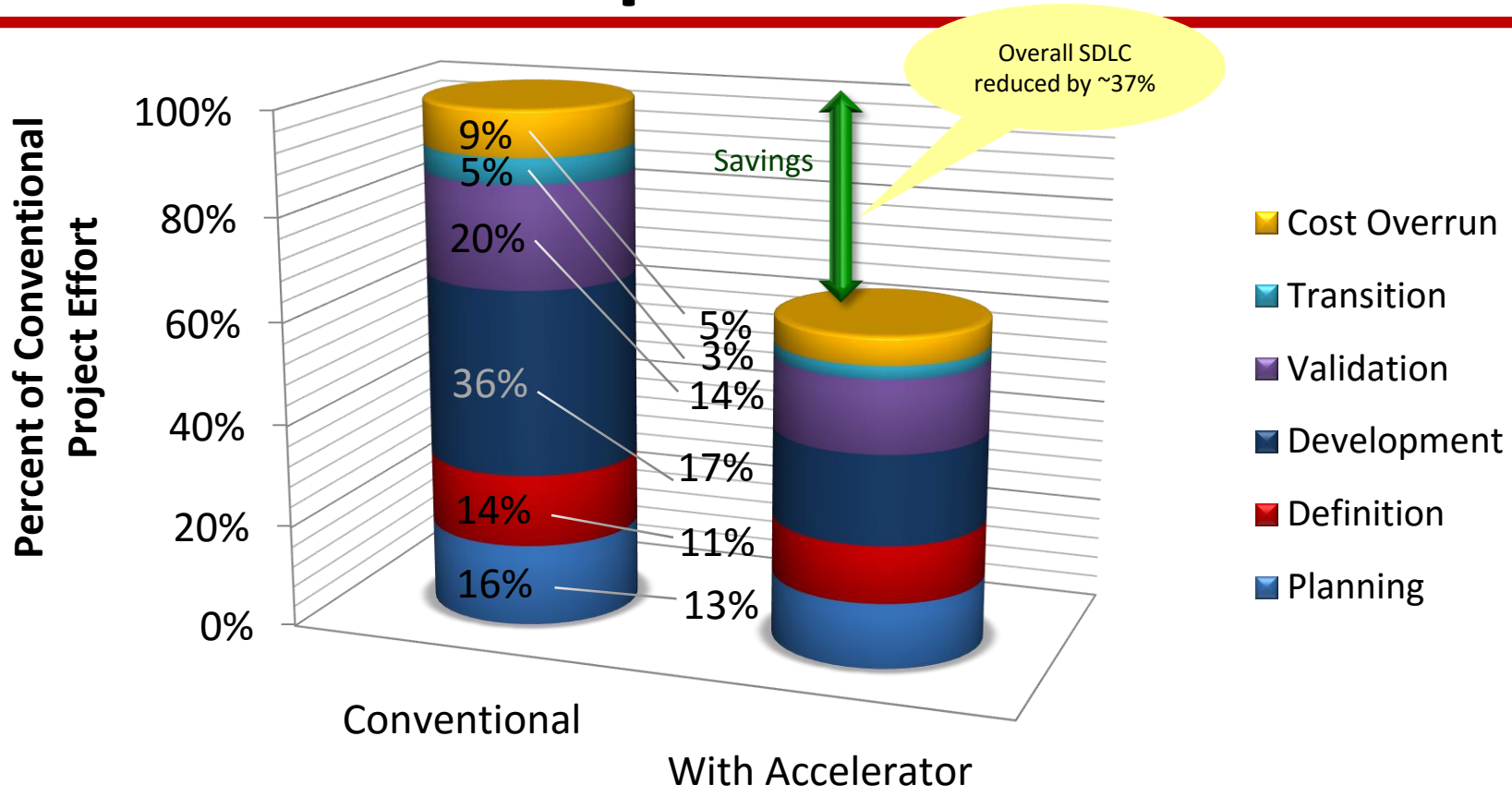
# Accelerator Impact on SDLC



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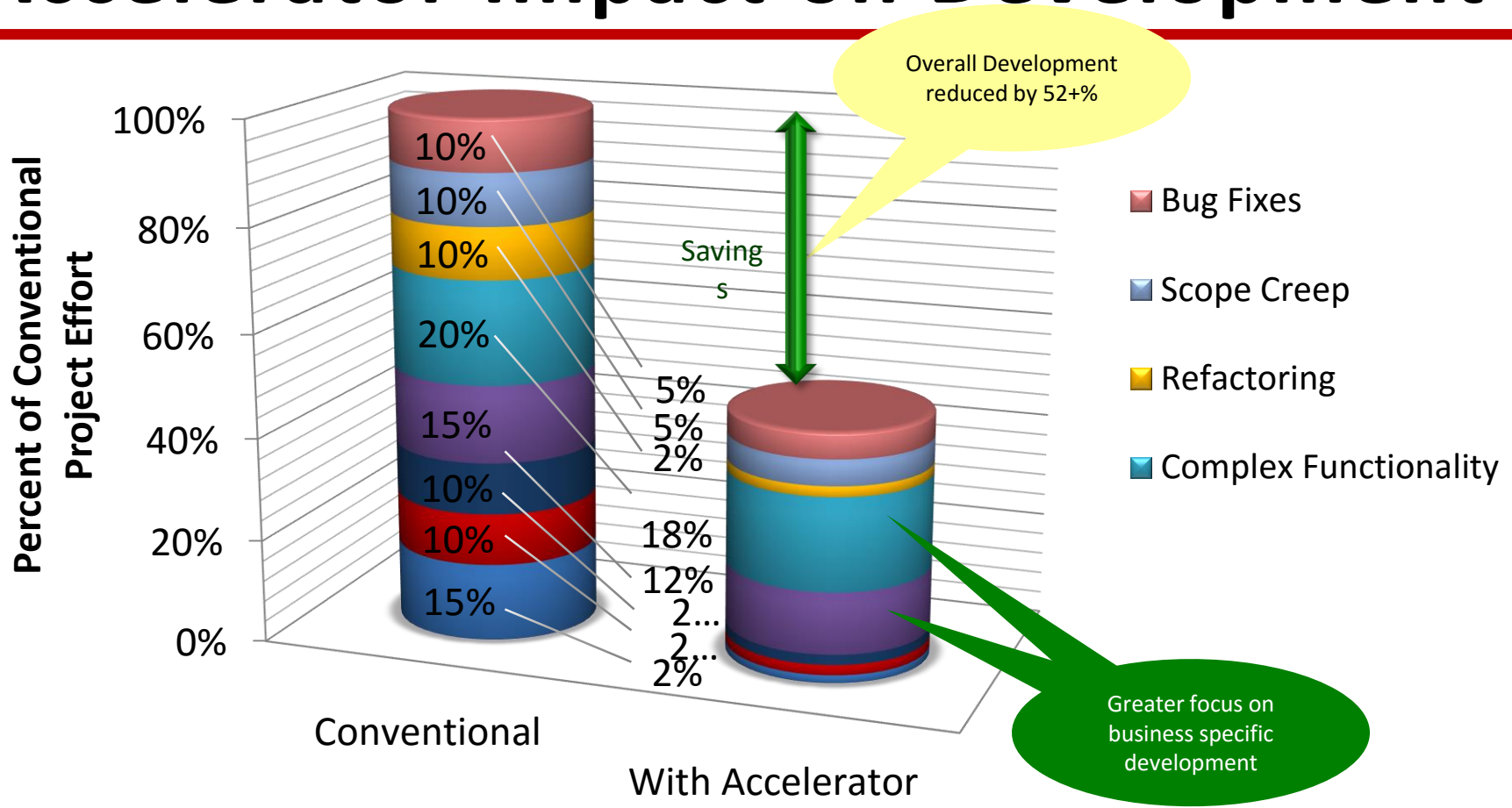
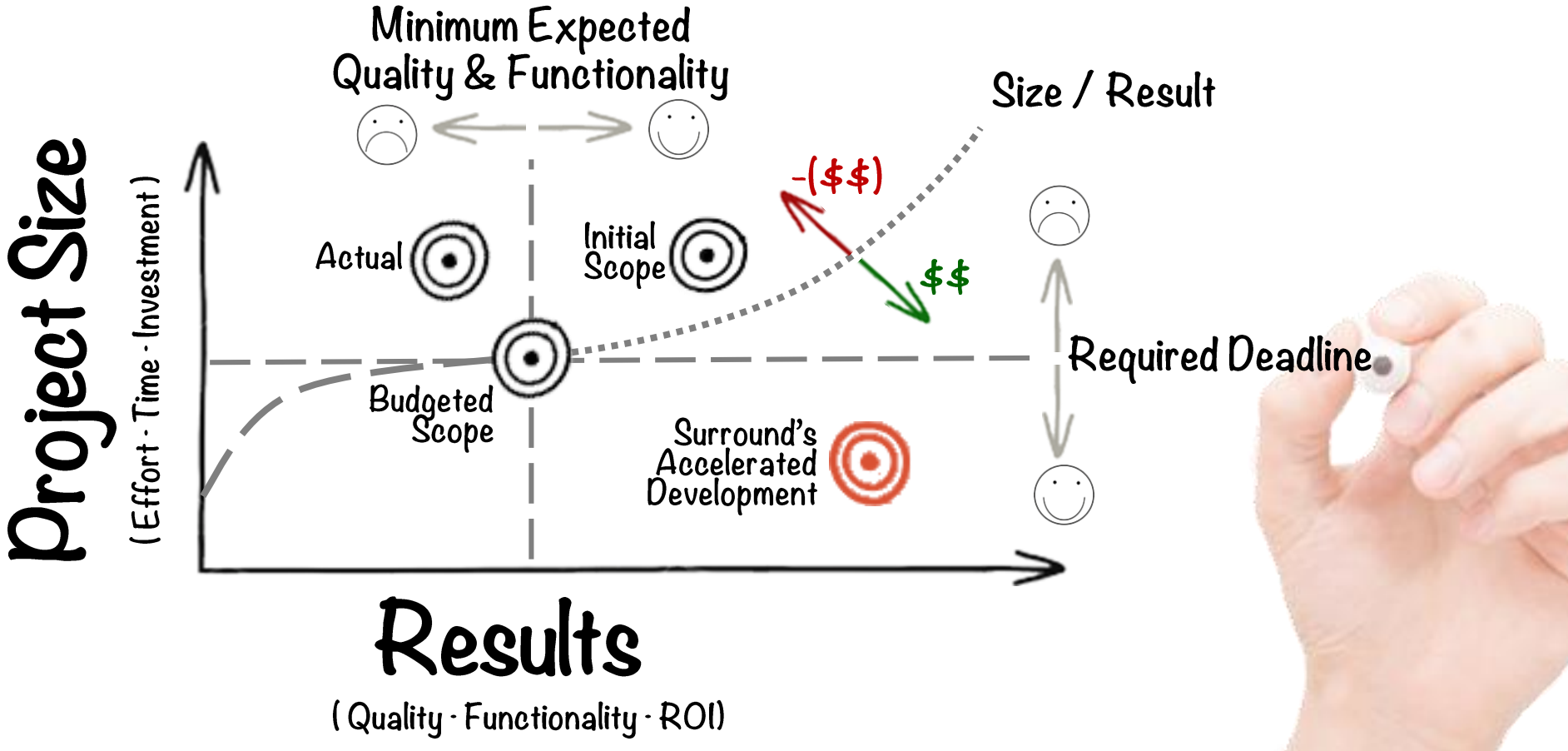
# Accelerator Impact on Development



# Answer the Simple Undeniable Truth



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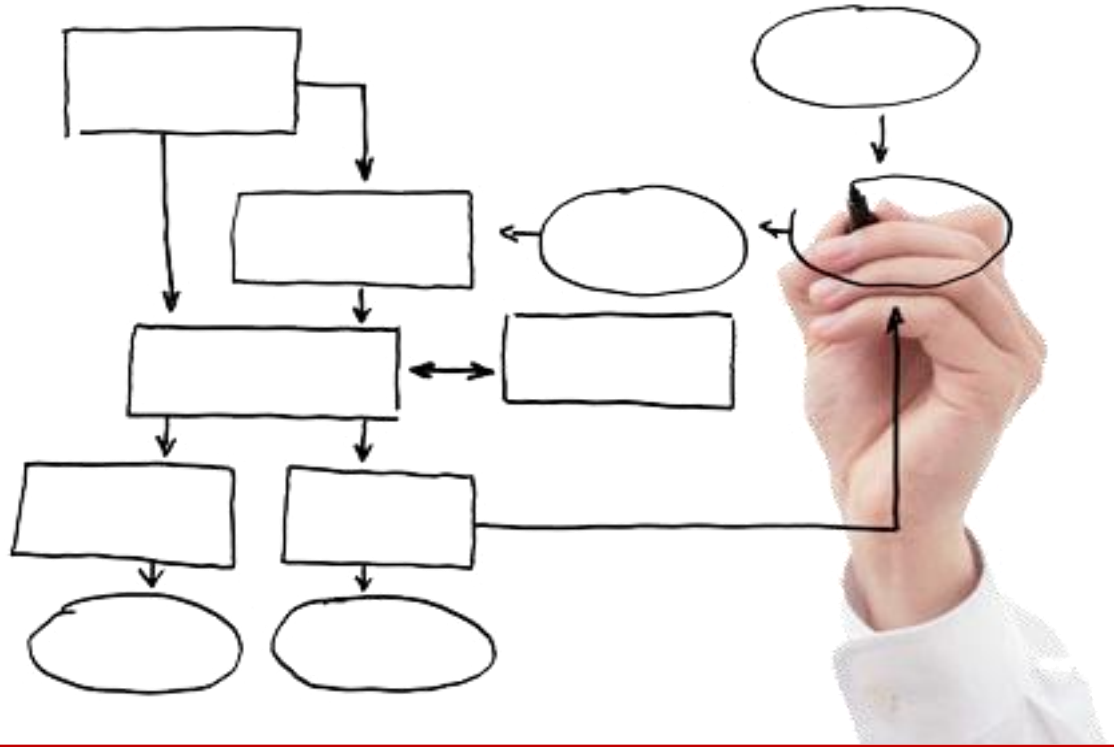
# Strategy
# People
# Process
# Tools



# Food for thought

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*If you could* ***develop faster with better quality and more necessary functionality,*** *how many more projects could be* ***useful, usable, desirable and feasible.***

# Reach your
# Software Superhero Status!

# Create Software Users Will Love

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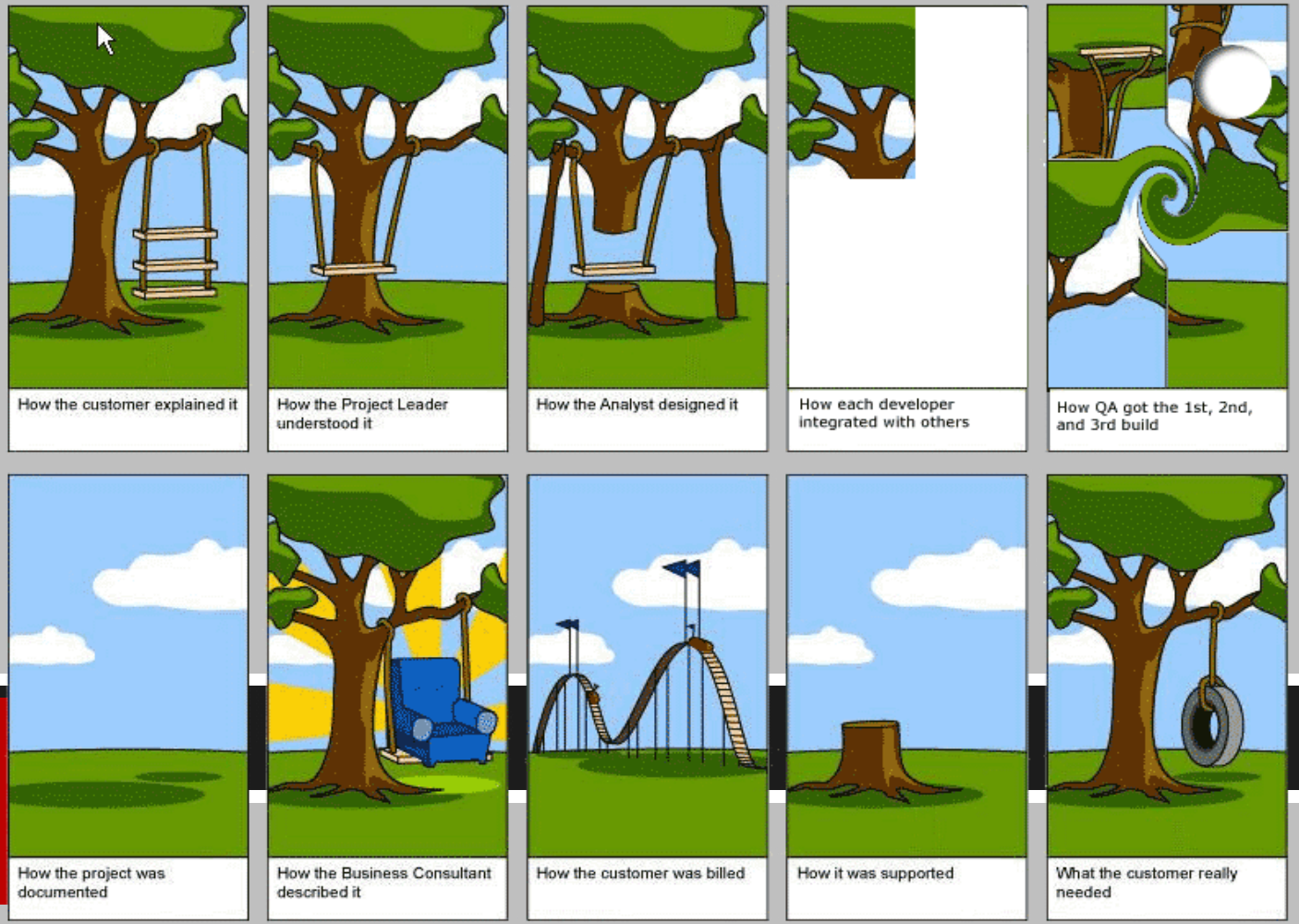
We believe that **you can be a software superhero** by creating software your users will love, and your business will see value and return.

# Q&A


How the customer explained it
How the Project Leader understood it
How the Analyst designed it
How each developer integrated with others
How QA got the 1st, 2nd, and 3rd build
How the project was documented
How the Business Consultant described it
How the customer was billed
How it was supported
What the customer really needed

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# Thanks for listening

## Presented By: Lee Paul


[CEO / Accelerated Software Development Evangelist ]

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