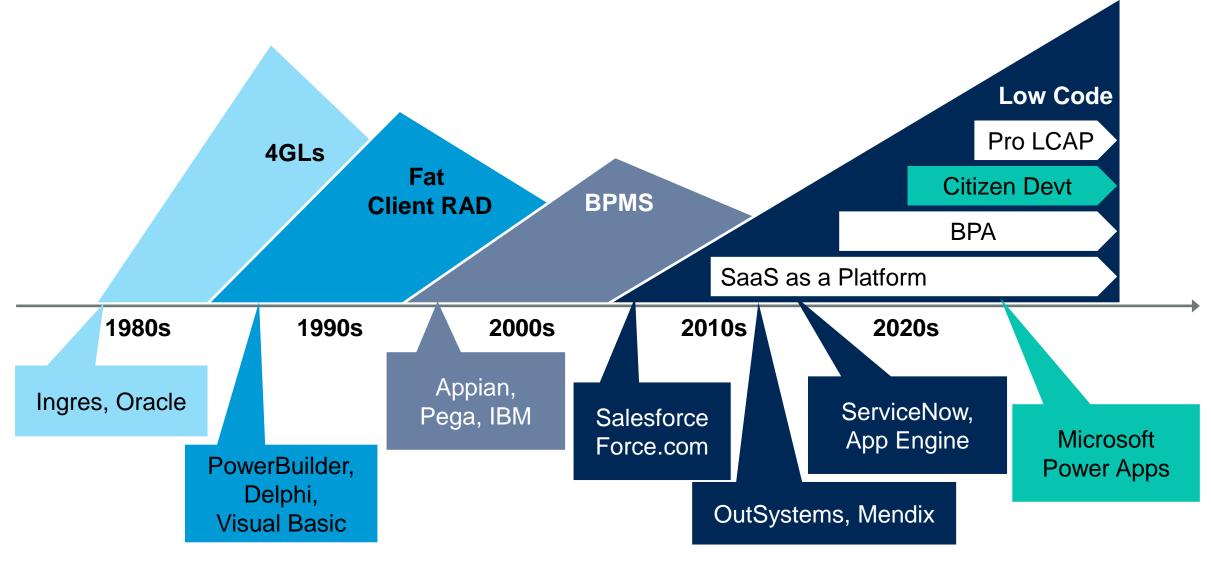
The Future of Low Code

Adrian Leow

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Low Code Is Not New!



BPA = Business Process Automation; BPMS = Business Process Management Suite



Raised Abstraction in Languages Is Normal IT Evolution





Assembly Language

Patch Board



Low

Code

Key Issues

1

What are the main low-code technologies?

2

What does enterprise low code usage look like currently?

3

How will low code evolve over the next few years?



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"Market" Model for Low-Code Development Technologies



LCAP
Low-Code
Application Platforms



BPA
Business
Process Automation



MXDP

Multiexperience

Development Platforms



RPA
Robotic
Process Automation



iPaaS
Integration Platform
as a Service



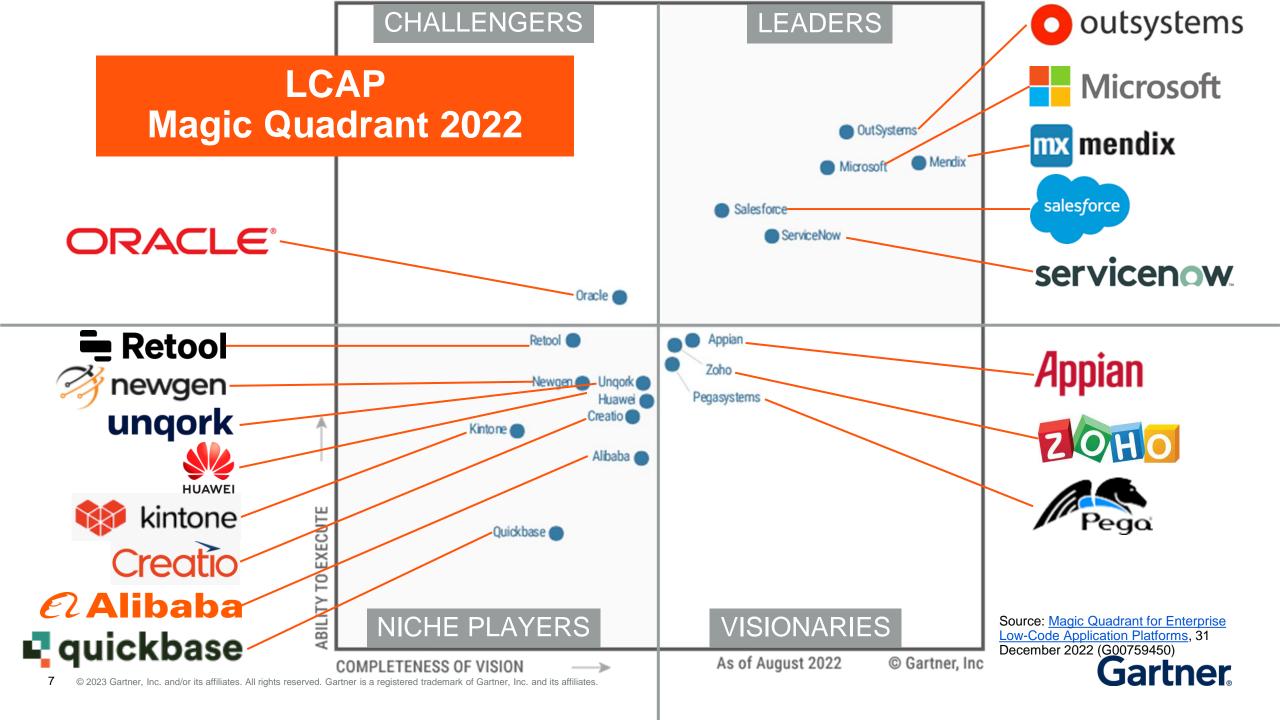
CADPCitizen Automation and
Development Platforms



Other Low-Code Development Technologies

Low Code Is a Paradigm Not a Product Category





Huge Market of Vendors



17 Vendors

Low-Code Application Platforms

UX + Data + Business Logic, Embeds Database

200+ Vendors

Low-Code Development Tools

for Any of UX, Database, Business Process, AI, IoT ...

400+ Vendors



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Does Low Code Deliver?

New Key Technologies Procured to Build Digital Business Platforms by Success Groups

Multiple Responses Allowed

▲ Statistical Significant Difference Toward Low-Success Group	Low Success (n = 57)	Medium Success (n = 97)	High Success (n = 52)
New Data Management Technologies (E.g., In-Memory Databases, Caching, Data Lakes, Analytics)	60%	51%	73%
API Platforms (E.g., API Management, API Gateways, API Marketplaces)	53%	61%	69%
Internet of Things (IoT) Platforms (E.g., Communications, Device Management, Security, Edge Platform, OT Gateways)	70%	71%	69%
Modern Application Platforms (E.g., PaaS, Microservices, Serverless Functions, etc.)	40%	59% ▲	67% 📥
New Integration Platforms (e.g., iPaaS, ESBs, ETL, Messaging)	33%	58% ▲	54%▲
Multiexperience Development Platforms (MXDP)	39%	40%	48%
Event Stream Processing (E.g., Streaming Analytics, Complex Event Processing, Event Driven Applications)	33%	38%	48%
Low-Code Development Platforms	7%	22%▲	35%▲
Average No. of New Technologies	3.4	4.0	4.6

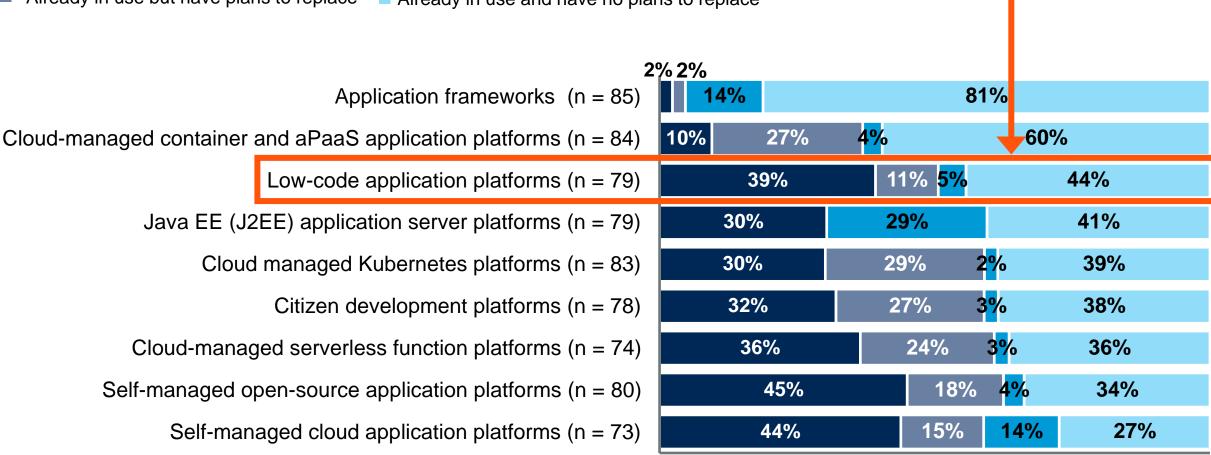
n = Varies; All Respondents, Excluding Not Sure

5x More High Success vs. Low Success

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LCAP Usage Is Already High

- No plans to use in next 12 months
- Planning to use in next 12 months
- Already in use but have plans to replace
- Already in use and have no plans to replace



n = Bases Vary; Excluding "Not Sure" and "Not Applicable"

Q: Which of the following application platforms does your organization currently use or plan to use in the next 12 months? *Note values 2% and below not shown

Source: 2021 Gartner Platforms for Software Engineering and Delivery Survey

Gartner

100%

50%

44% of Those Surveyed

Already Use LCAP

LCAP Helps With the Top Challenge in SWE

Top Three Challenges Software Engineering Leaders Face Rank Up to Three

First Choice Sum of Top Three 14% Hiring, developing, retaining talent 38% Ensuring security of the software solutions we deliver 12% 34% Urgent/critical requests that constantly disrupt our ability to activer 11% 34% Reduce time to market without sacrificing quality 15% 32% 26% Ensuring effective use of agile and DevOps practices 10% Large backlog of technical debt which consumes more effort than feature delivery 7% 26% 6% Building effective, diverse, multicultural software engineering teams 24% Controlling and reducing infrastructure cost (e.g., cloud) 8% 24% Measuring the business value we deliver 7% 22% 15% Tools, frameworks, platforms are inadequate for our application delivery requirements 4% Deciding what to build vs. buy vs. rent 4% 14% 8% Collaborating with UX teams 3% 2%

Others

0%

25%

Q: The top three challenges I face as a software engineering leader are ...?

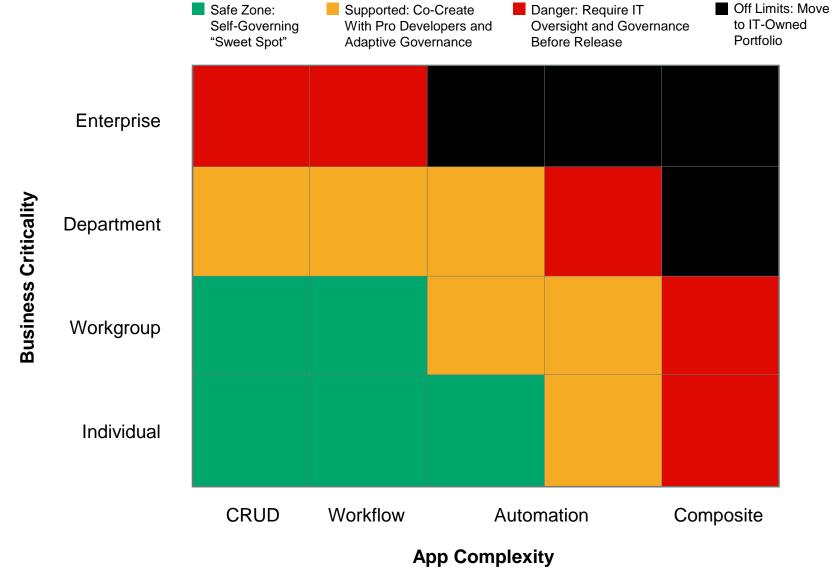
n = 314; SW Engineering Leaders

Source: 2021 Gartner Software Engineering Leaders Survey

50%

^{* ...} for our application delivery requirements

Citizen Developers Need Adaptive Governance





Key Issues

What are the main low-code technologies?

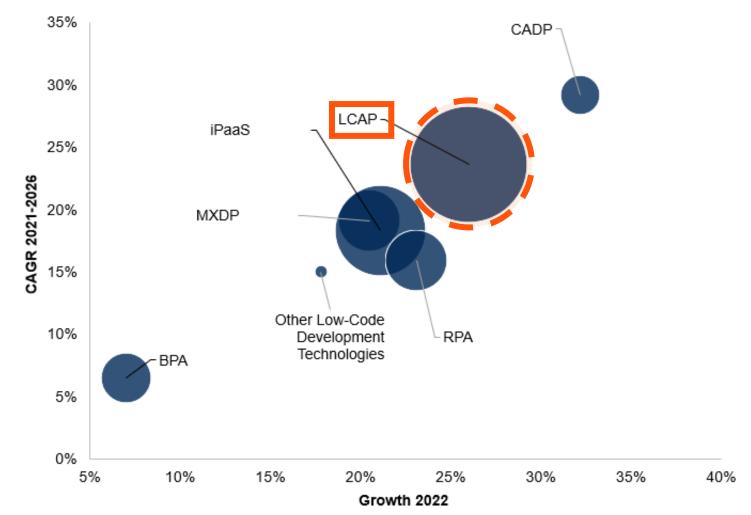
What does enterprise low code usage look like currently?

How will low code evolve over the next few years?



Low-Code Development Technologies Growth Forecast

Low-Code Development Technologies' Spending by Segment





Result Is a Large Variety of Low-Code Platform Types

Appian, AgilePoint, Bizagi, Creatio, Kissflow, Pega

> Hypatos, SuccessData

> > Hyland, Newgen

Automation Anywhere, SS&C Blue Prism, UiPath

Boomi, Informatica, MuleSoft, Workato, Zapier

> Mendix, OutSystems

HCLSoftware (Volt MX), Neutrinos

Business Process Automation (BPA)

Intelligent Document Processing (IDP)

Content Process Automation (Content-Based BPA)

Robotic Process Automation (RPA)

Integration (iPaaS) — Usually Low Code

Low-Code Application Platform (LCAP)

Multiexperience (MXDP)

Decision Automation (DMS)

Digital Experience (DXP)

Citizen Automation and Devt (CADP)

RAD Code Generators

SaaS-Extension LCAP (LCAP)

Service-Creation LCAP (LCAP)

Rapid Mobile App Development (RMAD)

Rapid Web Development

ACTICO, FICO, InRule, Sparkling Logic

Adobe, CoreMedia, Progress

Airtable, Pipefy, Microsoft Power Apps, Quickbase

> Batoi, Graphite GTC, Scopeland Technology

Microsoft, Salesforce, ServiceNow, Zoho

Livebase, Structr, SyncTree, Vantiq

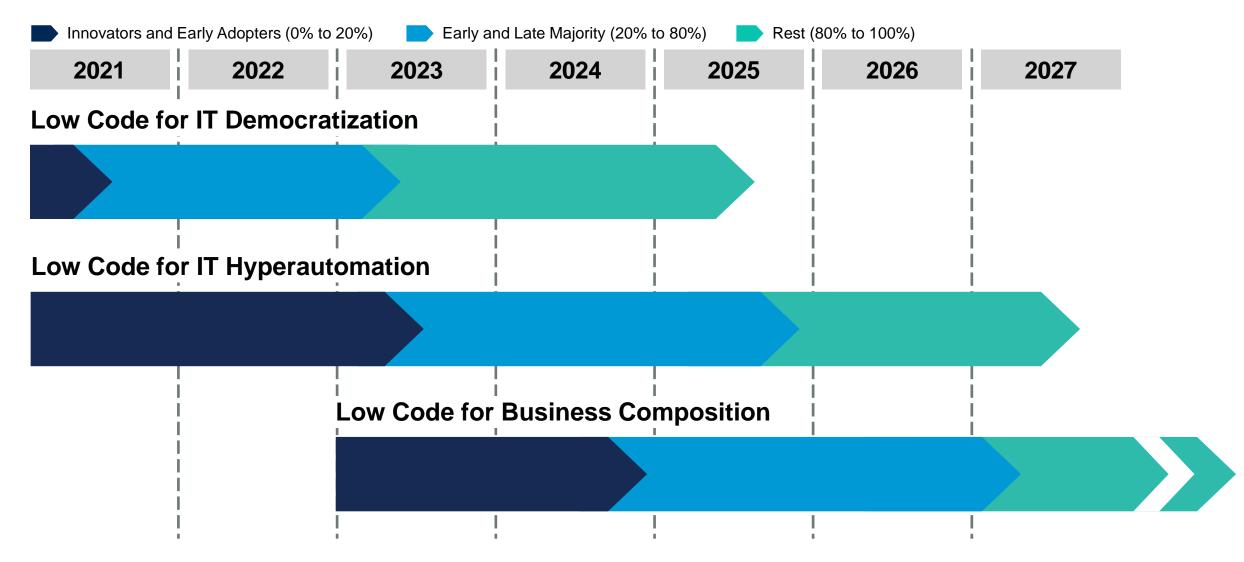
Alpha Software, Skuid

Retool, Forms.io, Appsmith, Budibase

Vendors for Illustration Only Vendors May Map to Multiple Platform Types

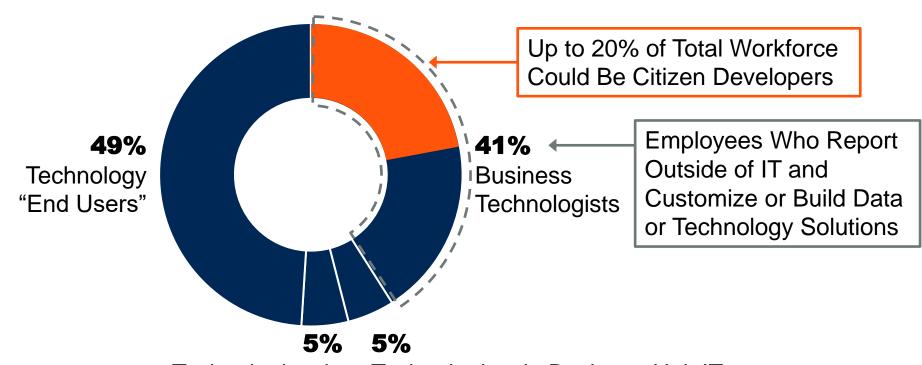


Low-Code Evolution Spectrum



Enabling Citizen and Business Developers

Phase 1: Democratization Support for Business Technologists



Technologists in Central IT Departments

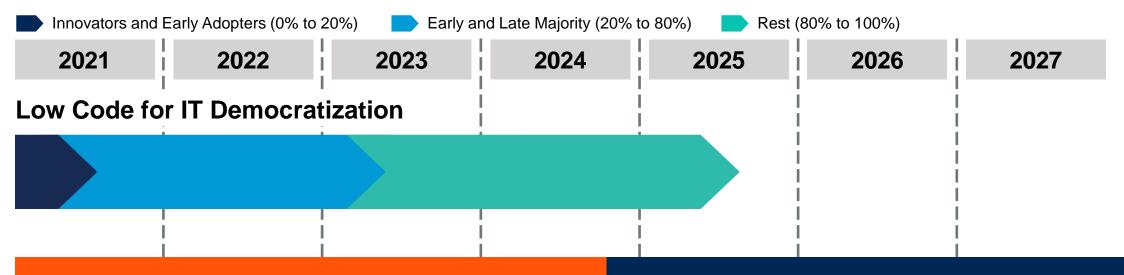
Technologists in Business Unit IT and Data and Analytics Departments

n = 4,977; Employees Across the Entire Workforce





Phase 1: Low Code for IT Democratization



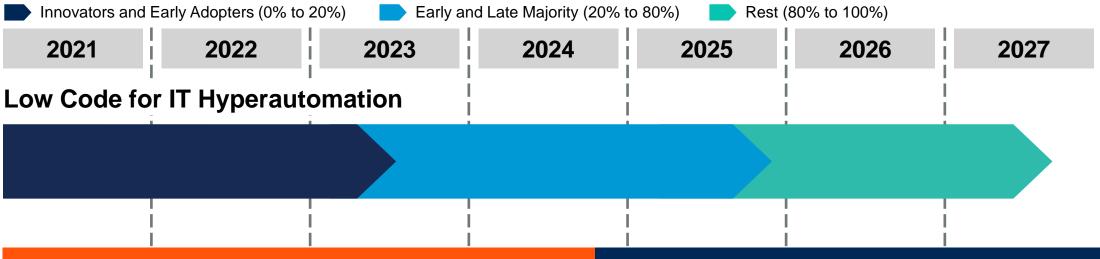
By 2024, developers outside of formal IT departments (citizen developers) will account for at least 80% of the user base for LC technology, up from 60% in 2021.

Technology Characteristics:

- Heavily focused on cloud deployment and self-service subscription-based business models.
- Virtually all successful low-code solutions offer mobile interface design and development targeted at nontechnical developers.
- Modern HTML5-enabled browsers enable developers to deliver "no touch" application deployments.



Phase 2: Low Code for Hyperautomation



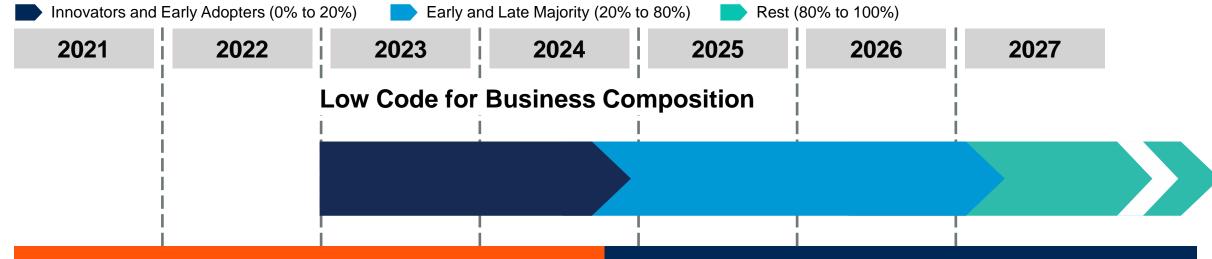
By 2024, hyperautomation functionality will be the dominant competitive differentiator among LC development tools.

Technology Characteristics:

- Machine learning and AI techniques to transform how software logic is developed, managed, consumed and shared.
- Three levels of automation: task level, process level and process orchestration.
- Expanded support for hyperautomation by heavily embracing more advanced process-level automation.



Phase 3: Low Code for Business Composition



By 2027, at least 50% of LC technology investments will be directed at supporting PBCs, up from less than 5% in 2021.

Technology Characteristics:

- Broad industry adoption of composable business strategies.
- Composable business has three key characteristics: composable thinking; composable business architecture; and composable technologies.
- Low code becomes the preferred "orchestration platform" that pulls discrete PBCs together.



Low Code: An Option to Consider Because ...

- 1 Democratization increases the pool of developer/developer types.
- Business units can use hyperautomation tooling, especially for departmental use cases.
- Extending SaaS through (low code) SaaS-as-a-platform tooling is very common. E.g., Microsoft, Salesforce, SAP, ServiceNow.
- 4 Low code will usually abstract SDLC tooling. E.g., built-in testing tools.
- Low-code applications are often composed from/layered on services/SaaS via APIs.
- Pro, business and citizen developers are well covered by low-code vendor offerings.



Recommendations

- Shortlist low-code vendors that promote developer experience product investments that drive opportunities for the abstraction of complexity for business processes to support both less sophisticated users and future-state acceleration of decision automation.
- Leverage the low-code market evolution spectrum to check whether low-code vendors you evaluate are going through structured planning to determine key roadmap and go-to-market investments that align with the market evolution outlined or if they're falling behind.



Recommended Gartner Research

- **Emerging Technologies: The Future of Low Code** Mark Driver
- 8 Best Practices for Successful Low-Code Application **Platform Adoption Kyle Davis**
- > Forecast Analysis: Low-Code Development Technologies, Worldwide Varsha Mehta, Fabrizio Biscotti and Others
- Harness the Disruptive Powers of Low-Code: A Gartner Trend **Insight Report** Jason Wong and Kyle Davis

