2013 EMBEDDED MARKET STUDY

UBM Tech Electronics' Brands

Unparalleled Reach & Experience

UBM Tech Electronics is the media and marketing services solution for the design engineering and electronics industry.

design | EE Times | Test & Measurement World | TechOnline | EDN Network | embedded | DesignCon | Planet Analog | EBN | DataSheets.com For electronic Engineers & Buyers

Our audience of over 2,358,928 (as of March 5, 2013) are the executives and engineers worldwide who design, develop, and commercialize technology. We provide them with the essentials they need to succeed: news and analysis, design and technology, product data, education, and fun.

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April 22-25, 2013
McEnery Convention Center
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DESIGN West

April 22-25, 2013 | McEnery Convention Center | San Jose, CA | ubmdesign.com

The industry's must attend event! Register Today

DESIGN West is both a technical conference and expo for electronics design engineers, entrepreneurs, and technology professionals who create products with electronic content. Held in the heart of Silicon Valley, it's where the world's top design engineers and product developers gather and learn, gain inspiration, and get practical information and hands-on training they can put to immediate use.

Visionary speakers, relevant content

Engineering's most visionary names will be on hand, along with **UBM Tech's** own editorial content team. **Keynotes include:**

- Luke Dubord, *Jet Propulsion Laboratory, Avionics System Engineer*
- Mayim Bialik, *Actress & Neuroscientist*
- Hugh Herr, *Biomechatronics Director at the MIT Lab*

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DESIGN West (continued)

Free education and training programs for Embedded engineers:

- From Napkin Sketch to Shenzhen: 3 days of insights from design engineers on bringing their ideas to life.
- DESIGN Theater: Exciting events such as product teardowns, panel discussions, prizes & giveaways and more.
- Hands on Speed Training: Engineers will get hands on with development boards and hardware, share knowledge and resources, make things, and learn new skills from the engineers who created these tools.
- Tech Fundamentals: Giving engineers the fundamentals of building holistic platforms and complete solutions.

Join us in 2013 for ESC Silicon Valley's 25th year

The four-day **DESIGN West** event builds upon the solid foundation of engineering education pioneered by the Embedded Systems Conference (ESC), the flagship brand and global electronics industry's leading event. Celebrating its 25th anniversary in 2013, ESC is joined by the popular **Black Hat Summit** and
Android Certification.

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Purpose and Methodology

- **Purpose:** To profile the findings of the 2013 results of EE Times Group annual comprehensive survey of the embedded systems markets worldwide. Findings include types of technology used, all aspects of the embedded development process, tools used, work environment, applications, methods and processes, operating systems used, reasons for using and not using chips and technology, and brands and chips currently used by or being considered by embedded developers. Many questions in this survey have been trended over two to five years.
- **Methodology**: A web-based online survey instrument based on the previous year's survey was developed and implemented by independent research company Wilson Research Group from January 18, 2013 to February 13, 2013 by email invitation
- **Sample**: E-mail invitations were sent to subscribers to UBM/EE Times Group Embedded Brands with one reminder invitation. Each invitation included a link to the survey.
- **Returns: 2,098** valid respondents for an overall confidence of 95% +/- 2.13%.

Disclaimer

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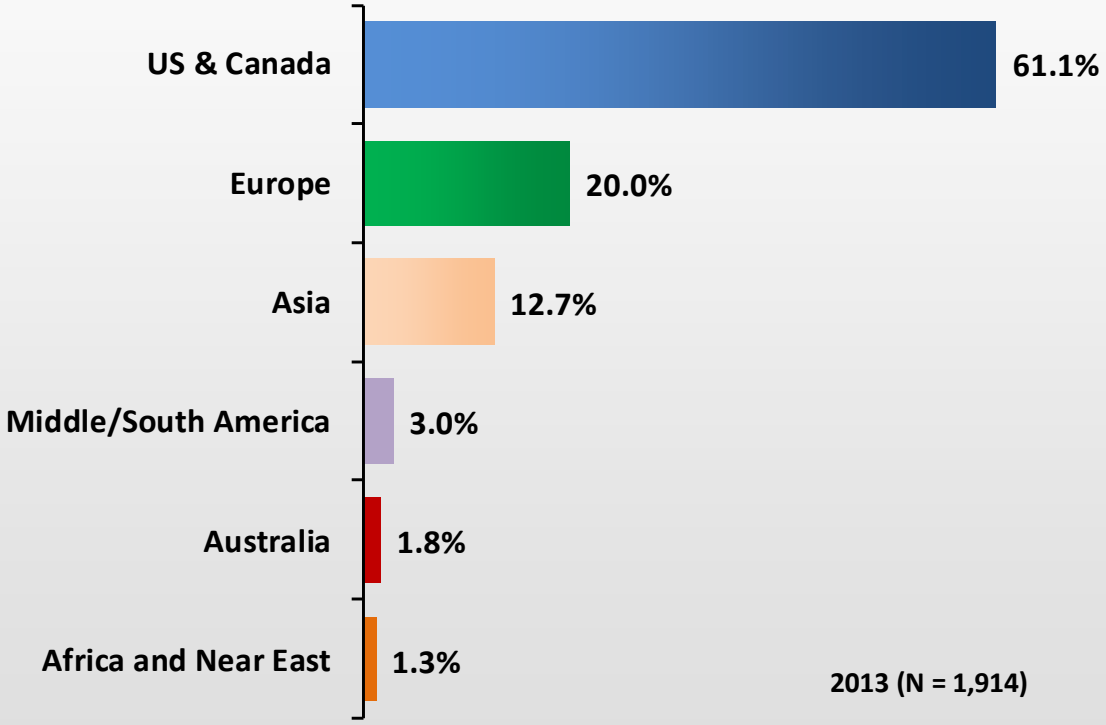
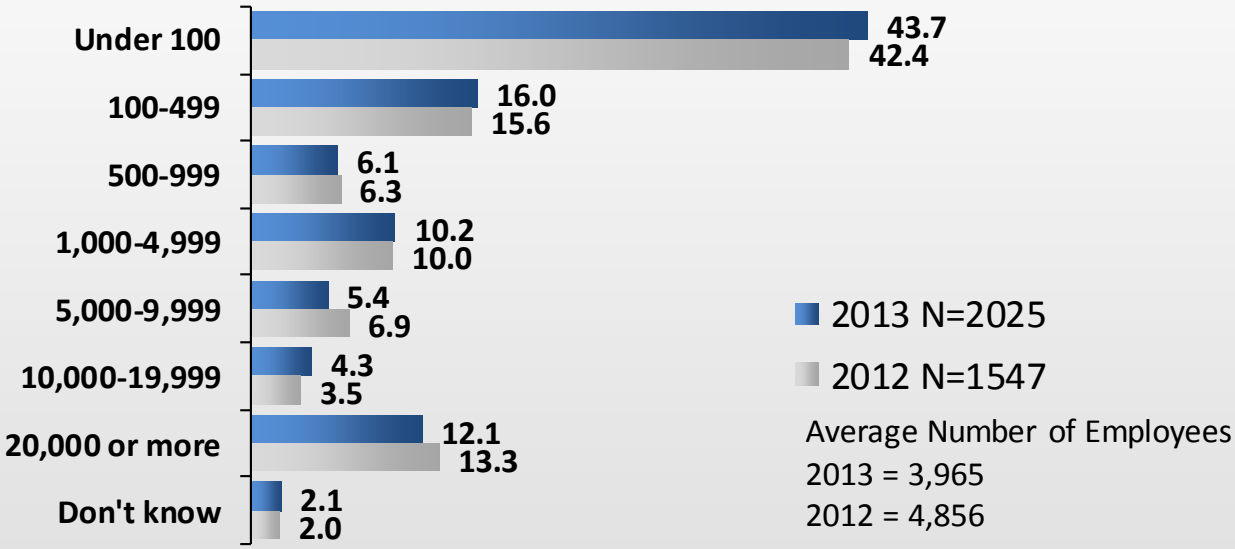
No claims are allowed without the expressed written permission of either Alex Wolfe (alex.wolfe@ubm.com) or David Blaza (david.blaza@ubm.com) at UBM, LLC.

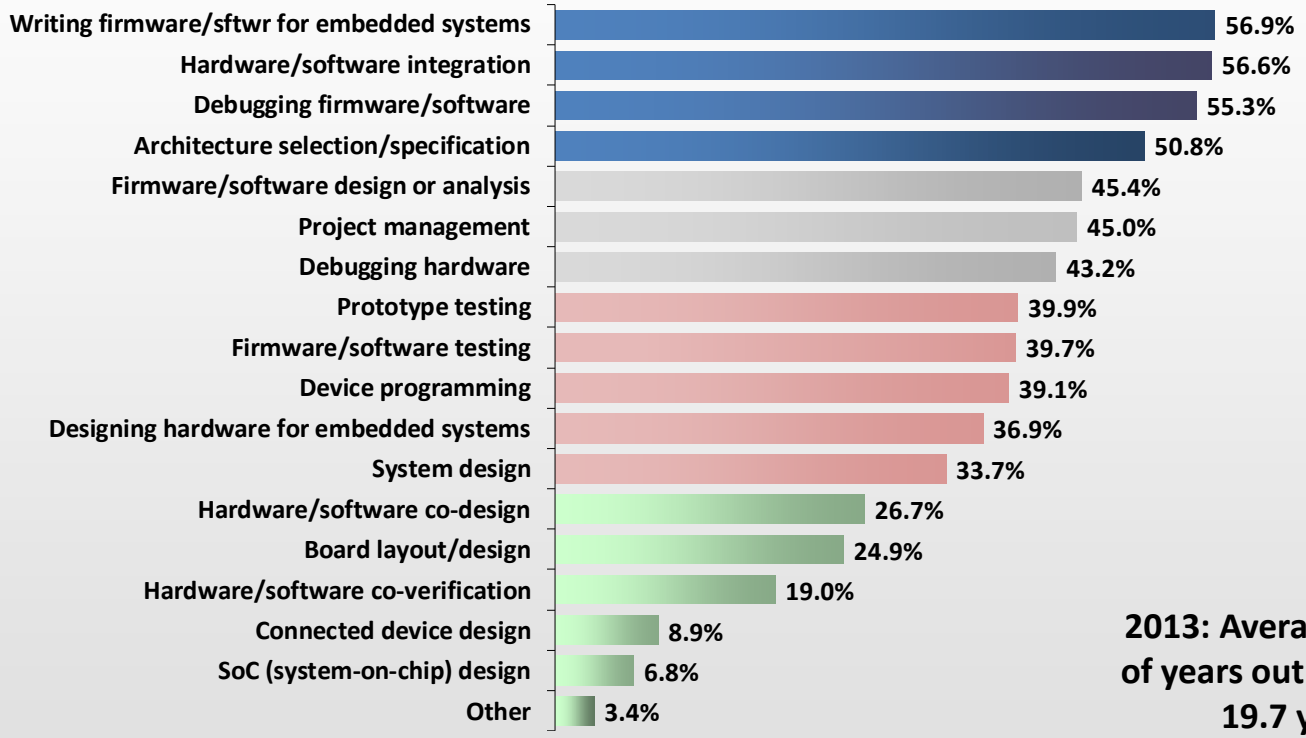
In which region of the world do you reside?



How many employees does your company have at all locations?



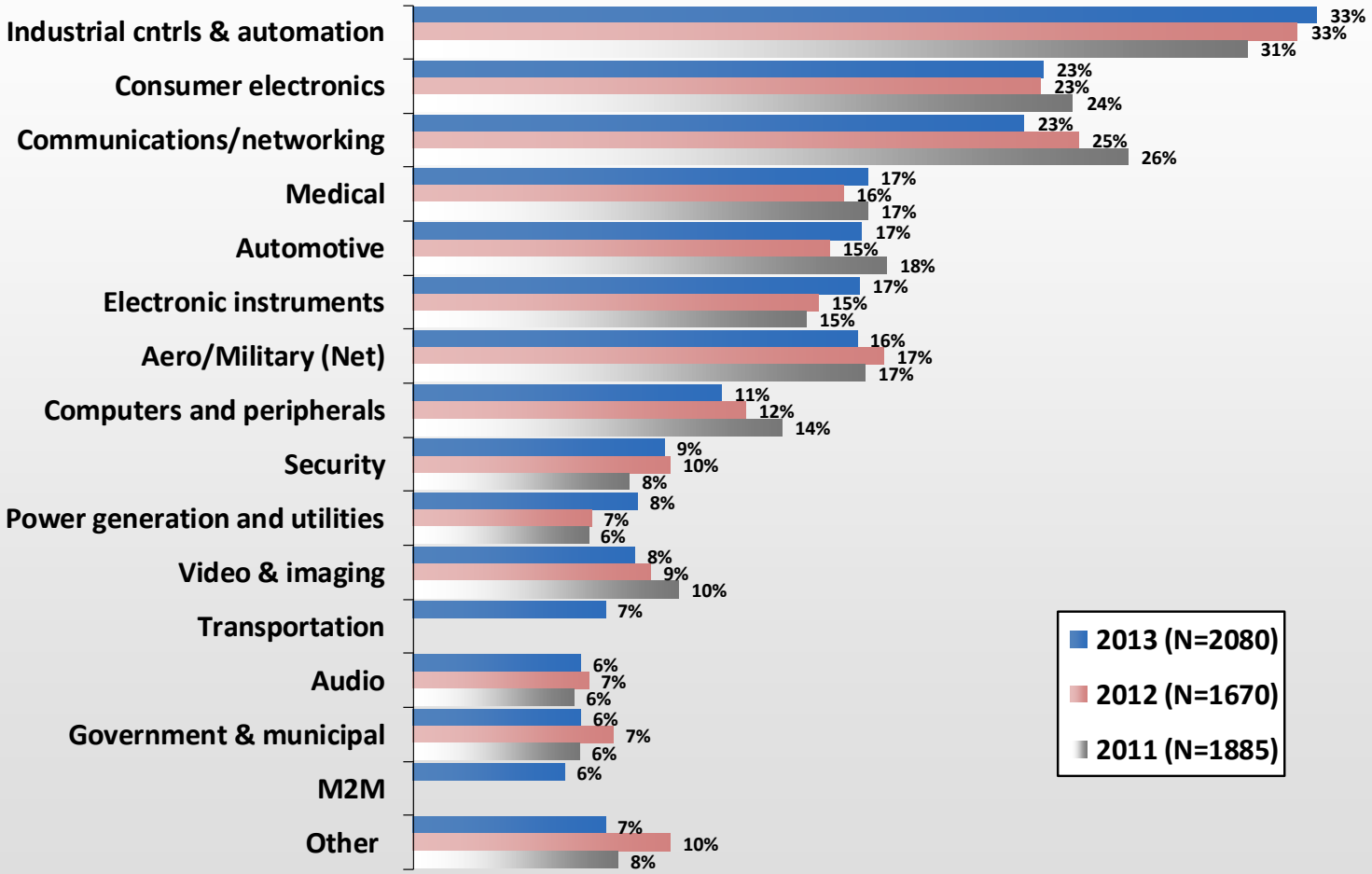
My job function includes:



2013: Average number of years out of school = 19.7 years

2013 (N = 2,020)

For what types of applications are your embedded projects developed?



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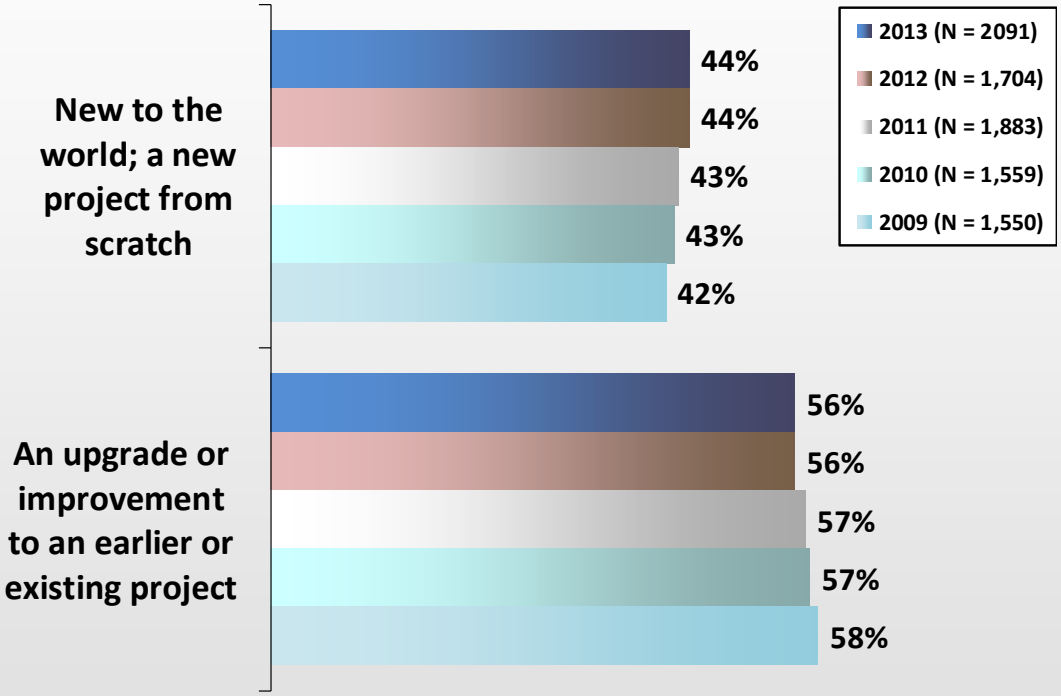
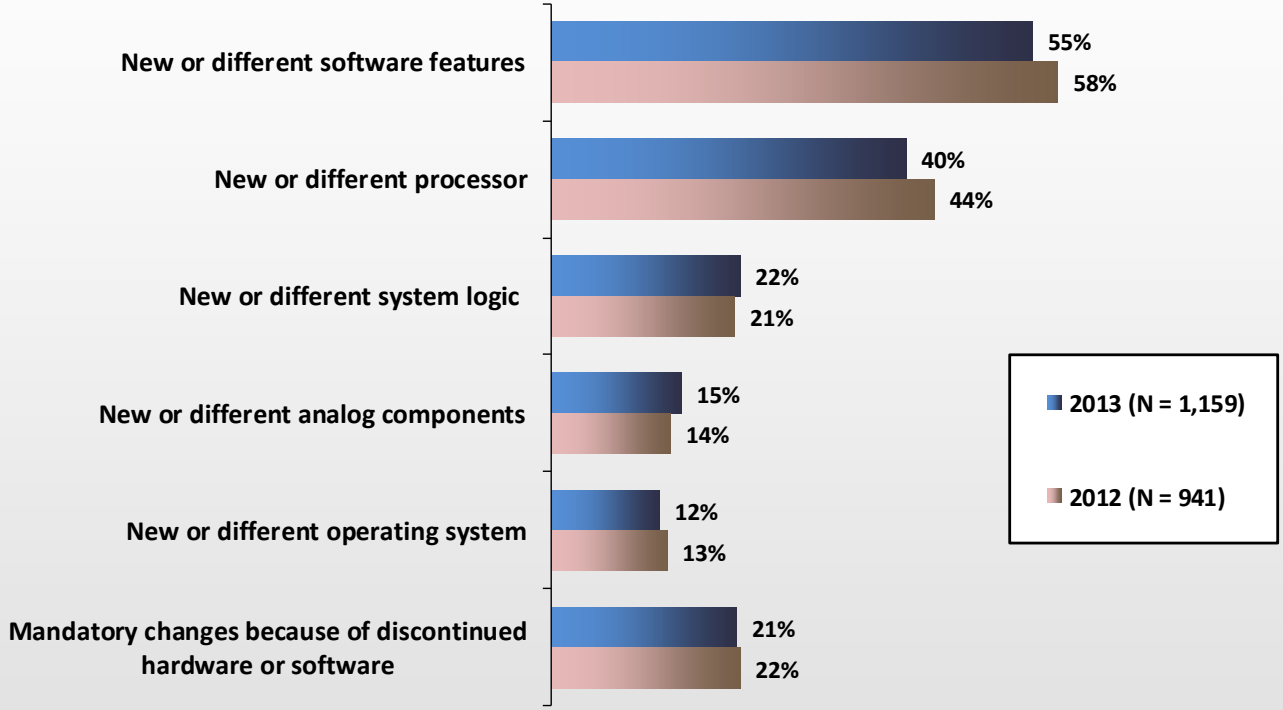
CURRENT EMBEDDED DESIGN ENVIRONMENT

My current embedded project is:

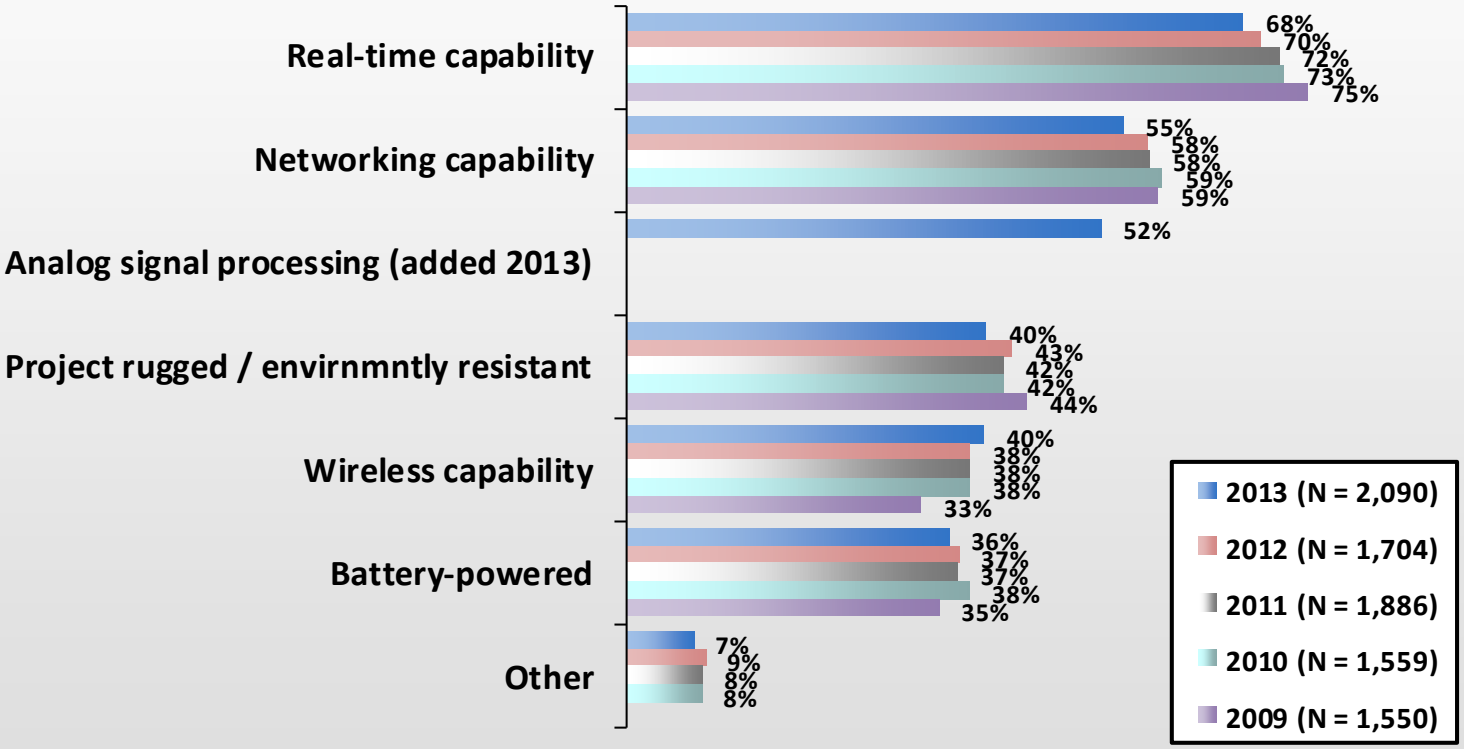


What does the upgrade or improvement include?

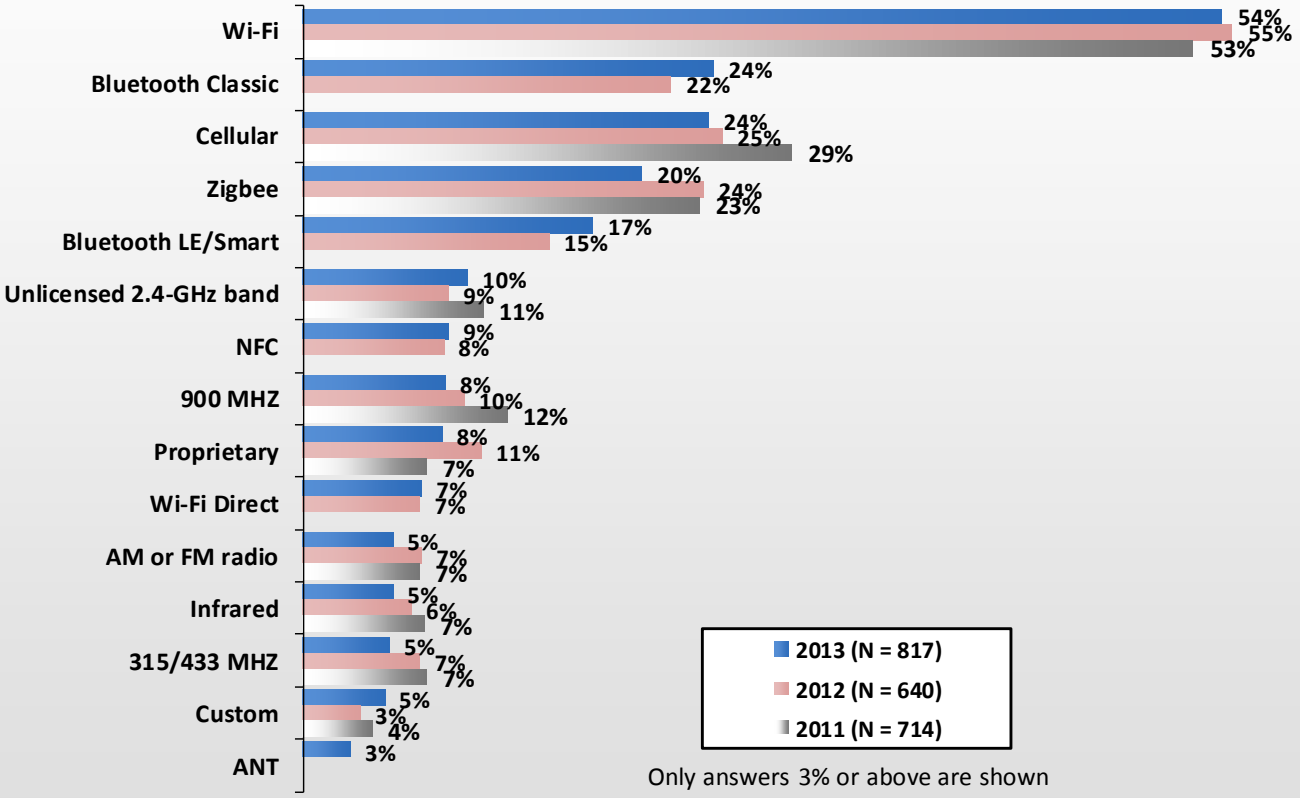


Base = Those whose current project is an upgrade/improvement

Which of the following capabilities are included in your current embedded project?



If wireless, what wireless interfaces does your current embedded project include?



Only answers 3% or above are shown

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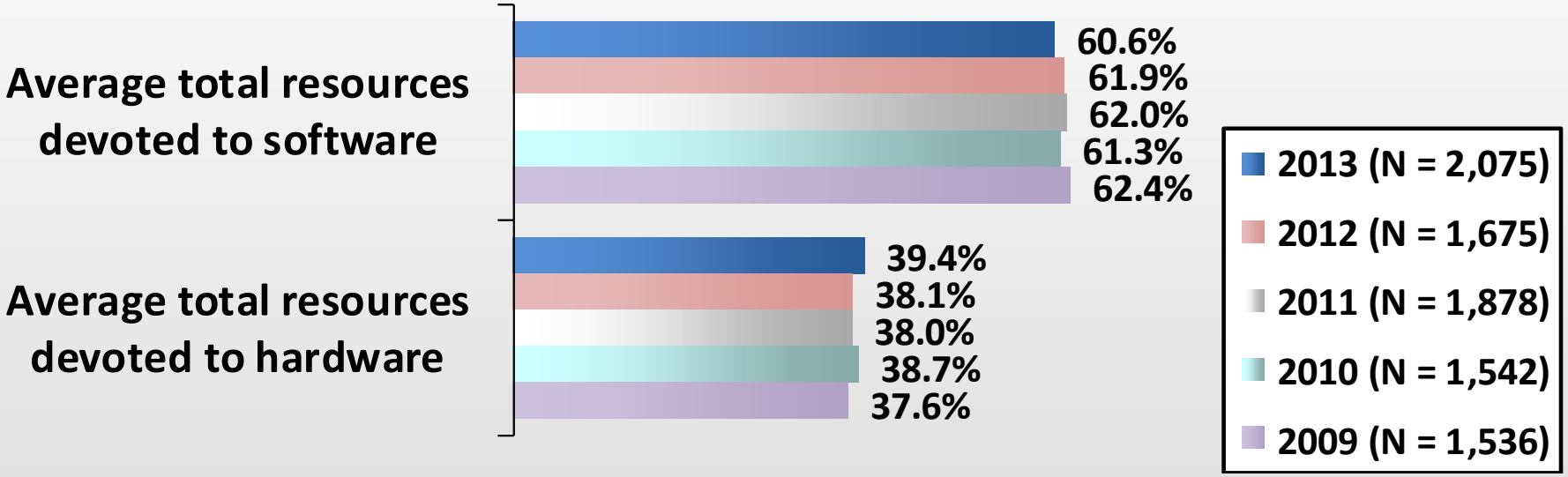
How many people are on your embedded project team?

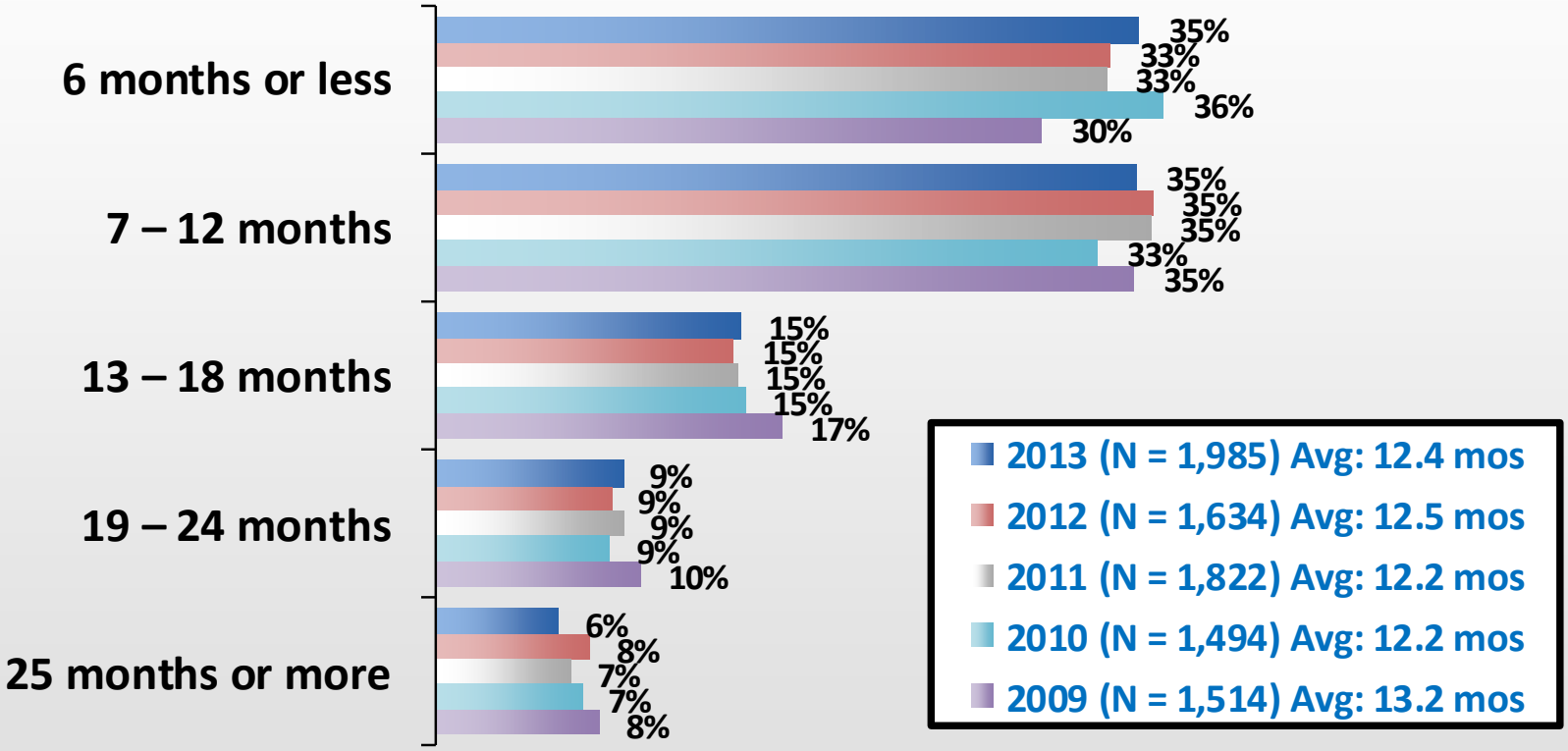
Team 2013 =	14.6	2013 (N = 2,041)
- Software Engineer =	4.0	
- Hardware Engineer =	2.9	
- Firmware Engineer =	2.7	
- QA/Test Engineer =	2.0	
- Systems/Integrator =	1.5	
- Other Engineer =	1.5	
Team 2012 =	15.9	2012 (N = 1,625)
- Software Engineer =	4.9	
- Hardware Engineer =	3.7	
- Firmware Engineer =	3.1	
- QA/Test Engineer =	2.4	
- Systems Engineer =	1.8	

Note: Data excludes outliers 1000+

What is your development team's ratio of total resources (including time/dollars/manpower) spent on software vs. hardware for your embedded projects?

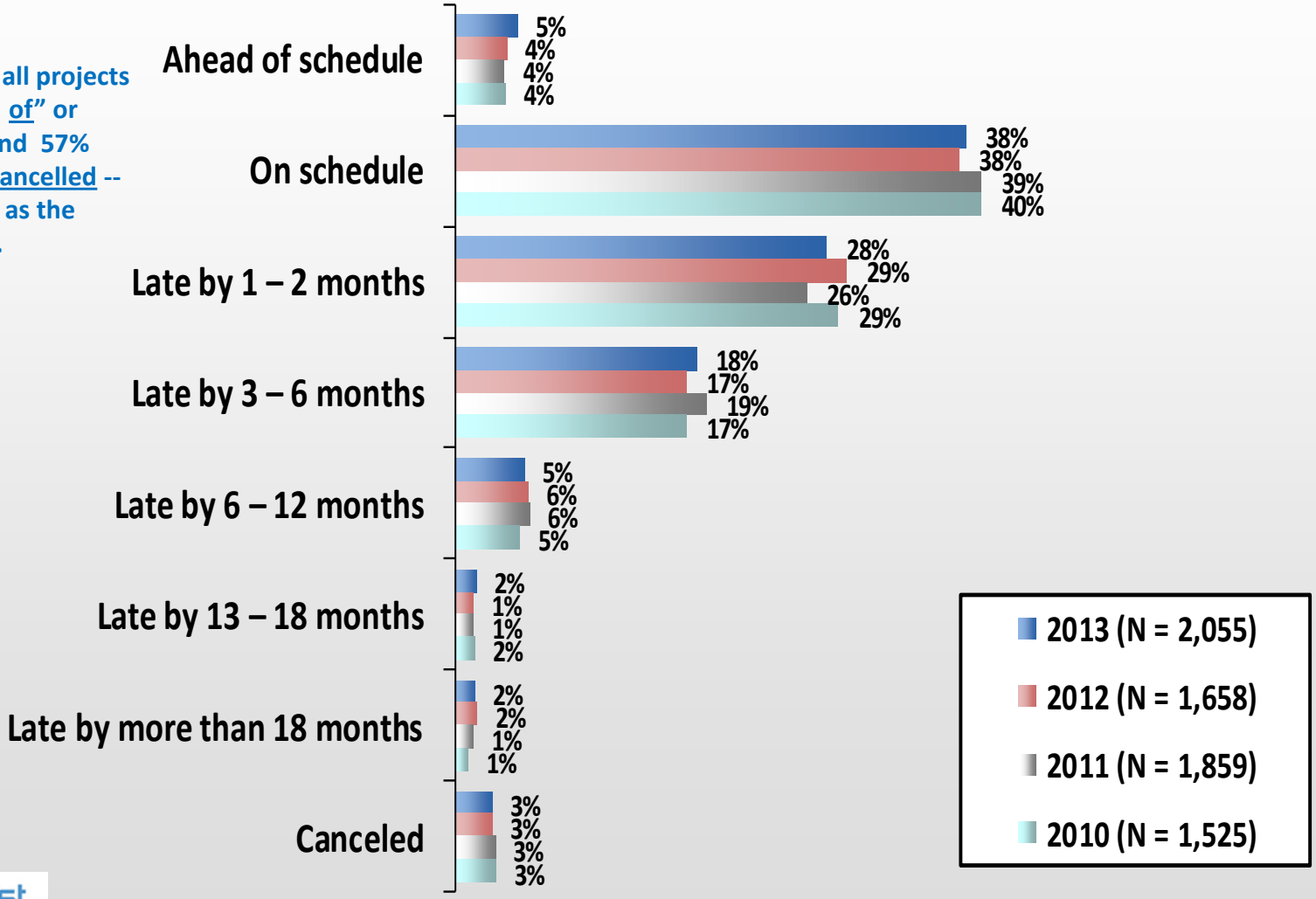


How long did the last project you completed take to finish?



Was that project completed . . .

In 2013, 43% of all projects finished "ahead of" or "on" schedule, and 57% finished late or cancelled -- almost the same as the previous 3 years.



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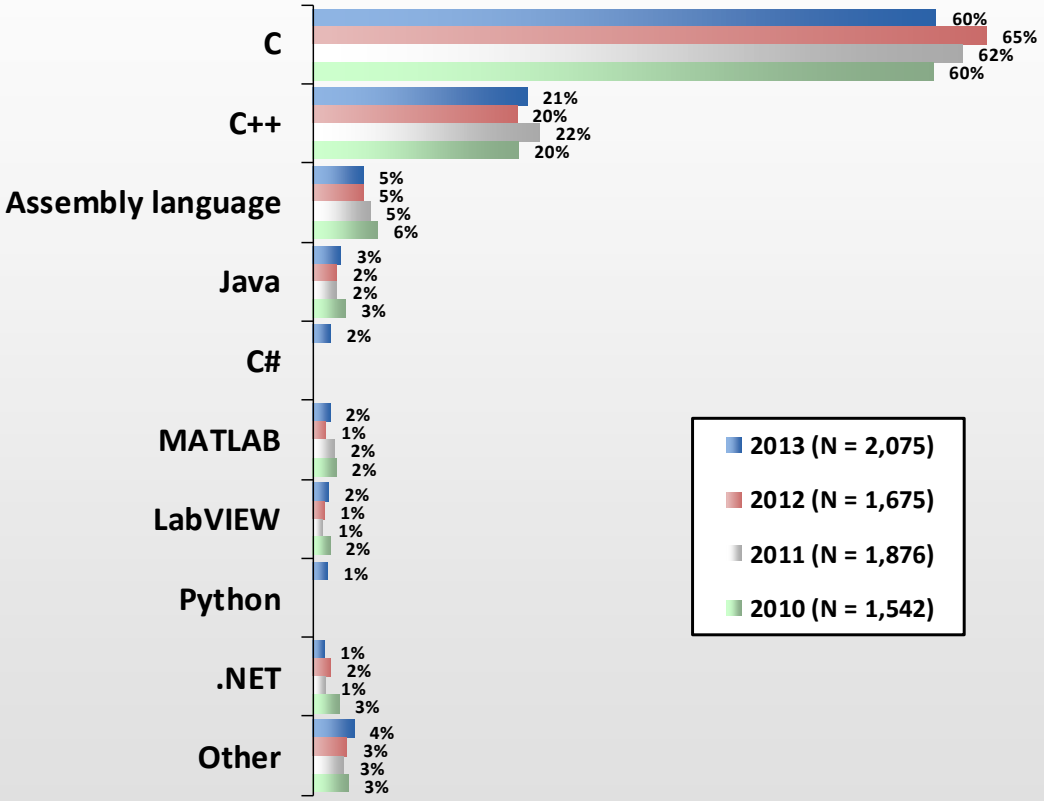
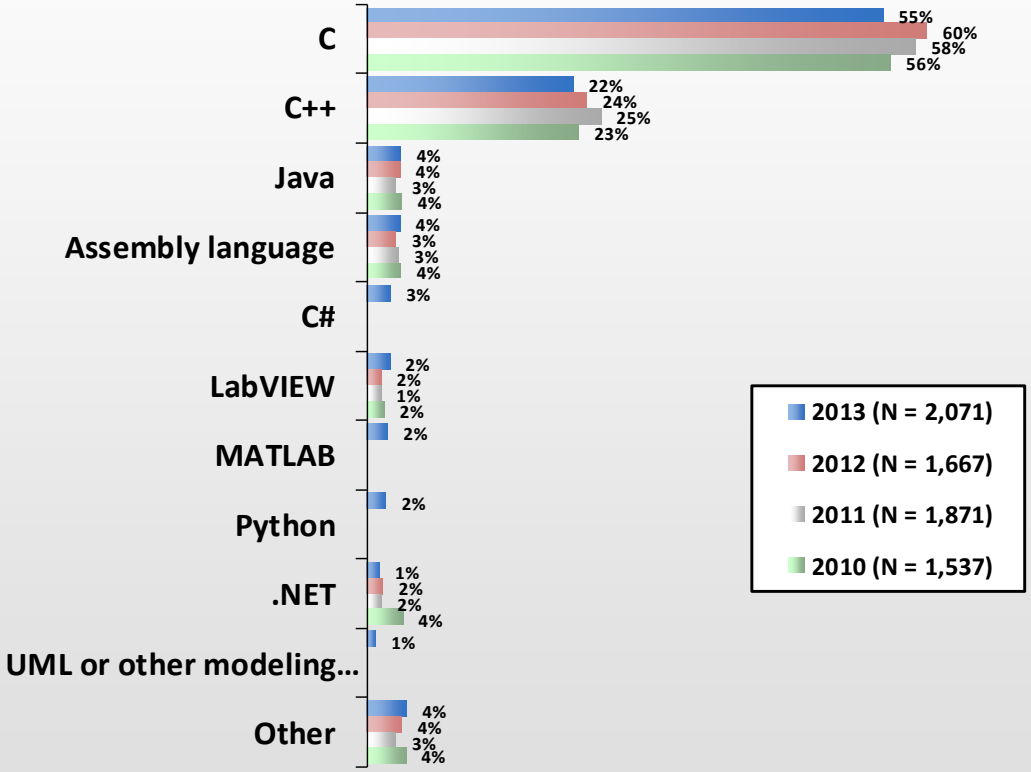
My current embedded project is programmed mostly in:



Note: C#, Python and Ada were added in 2013. Ada was under 1%.

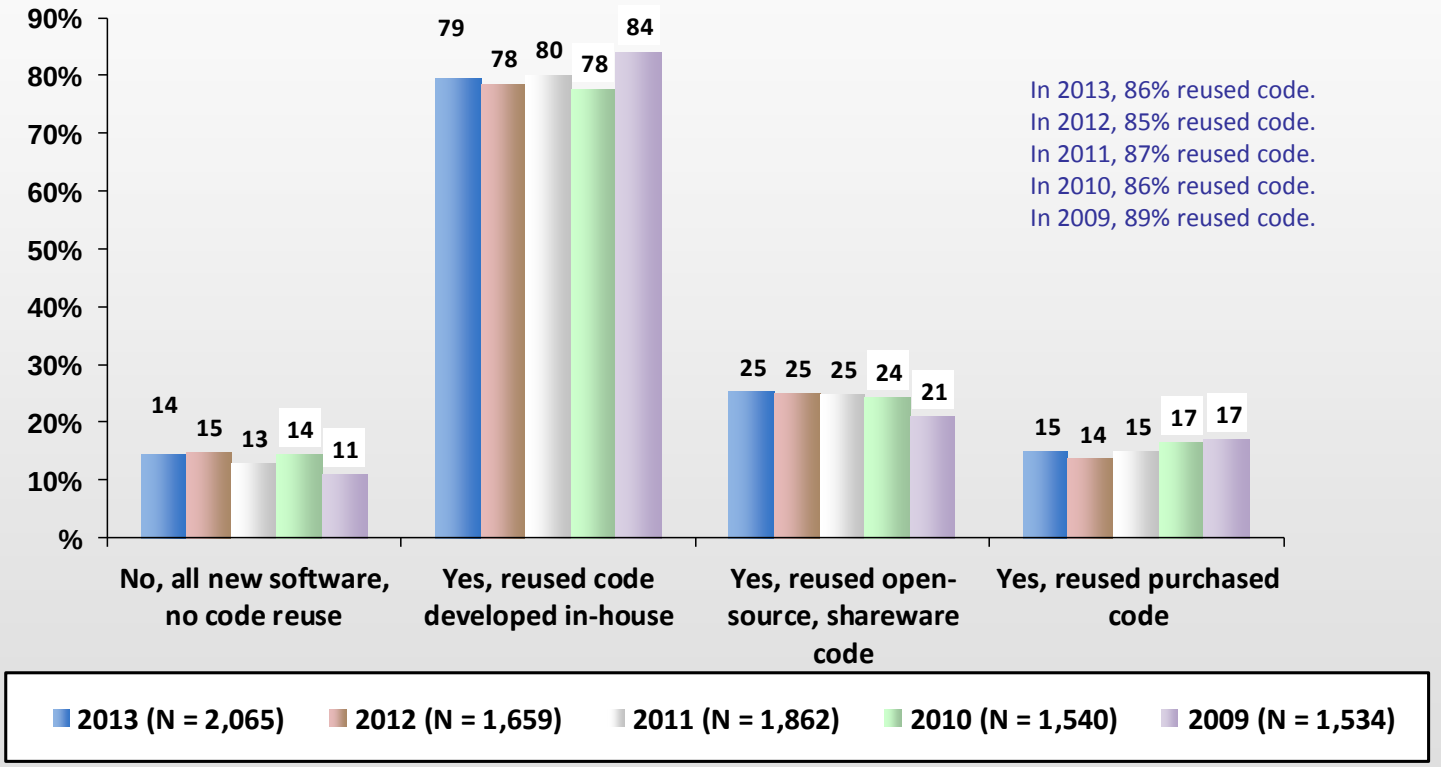
My **next** embedded project will likely be programmed mostly in:



Note: C#, Python and Ada were added in 2013. Ada was under 1%.

Does your current project reuse code from a previous embedded project?

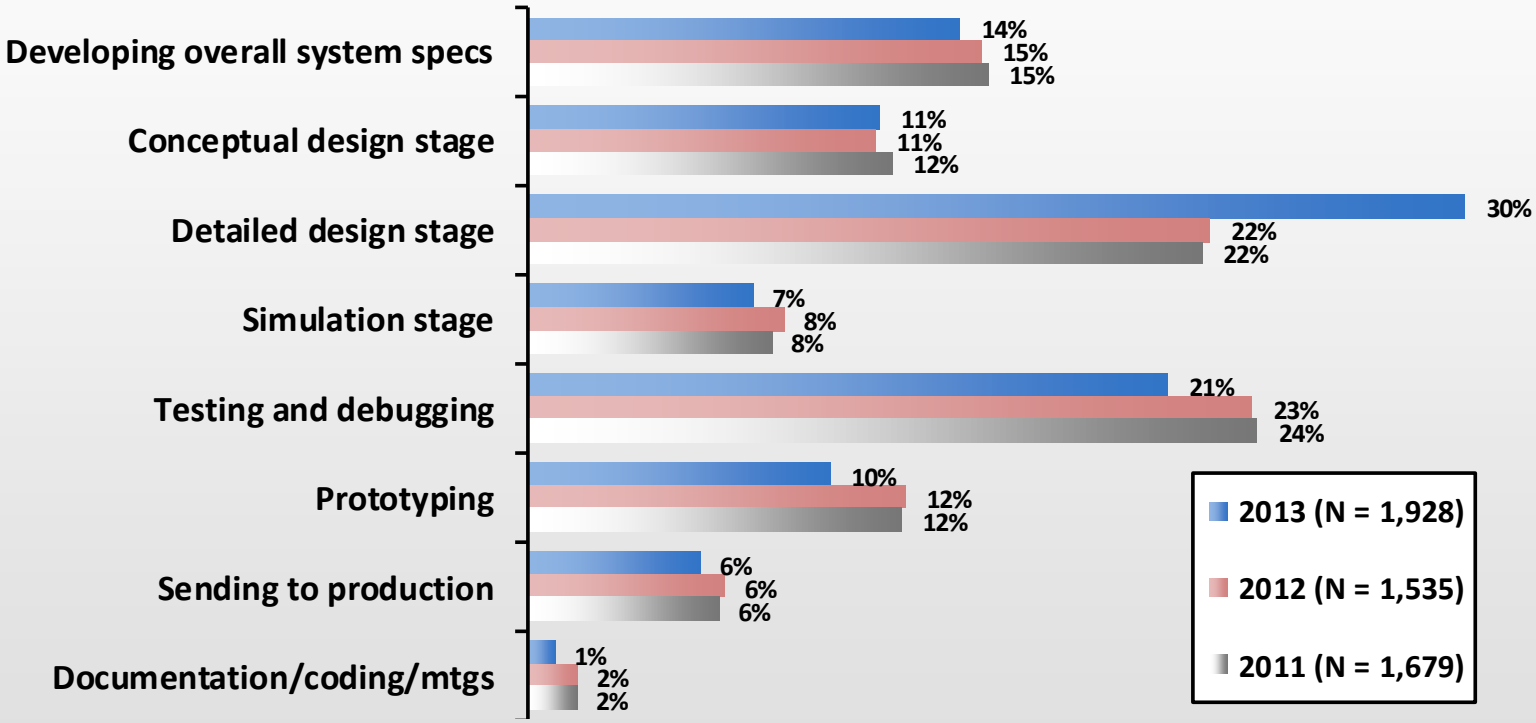
A very slight change in usage of RTOS, kernels, execs, schedulers over past 5 years



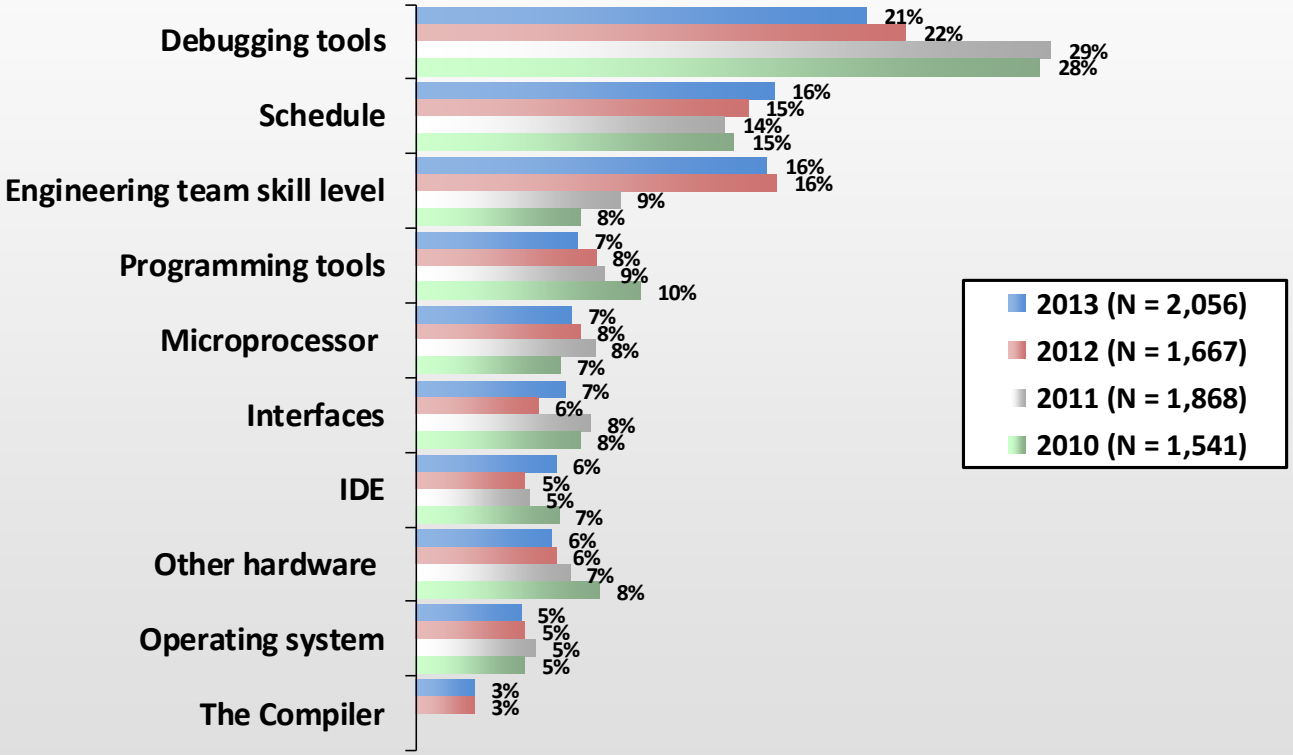
In 2013, 86% reused code.
In 2012, 85% reused code.
In 2011, 87% reused code.
In 2010, 86% reused code.
In 2009, 89% reused code.

EMBEDDED DESIGN PROCESS

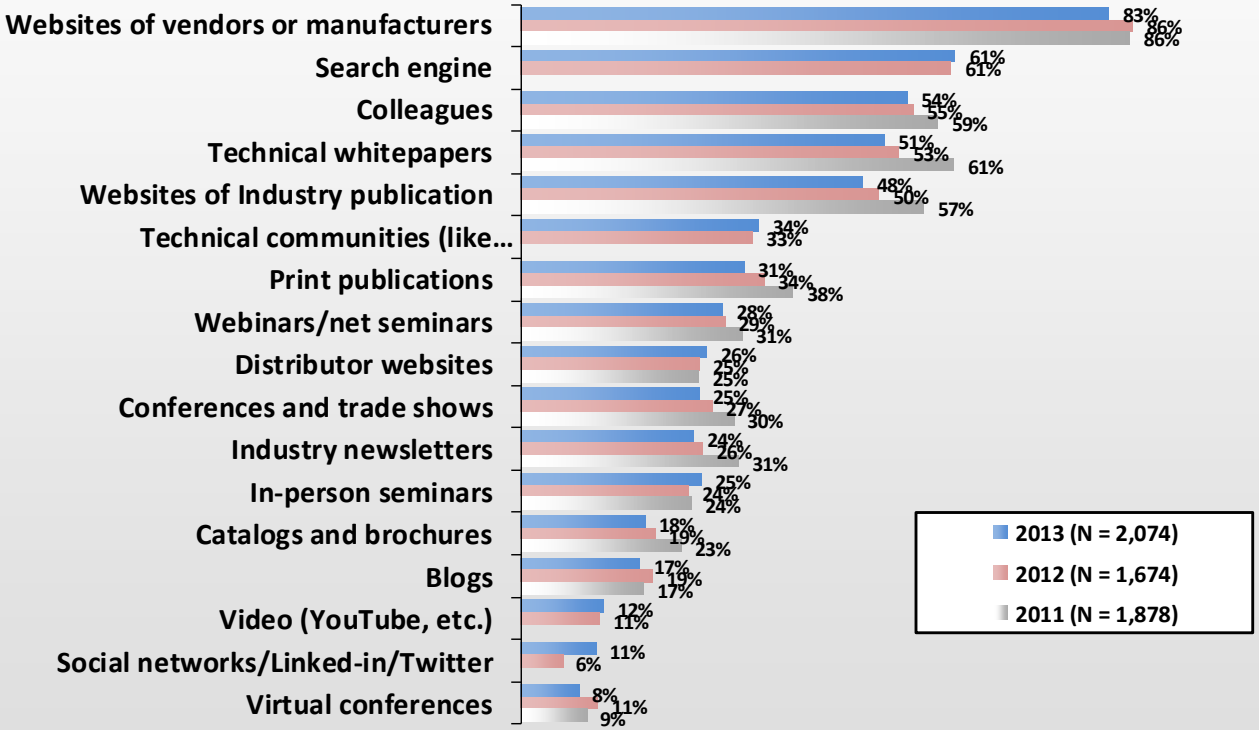
What percentage of your design time is spent on each of the following stages?



If you could improve one thing about your embedded design activities, what would it be?

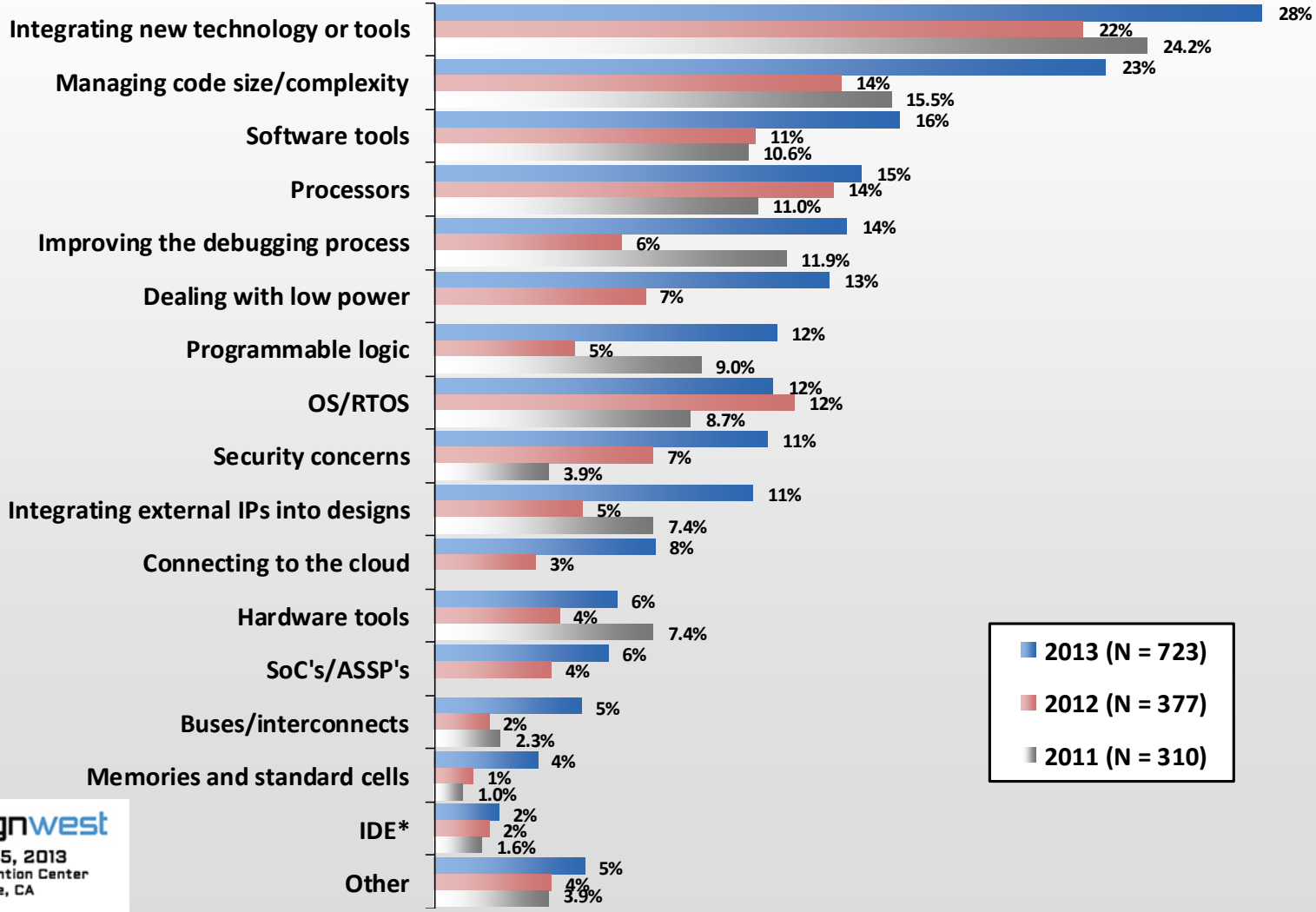


In general, what sources of information do you consult to research your embedded design decisions? Top 17 Sources



Thinking about the next year, what areas will be your greatest technology challenges?

Managers Only



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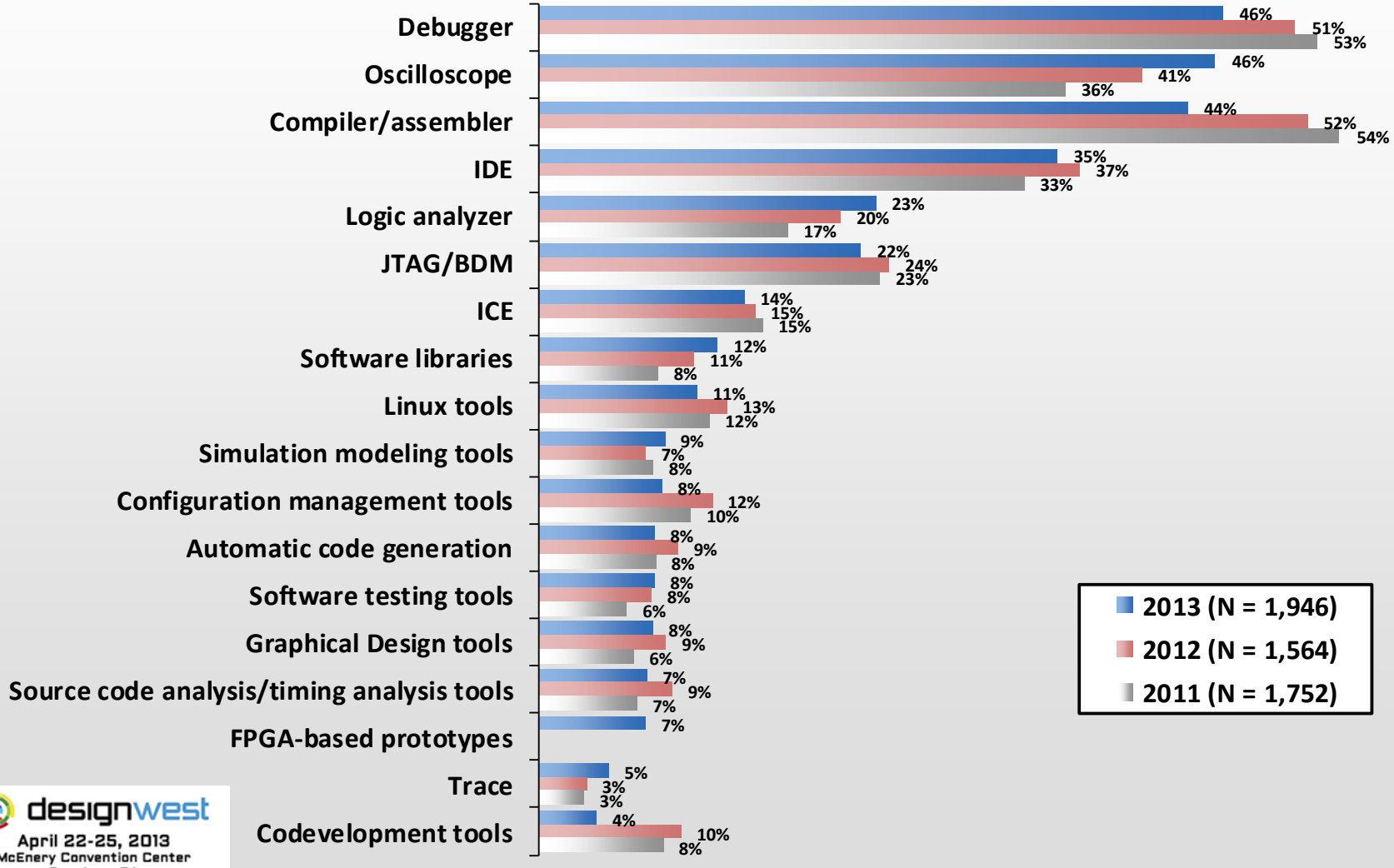
Which of the following are your favorite/most important software/hardware tools? (Top 18 shown)



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Which of the following conferences did you attend in the past 2 years, and which do you plan to next year?

Conferences	2013 Have Attended	2013 Plan to Attend	Plus 4% or more
Training/seminars of distributors	40.3%	35.5%	
DESIGN WEST/Embedded Systems Conference (Silicon Valley)	16.7%	21.6%	+5%
ARM TechCon	16.6%	19.9%	
Freescale Technology Forum	11.0%	14.1%	+4%
DesignCon	10.8%	12.8%	
DESIGN EAST/Embedded Systems Conference (Boston)	10.4%	11.9%	
CES (Las Vegas)	9.9%	14.2%	+4%
Embedded World (Nuremberg)	8.9%	13.1%	+4%
Electronica	8.5%	9.9%	
Real Time Computer Show (RTECC)	8.3%	9.9%	
Microchip MASTERs Conference	7.8%	10.9%	
Intel Developer Forum	7.0%	10.2%	
CeBIT	6.4%	7.3%	
Embedded Systems Conference (India)	6.4%	9.6%	
DAC	4.7%	5.0%	
Embedded Linux Conference (ELC)	4.0%	12.5%	+8%
Convergence: Transportation Electronics	2.1%	3.9%	
Embedded Systems Conference (Brazil)	2.1%	3.9%	
Android Builders Summit	1.6%	9.1%	+8%
Embedded Systems Technology (Japan)	1.4%	4.3%	
Total Attending / Planning to Attend	1,045	1,146	

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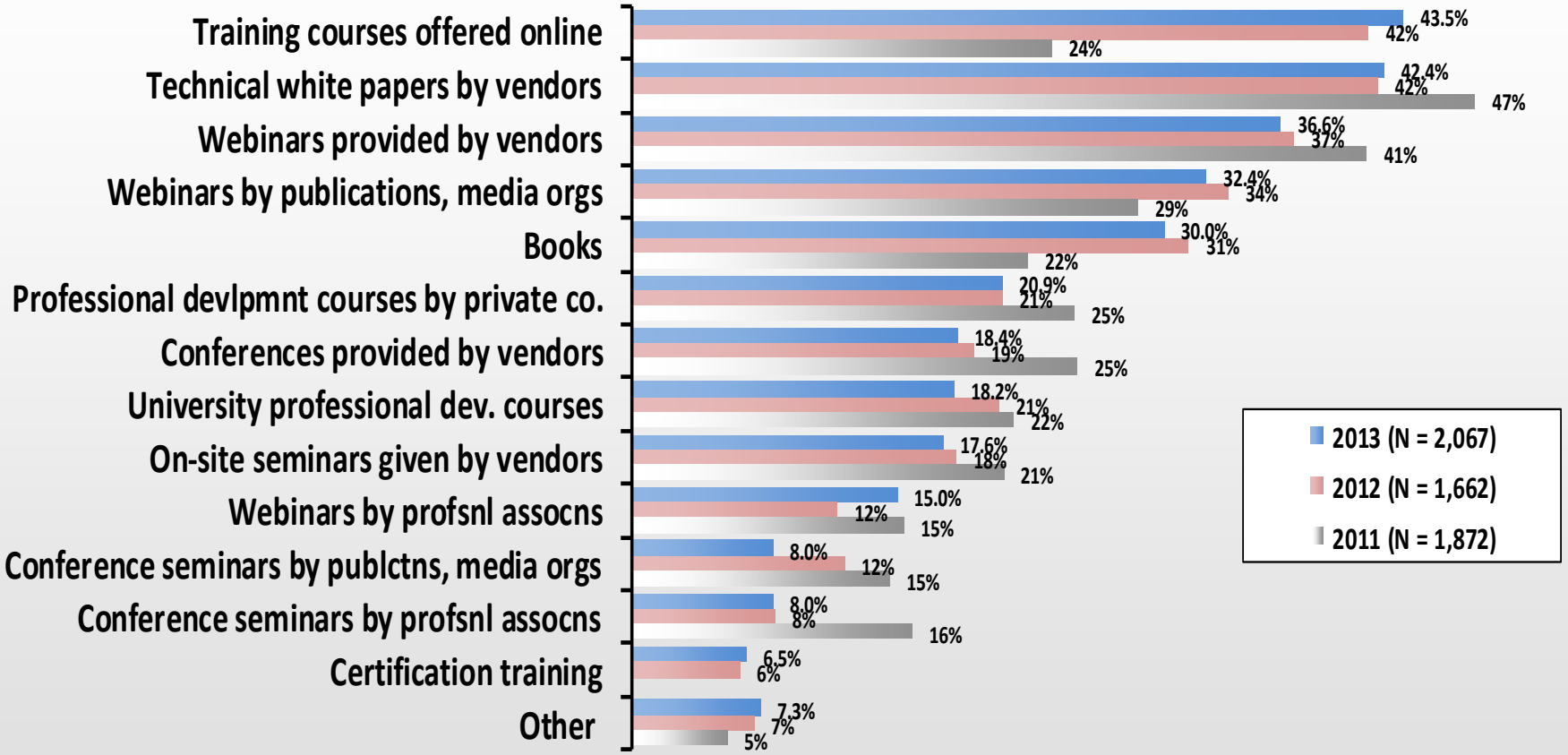
What are the most effective ways that you systematically or formally maintain, educate, and advance your professional skills?



Average Number of Days Per Year Spent on Training

2013 = 9.0 days per year
2012 = 11.7 days per year
2011 = 11.2 days per year
2010 = 11.7 days per year

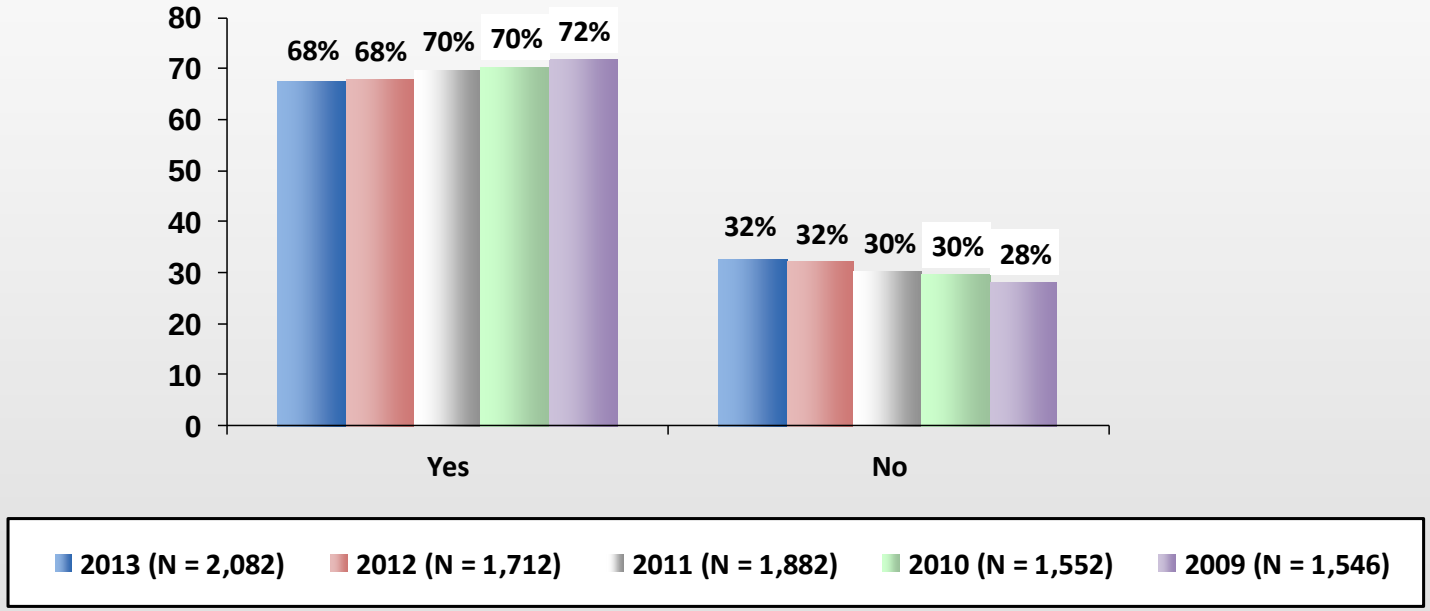
Other Relevant Schooling and Reading

2013 Average number of years out of school	19.7
2013 Hours per week reading technical pubs	4.8
2013 Books per year read in full or substantially	3.9

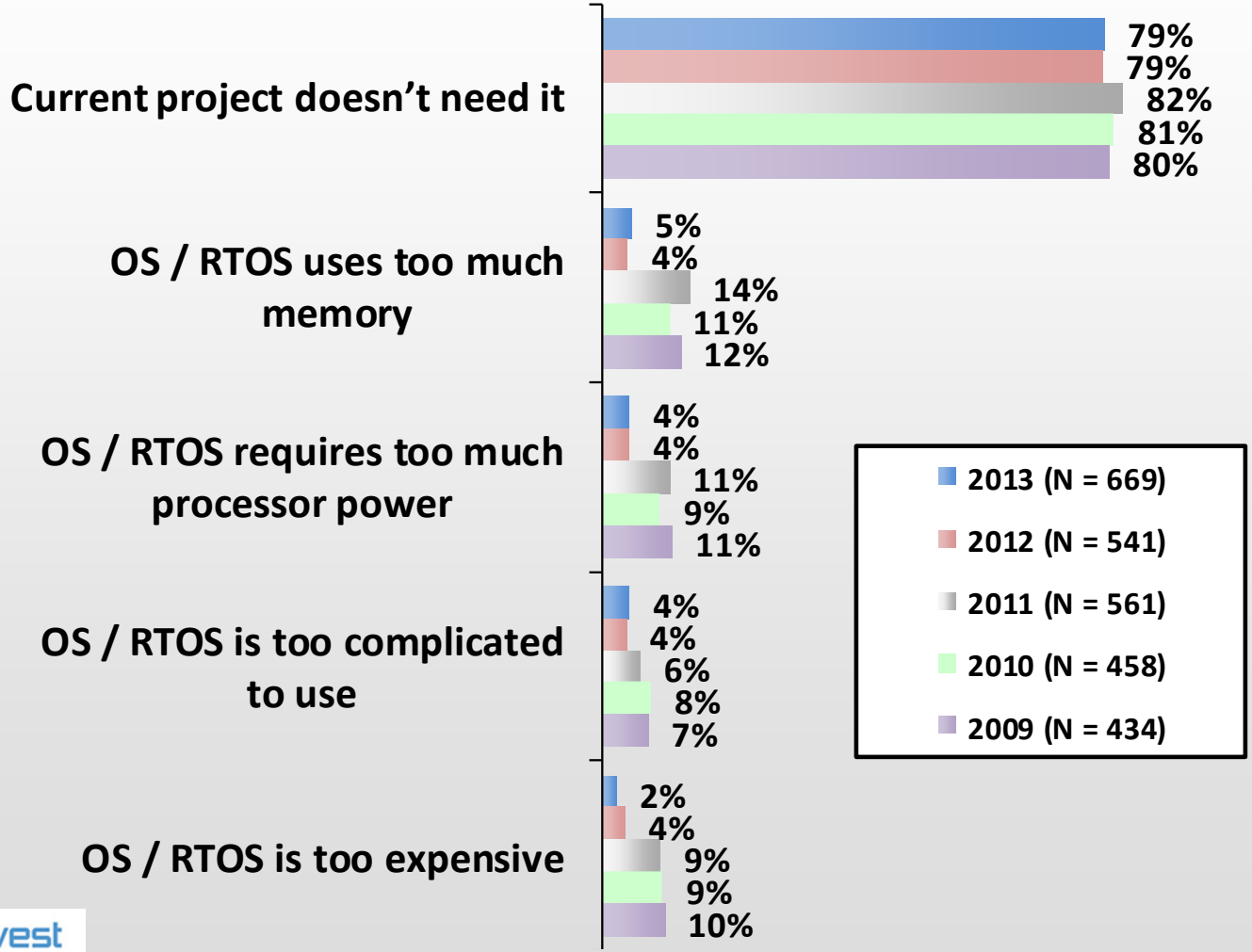
OPERATING SYSTEMS

Does your current embedded project use an operating system, RTOS, kernel, software executive, or scheduler of any kind?

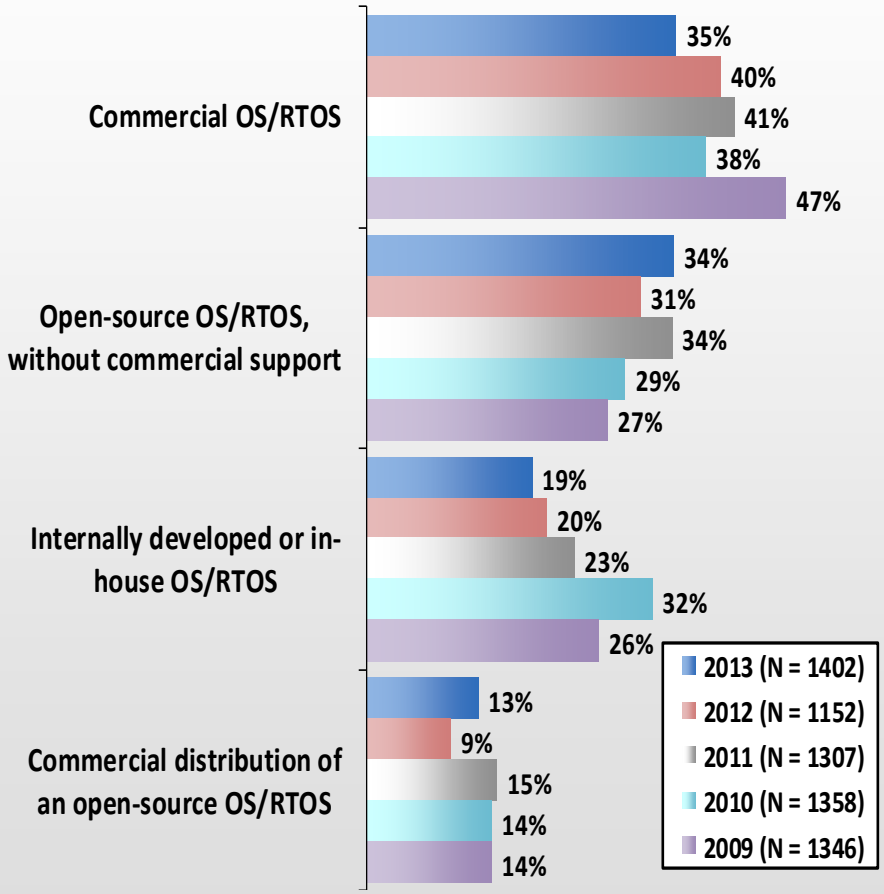
Only slight changes in usage of RTOS, kernels, execs, schedulers over past 5 years



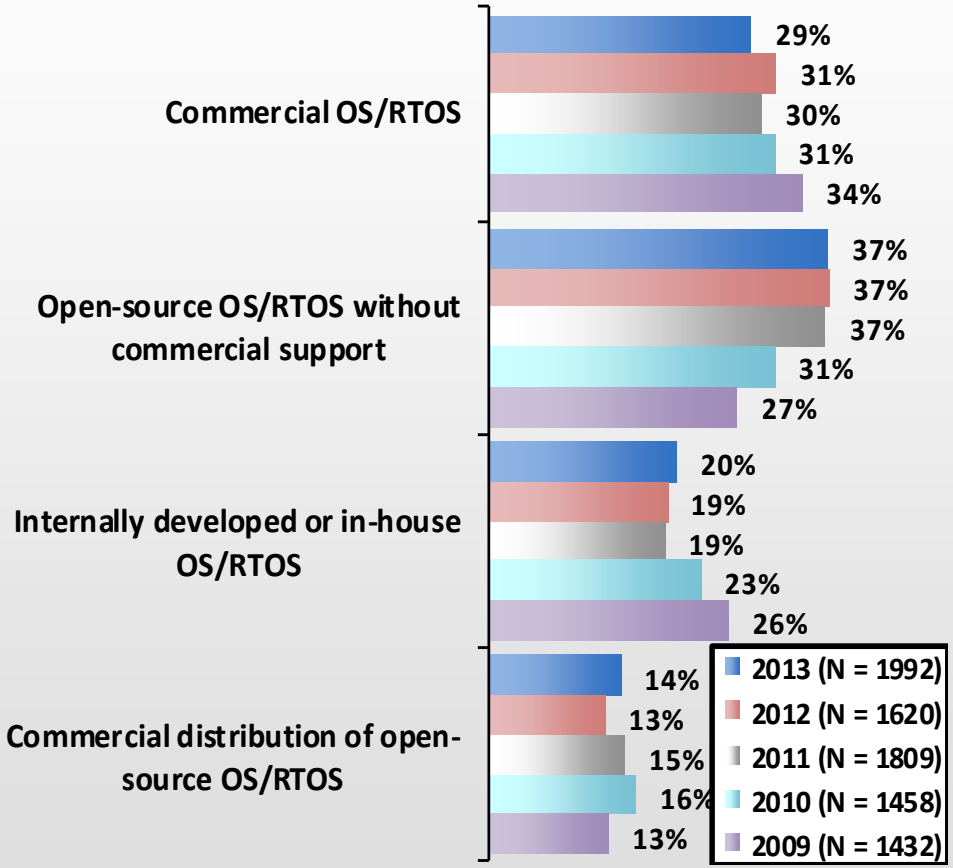
If current embedded project does not use an operating system, RTOS, kernel, software executive, or scheduler of any kind, why not?



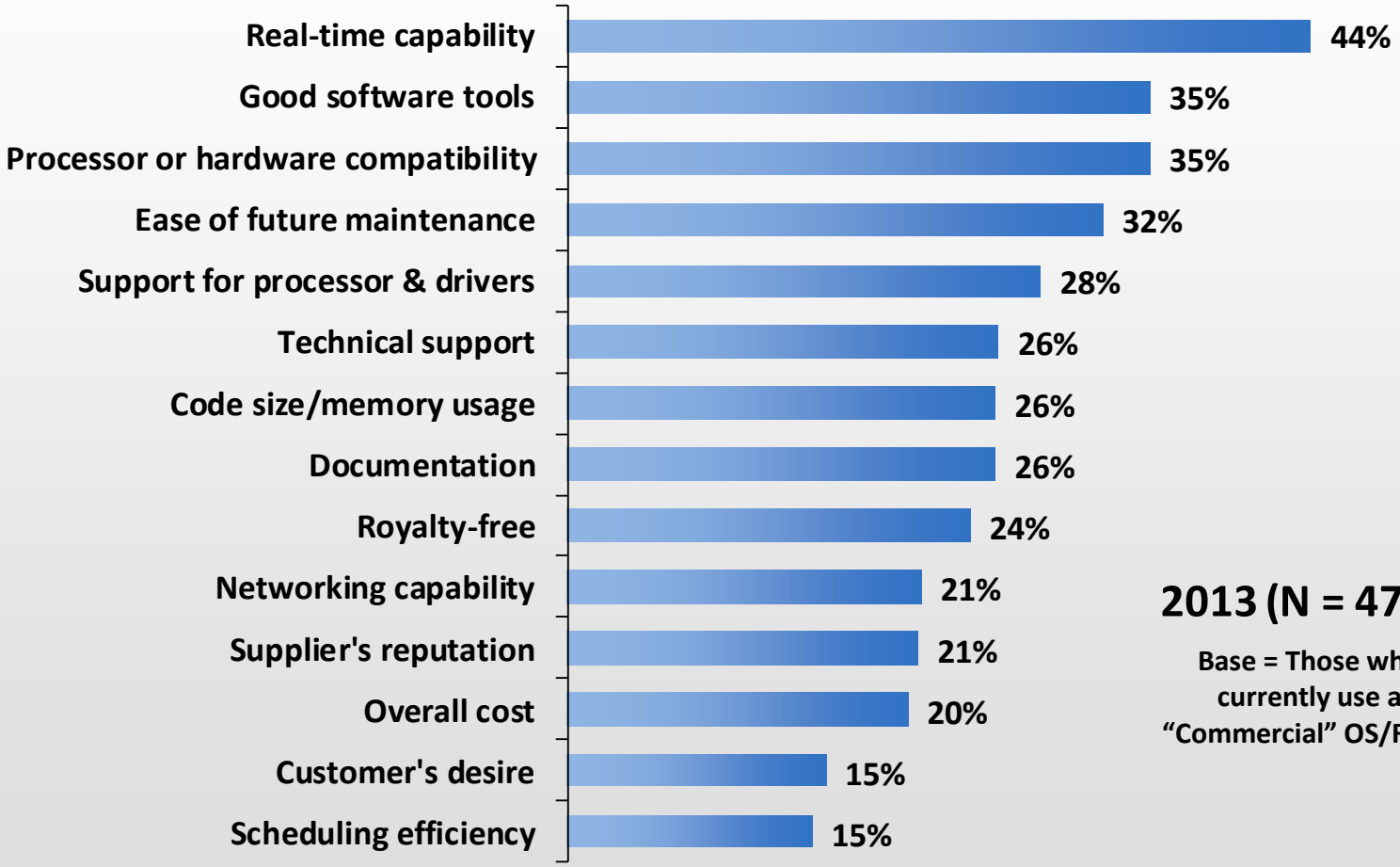
My current embedded project uses:



My next embedded project will likely use:



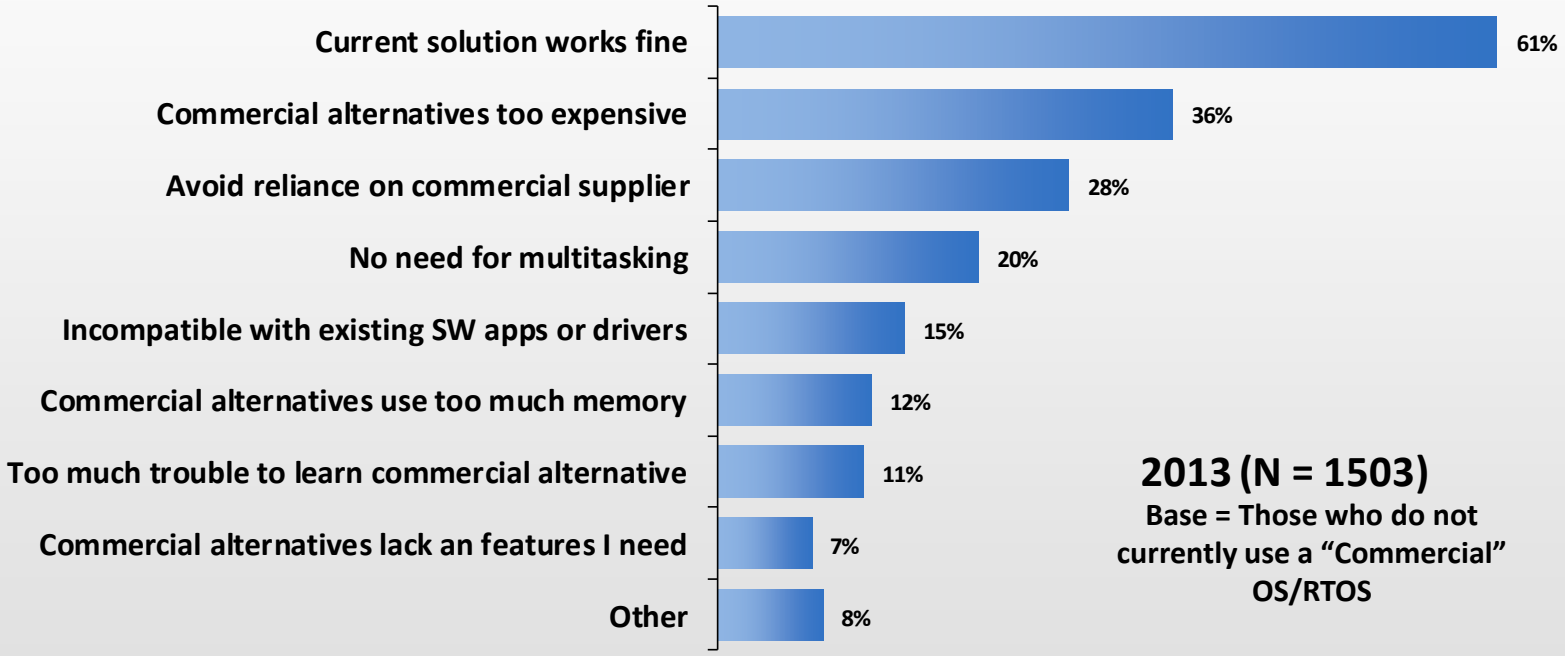
Which factors most influenced your decision to use a commercial operating system? (Top 12 choices.)



2013 (N = 479)

Base = Those who currently use a "Commercial" OS/RTOS

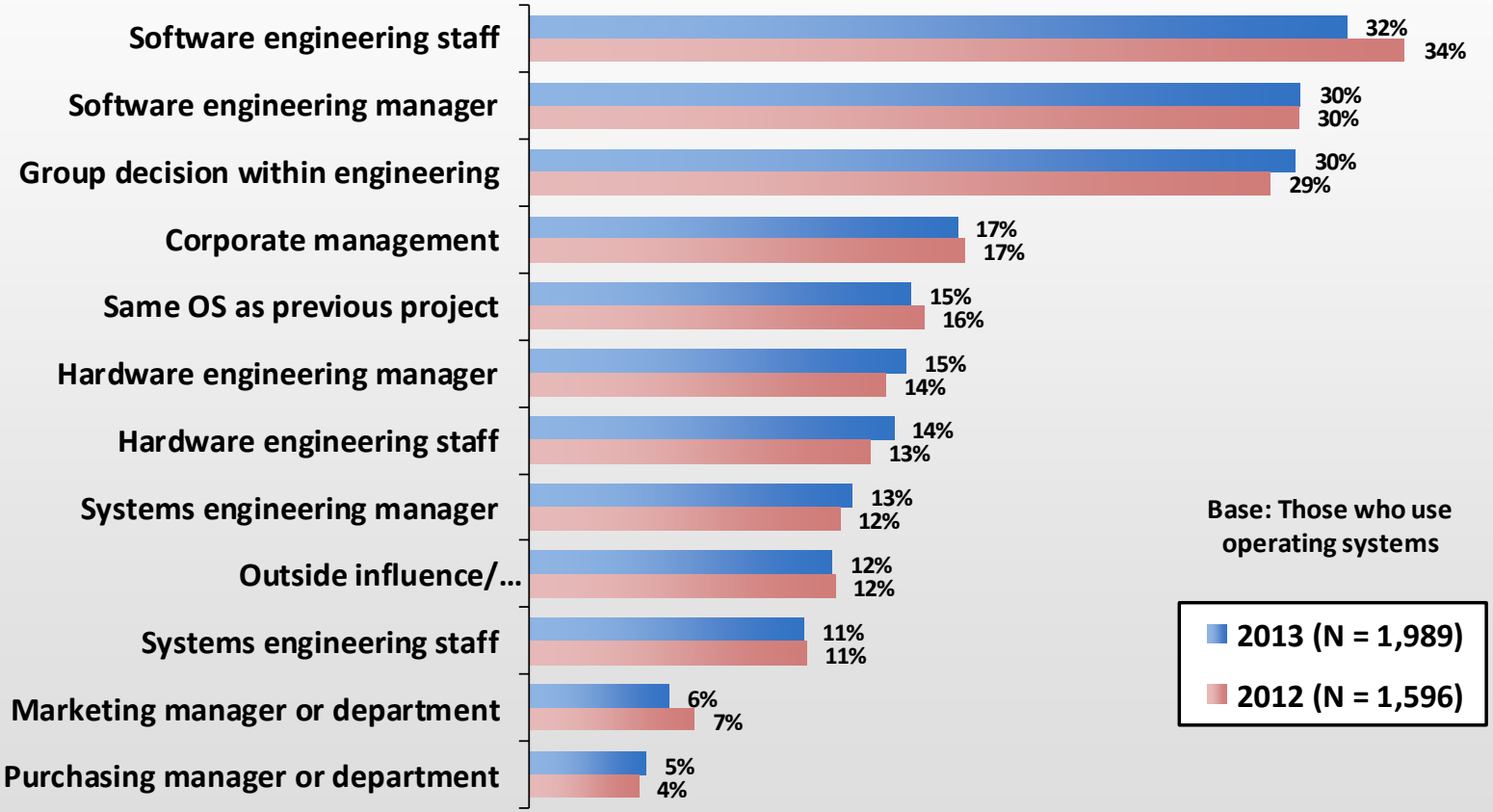
What are your reasons for not using a commercial operating system?



2013 (N = 1503)

Base = Those who do not currently use a "Commercial" OS/RTOS

Who were the greatest influences on the choice of operating system?



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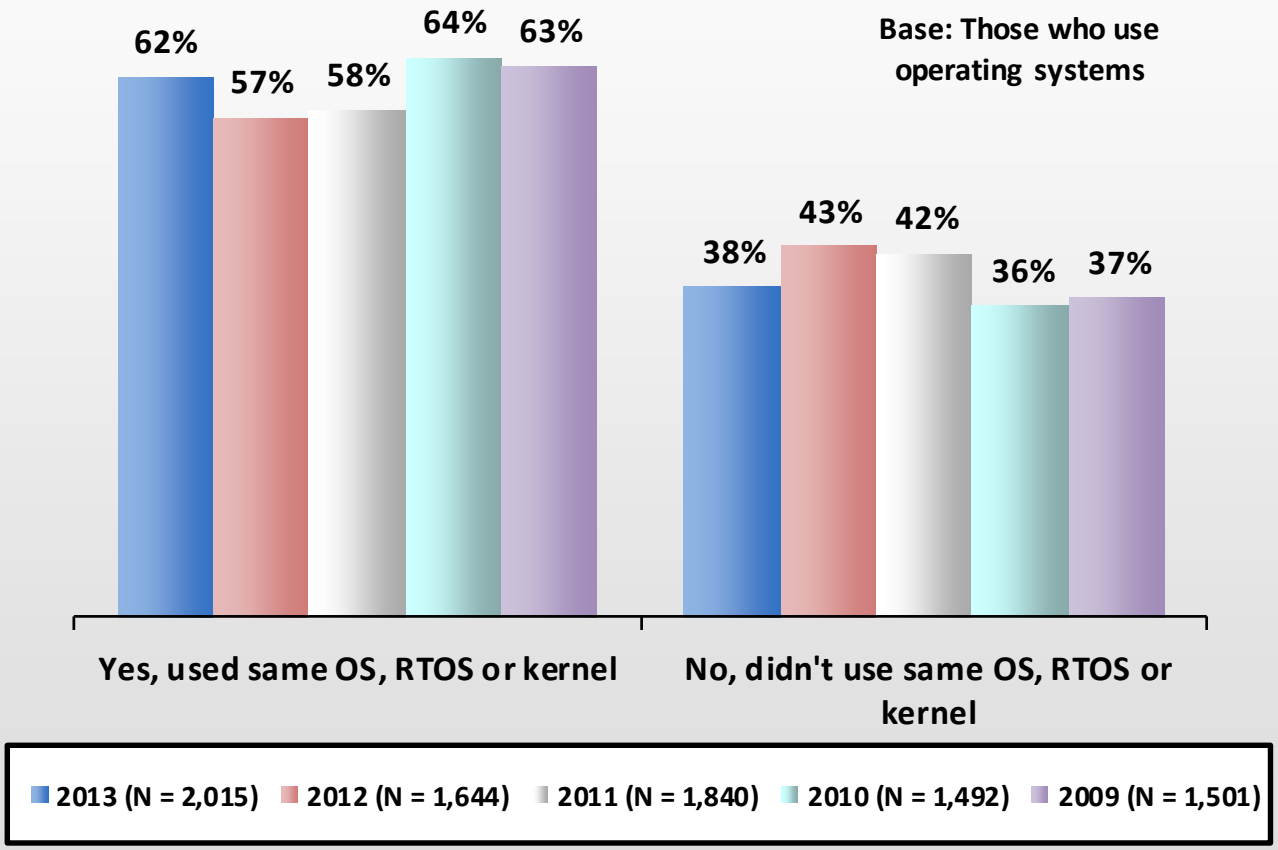
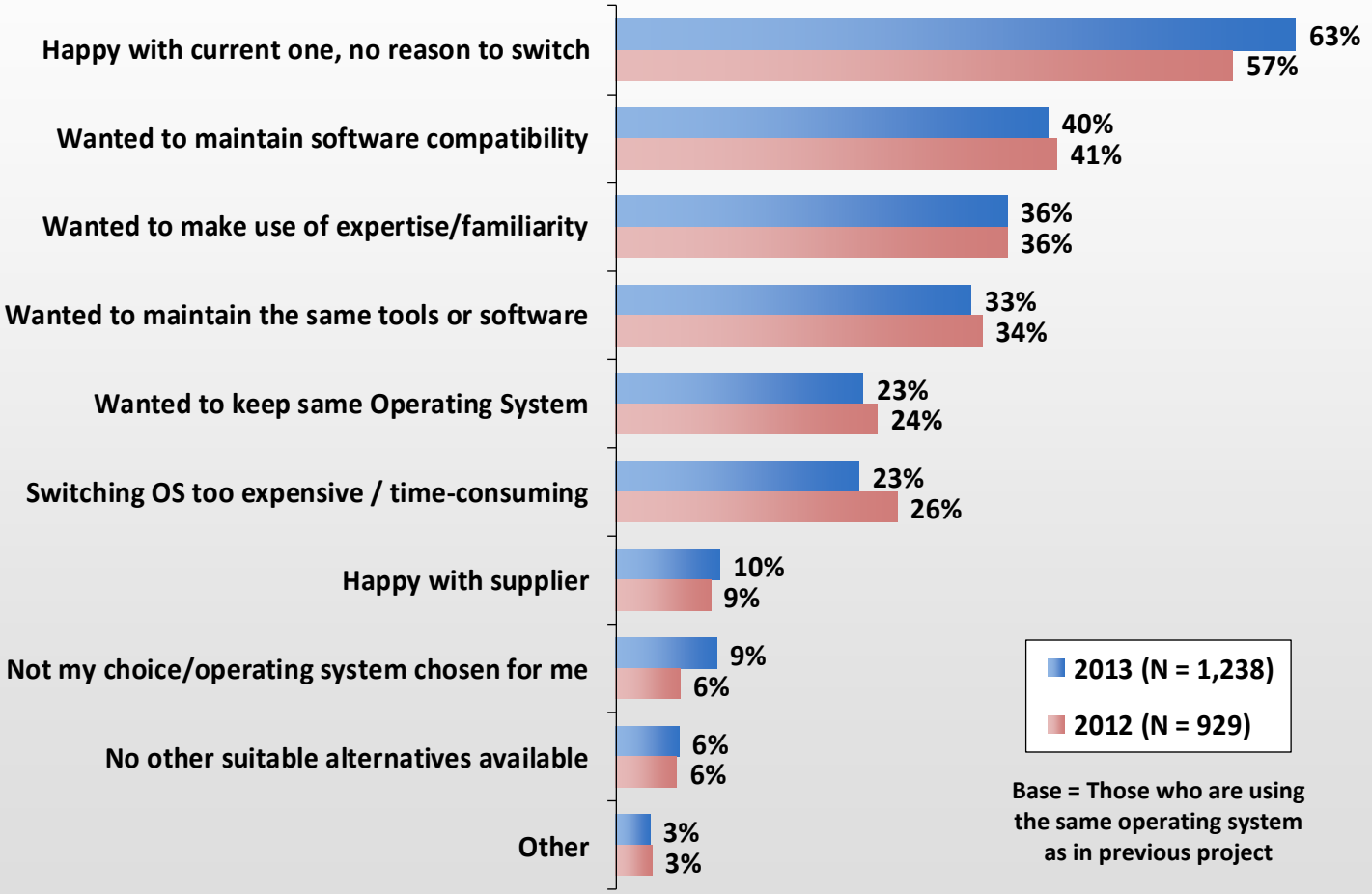
Did you use the same operating system, RTOS, or kernel as in your previous project?



Why did you use the same operating system?



Base = Those who are using the same operating system as in previous project

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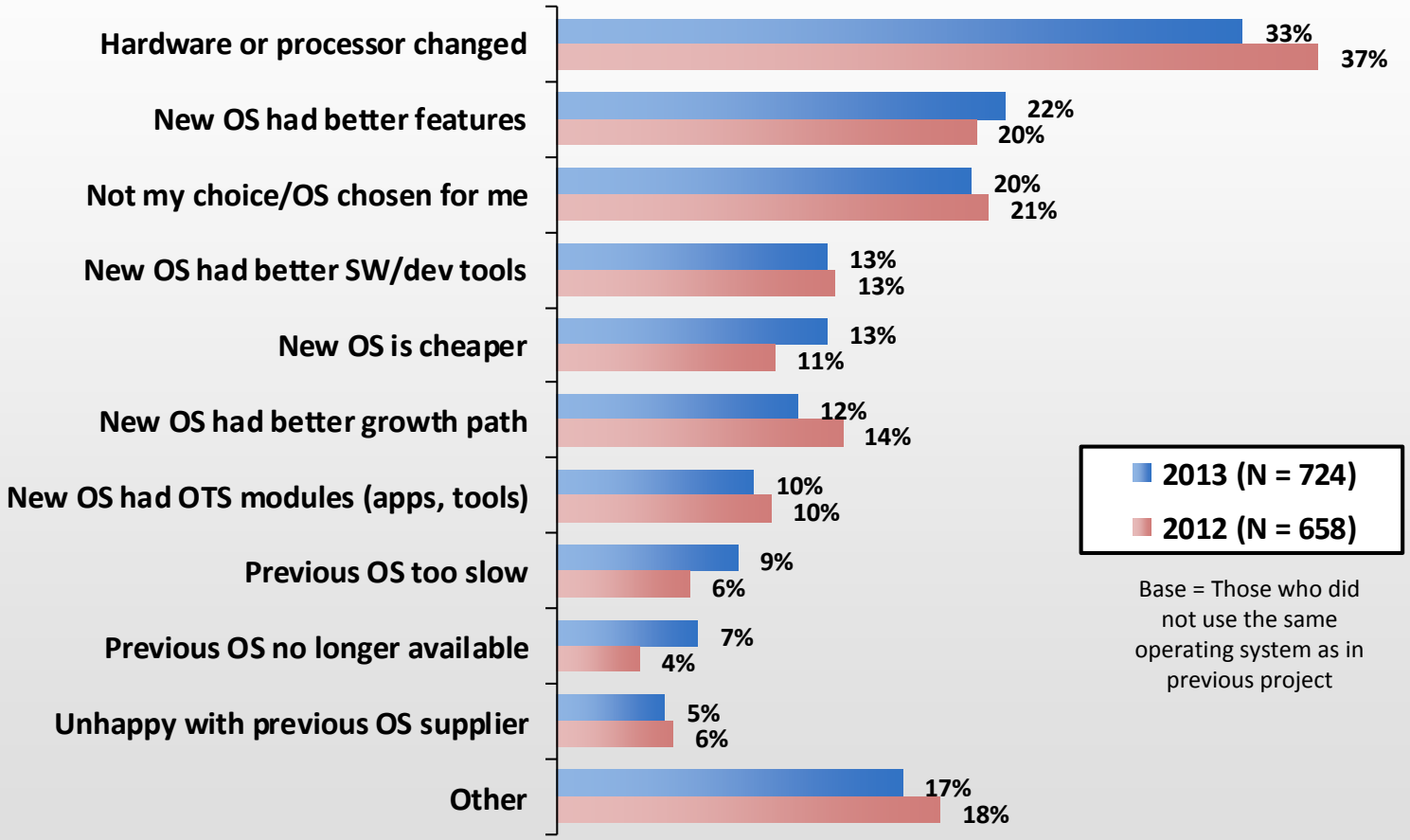
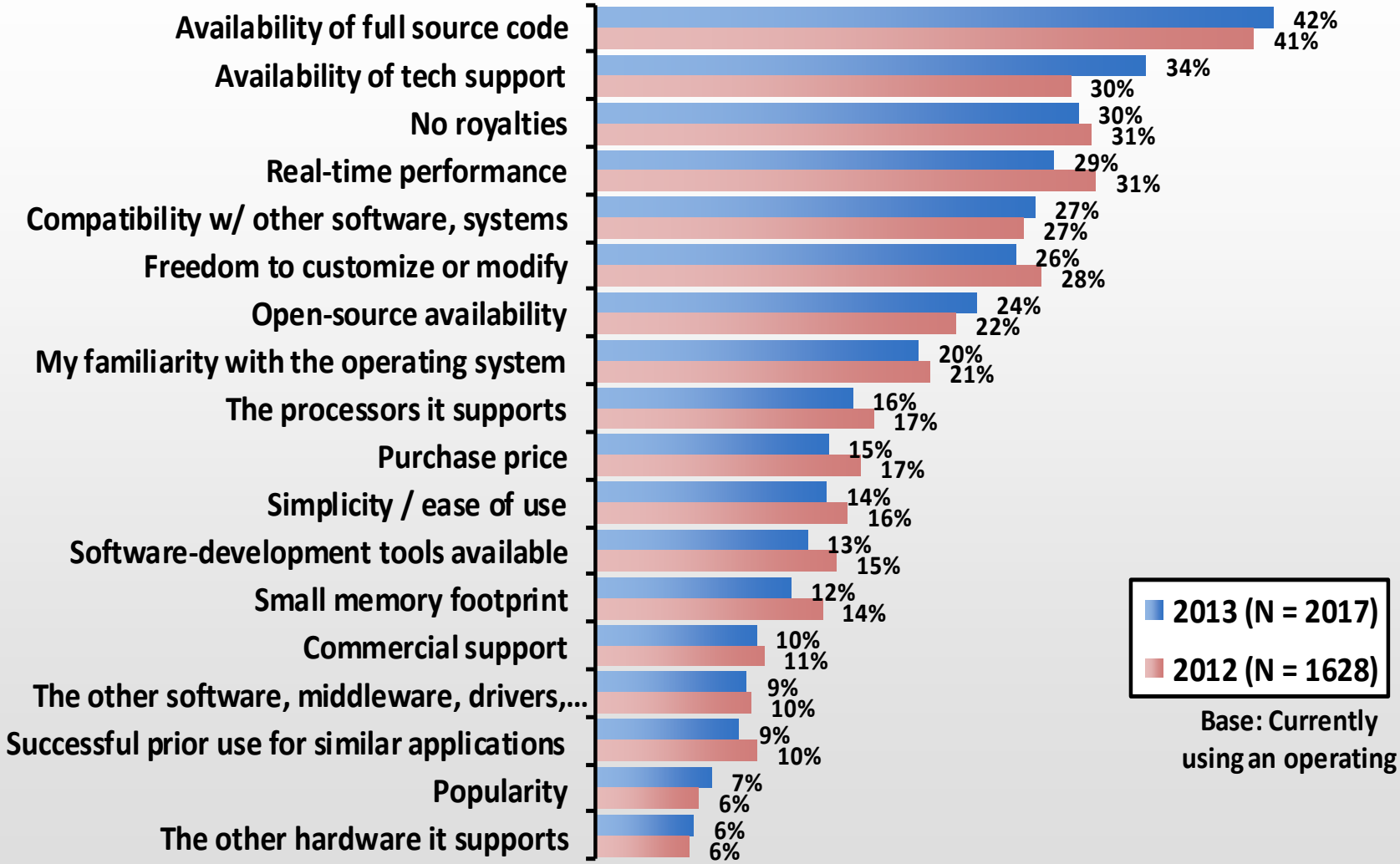
Why did you switch operating systems?

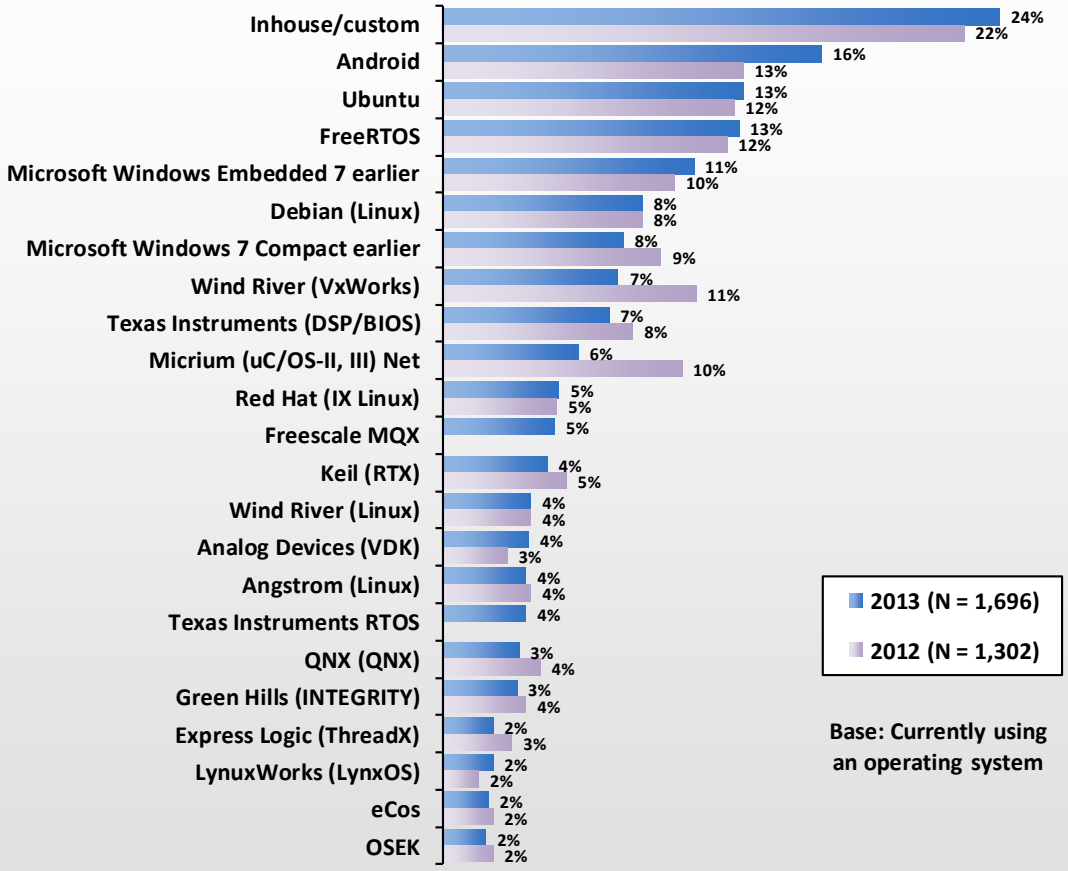


Base = Those who did not use the same operating system as in previous project

What are the most important factors in choosing an operating system.

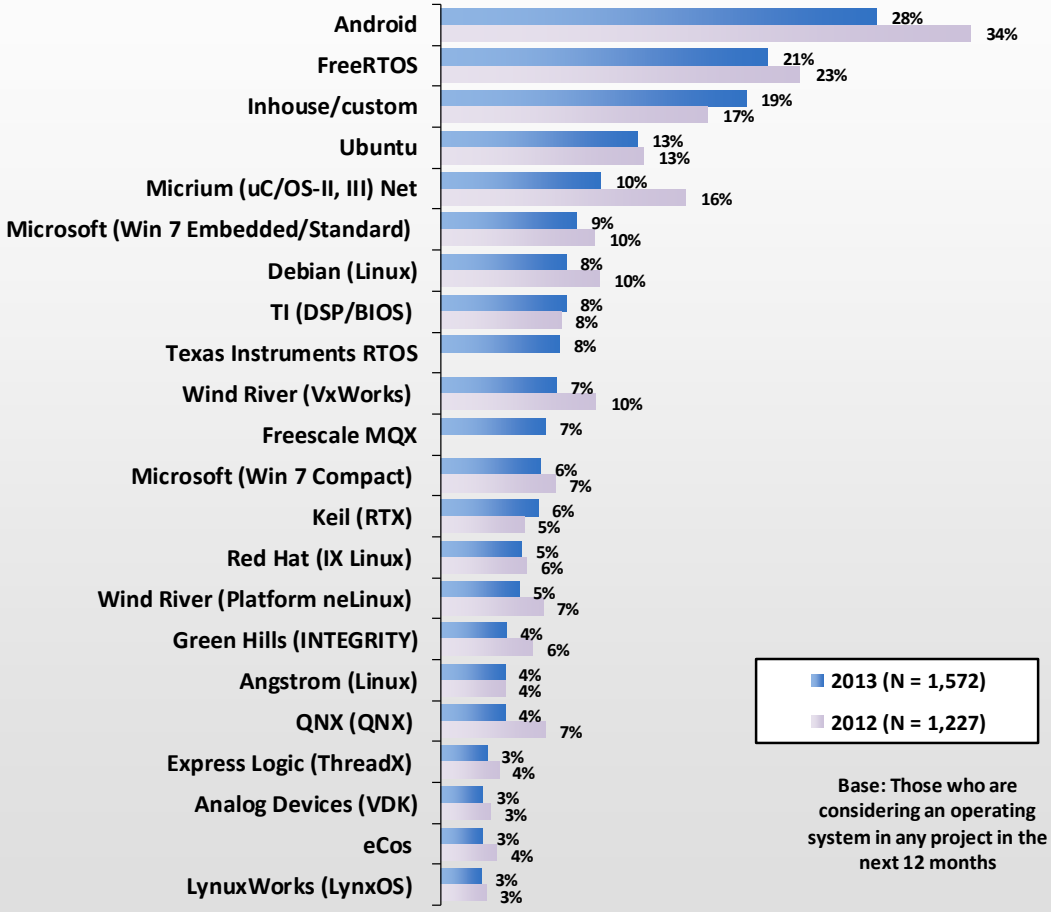


Please select ALL of the operating systems you are currently using.



Only Operating Systems that had 2% or more are shown.

Please select ALL of the operating systems you are considering using in the next 12 months.



Base: Those who are considering an operating system in any project in the next 12 months

Only Operating Systems over 3% are shown.

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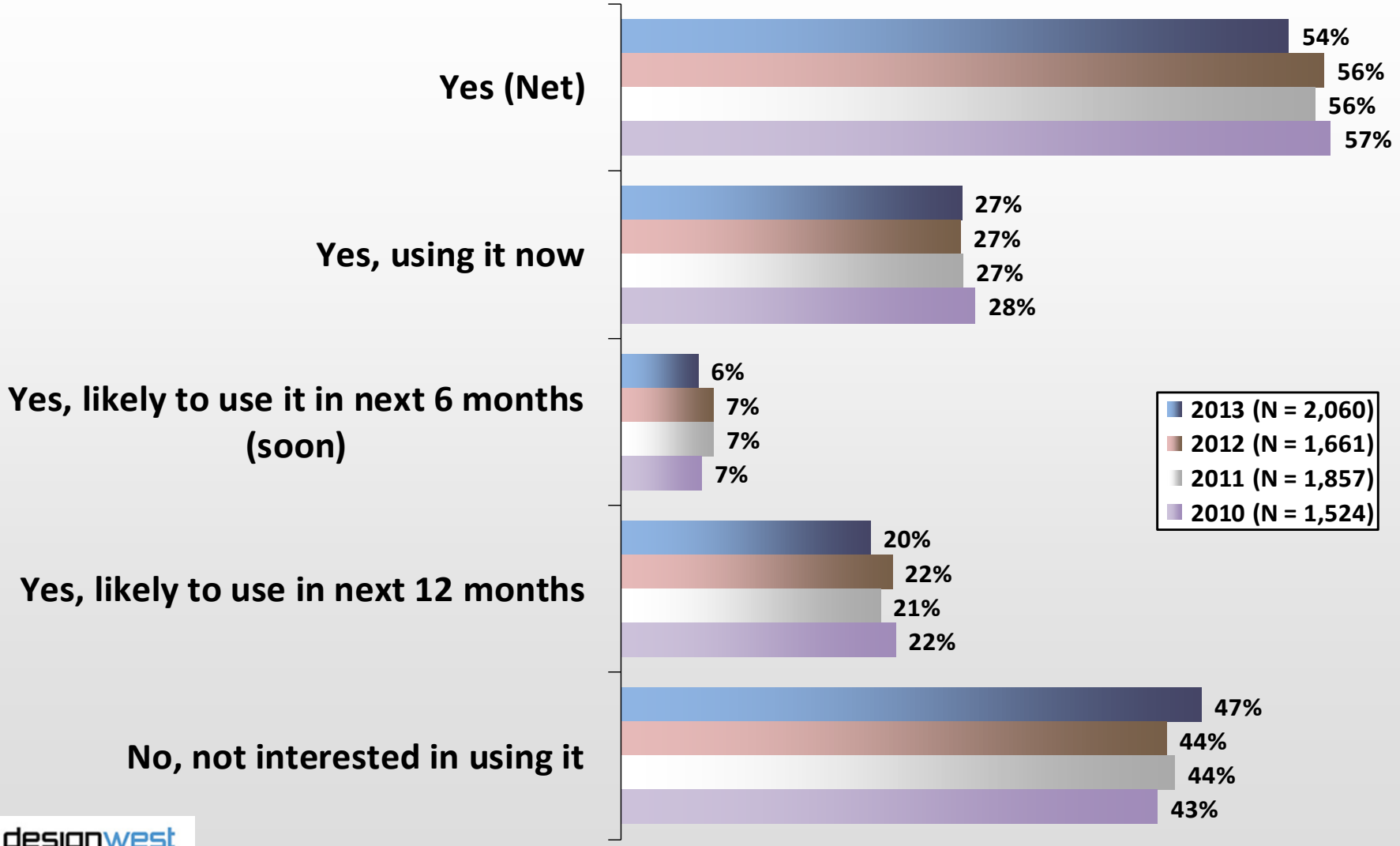
Are you considering using embedded Linux?



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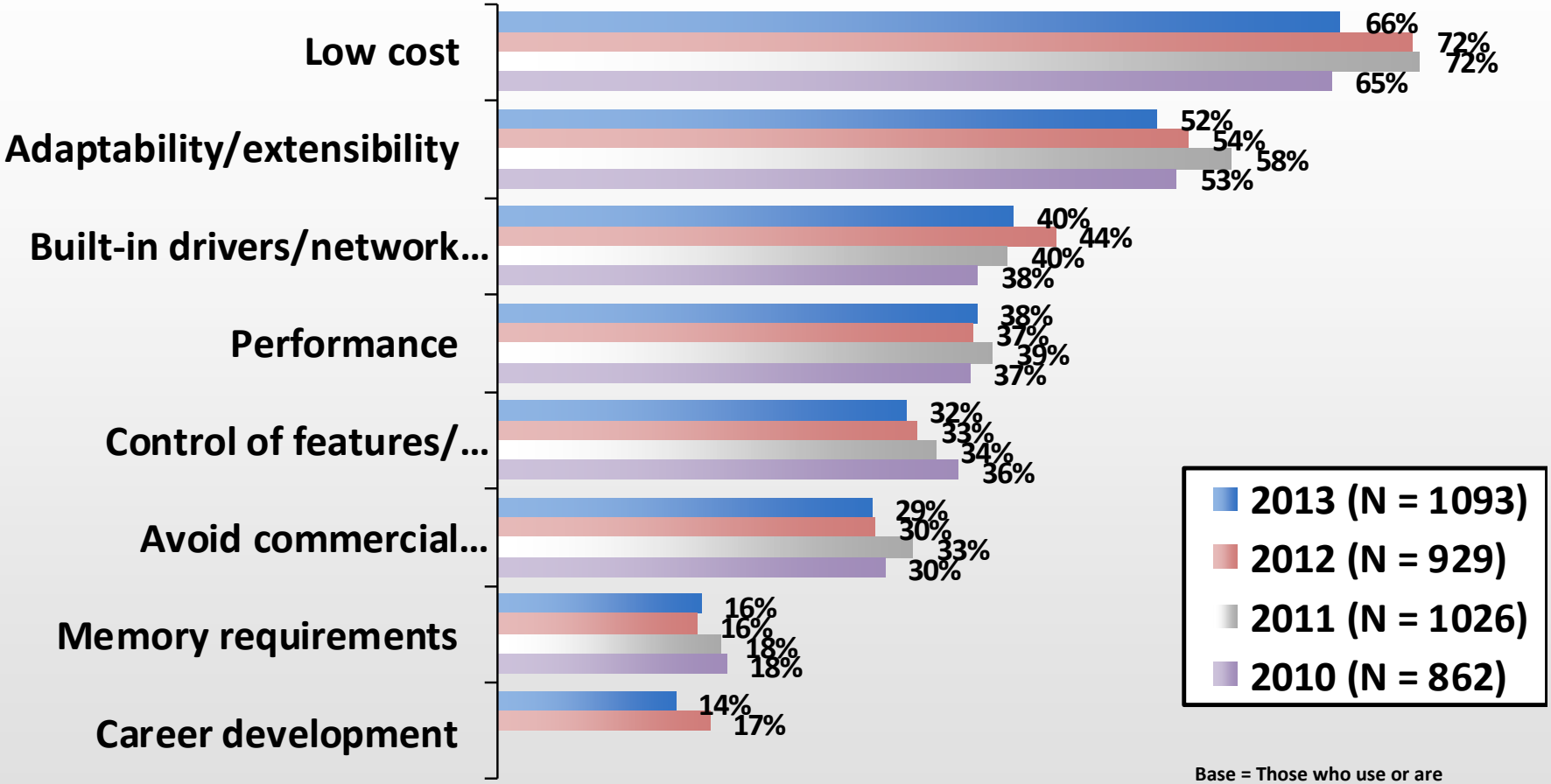
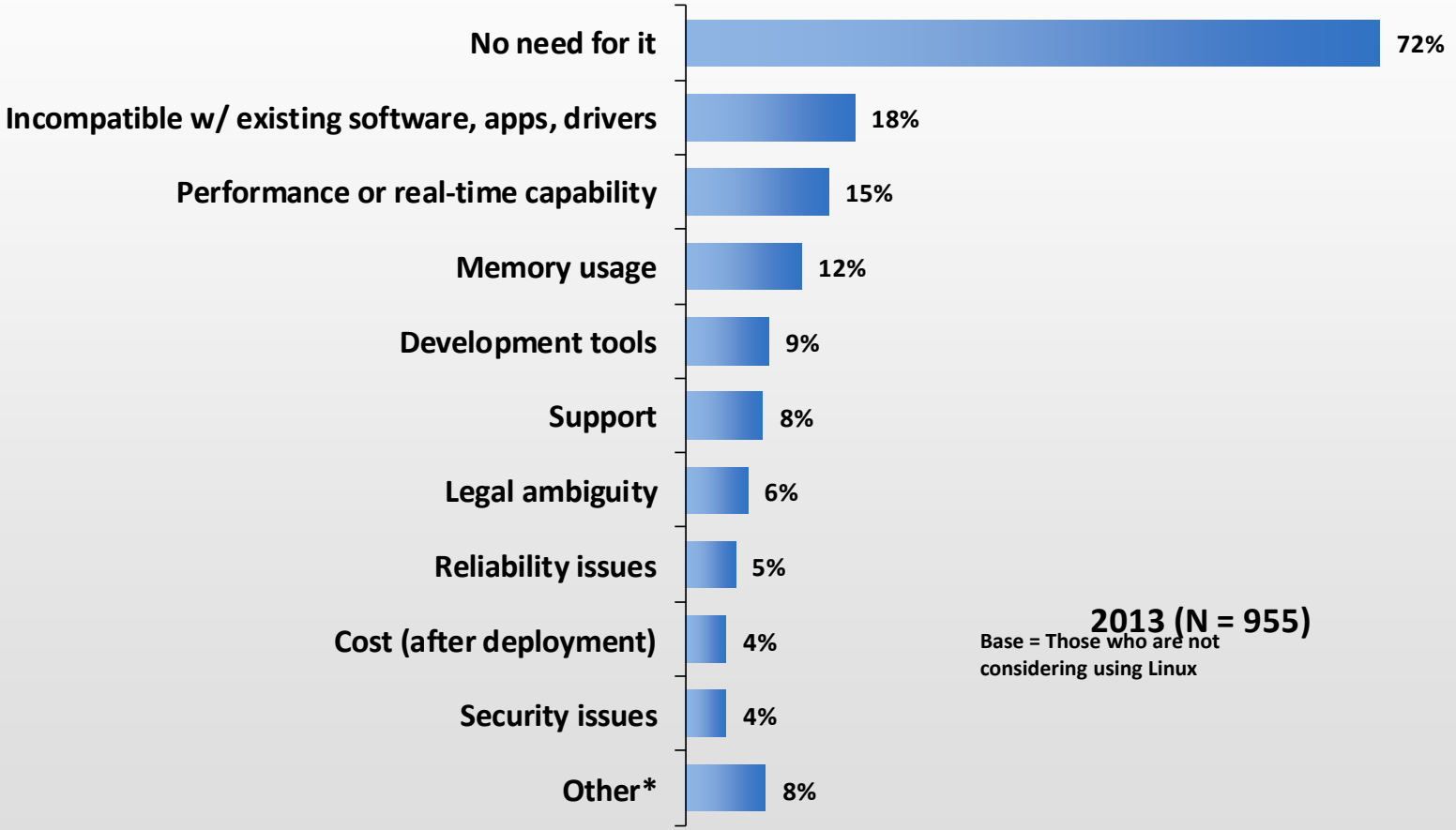
Why are you interested in embedded Linux?



Base = Those who use or are considering using Linux

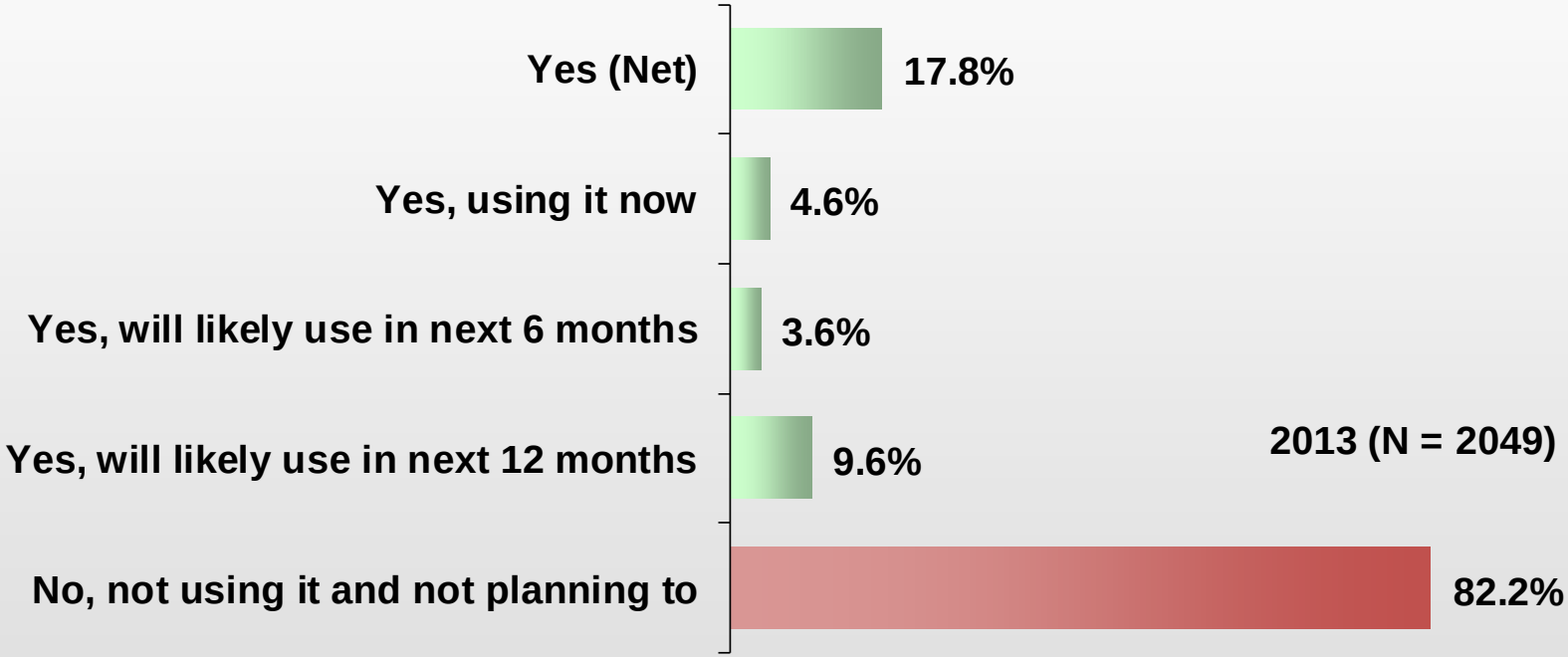
Why are you not interested in embedded Linux?



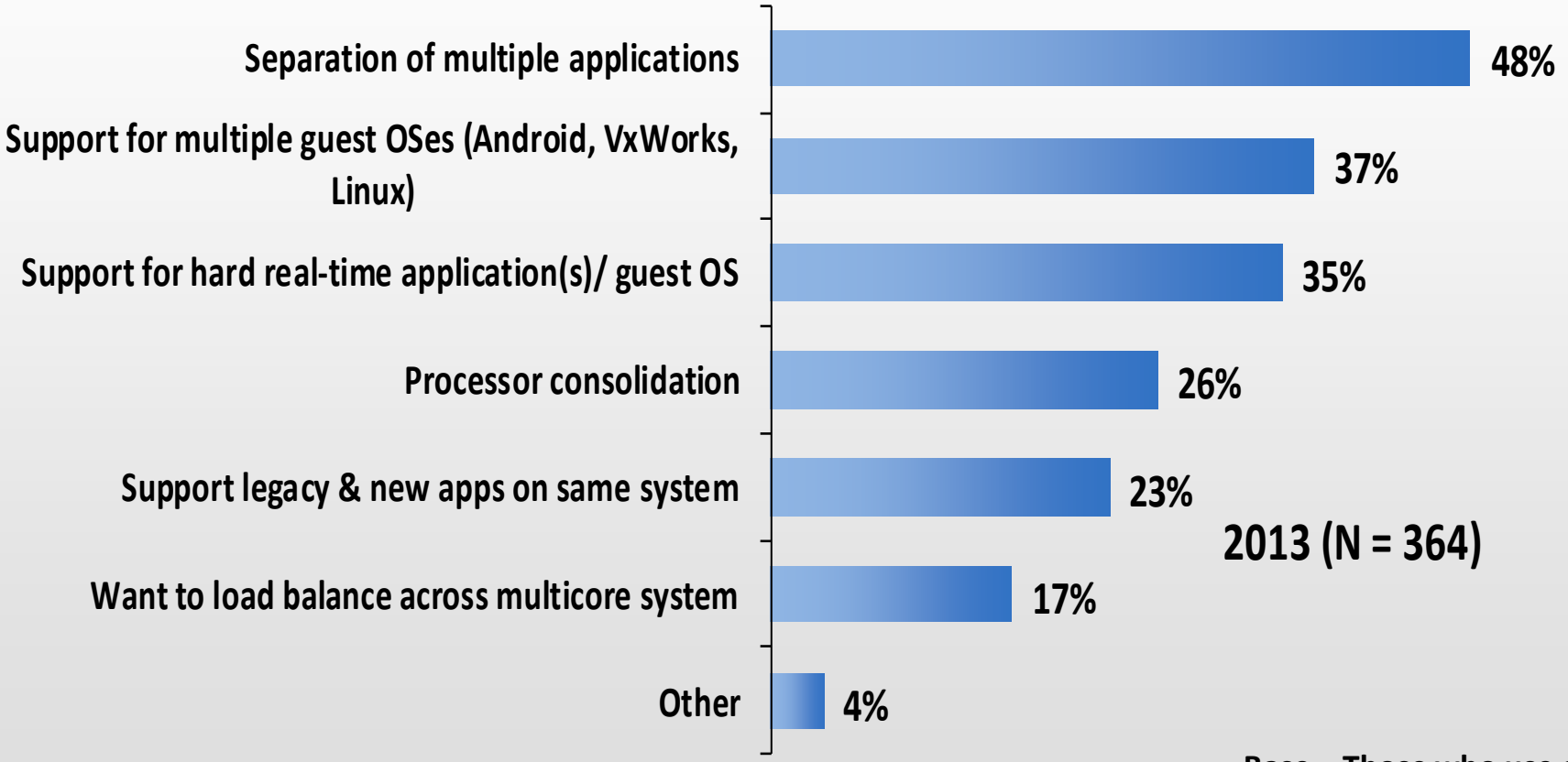
2013 (N = 955)

Base = Those who are not considering using Linux

Are you currently using embedded virtualization/hypervisors or will you likely use this in the next 12 months?



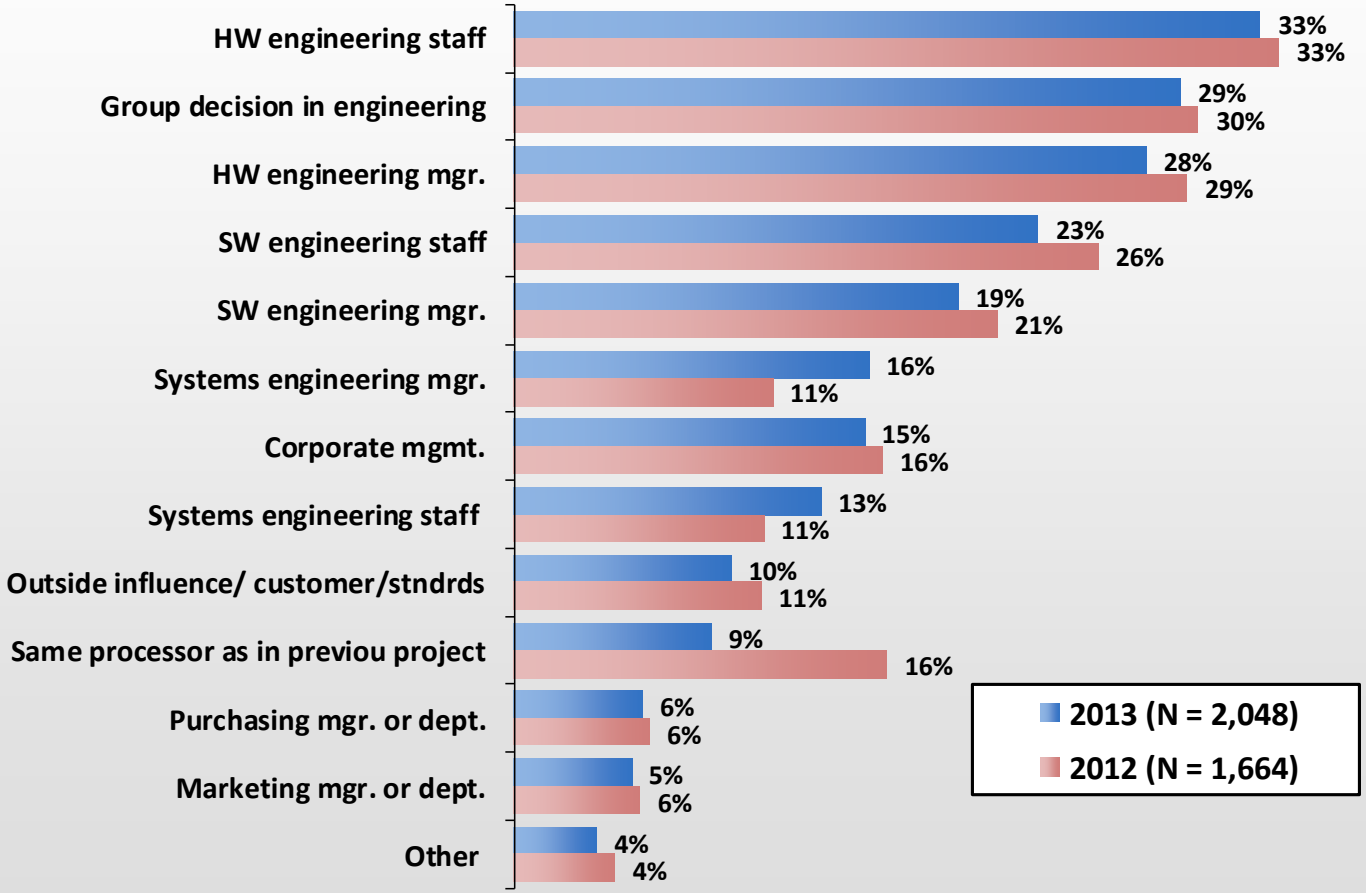
Why are you interested in embedded vitualization/hypervisors?



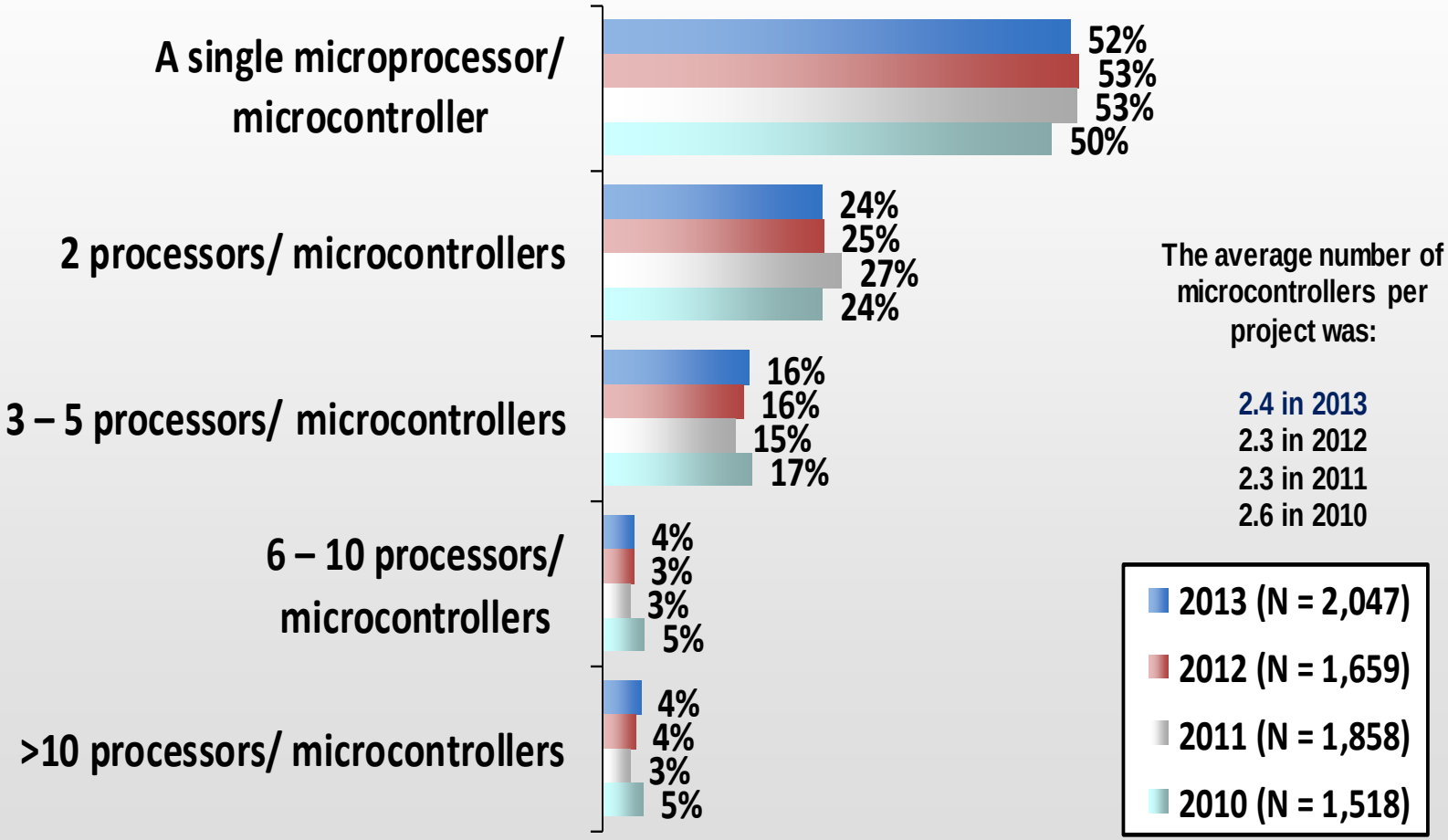
Base = Those who use or are considering using Linux

MICROPROCESSORS

Who were the greatest influences on the choice of the processor for your current project?



My current embedded project contains:



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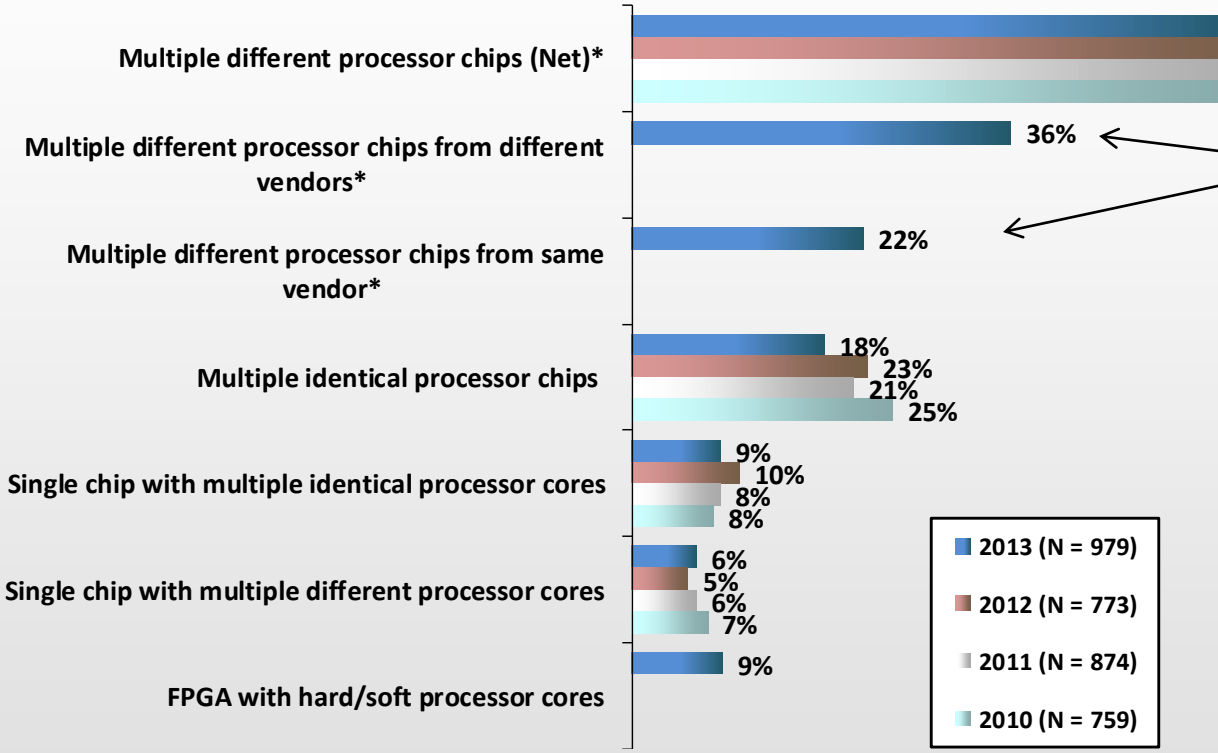
Does your embedded project contain . . .



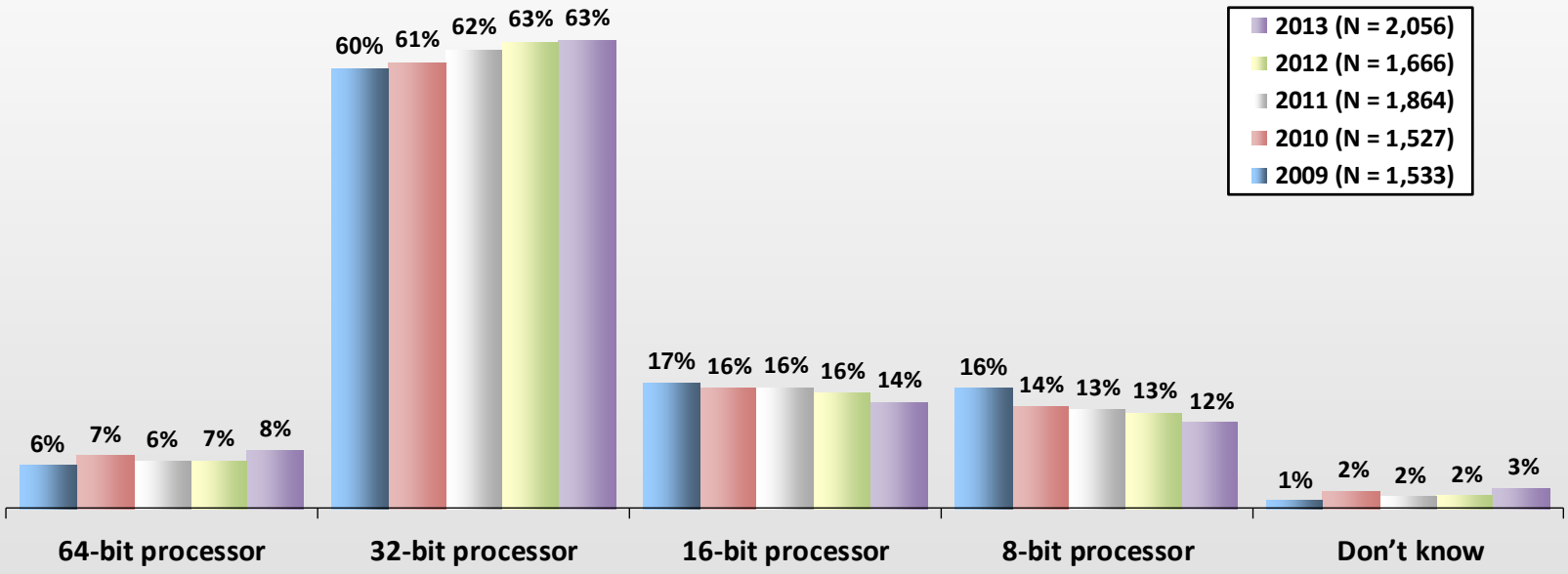
In 2013, multiple different processor chips were broken out into "same vendor" vs "different vendor" groups.

Freescale and TI are substantially more likely to be included when different vendors are used.

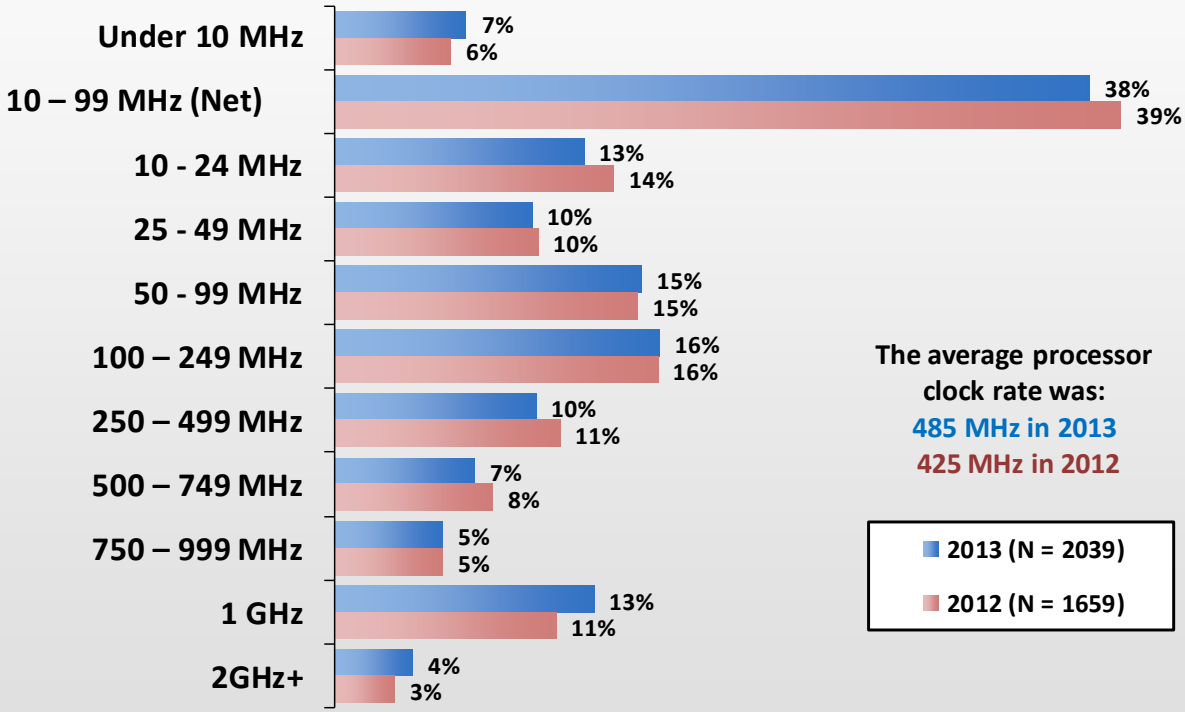
Microchip is more likely to be the selection when the same vendor is used, followed by Atmel, TI and Freescale in that order.

Base: Those who use multiple microprocessor/ microcontrollers for current project

My current embedded project's main processor is a:



My current embedded project's main processor clock rate is:



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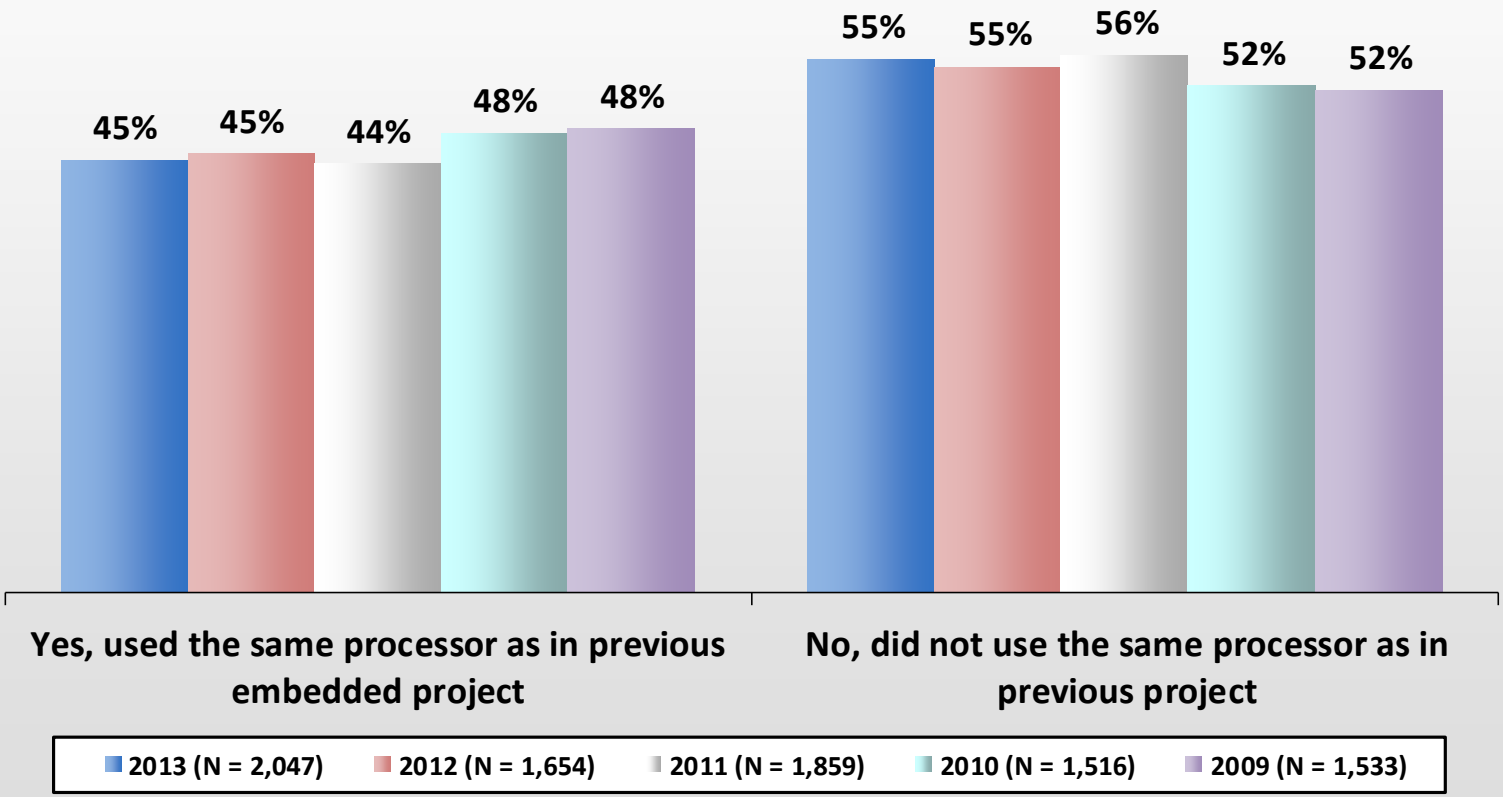
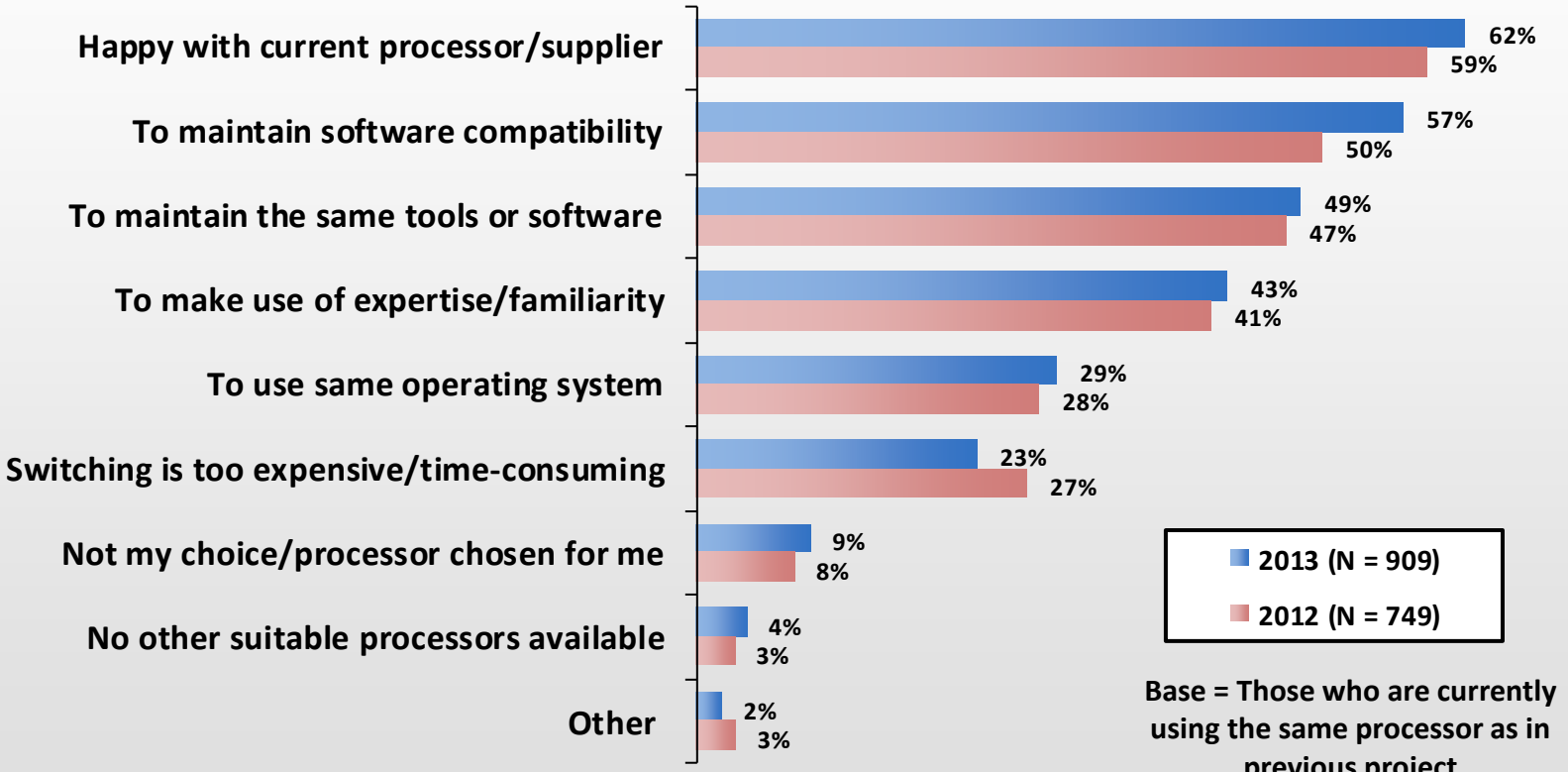
Did you use the same processor as in your previous embedded project?

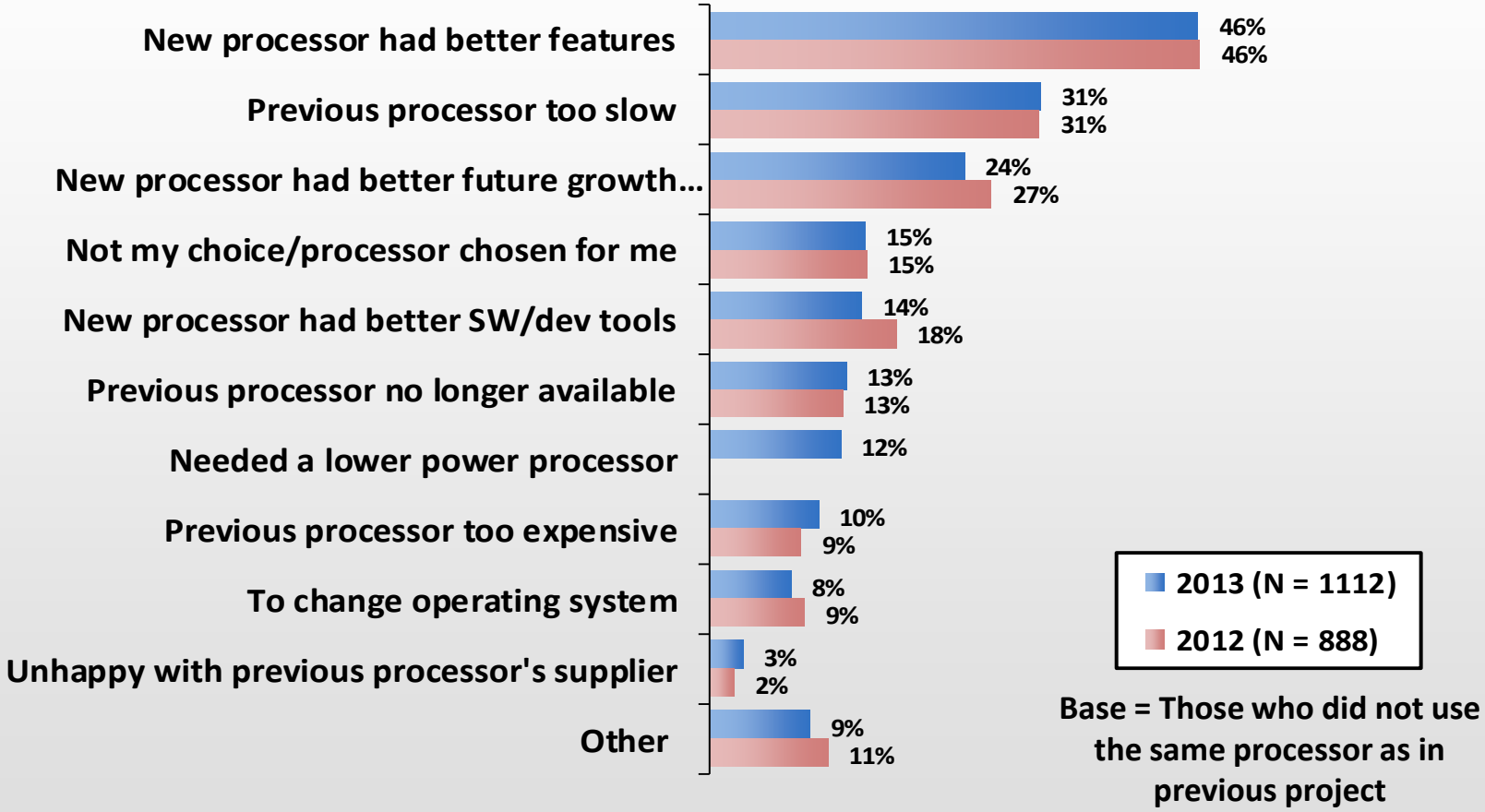


Why did you use the same processor?

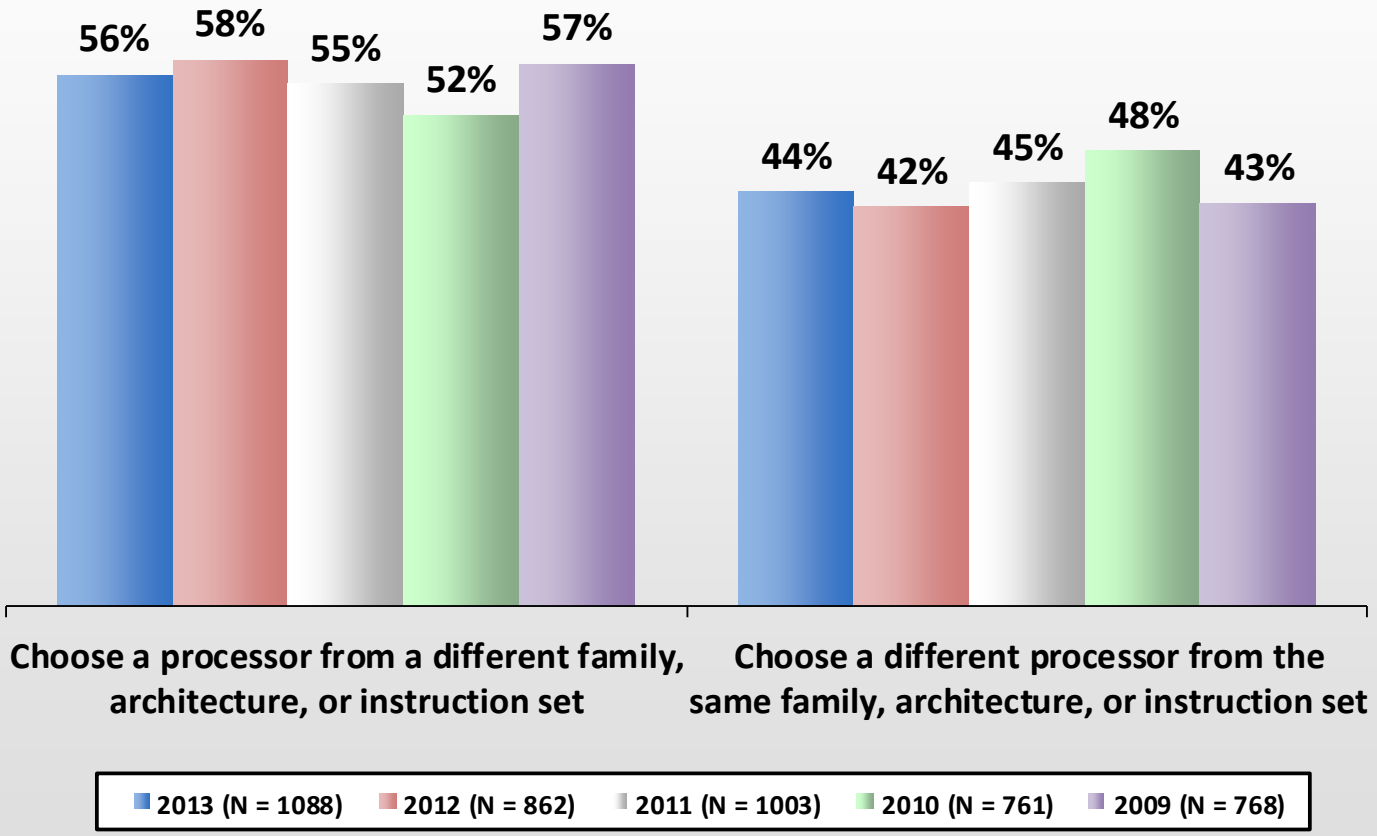


Base = Those who are currently using the same processor as in previous project

What were your reasons for switching processors?

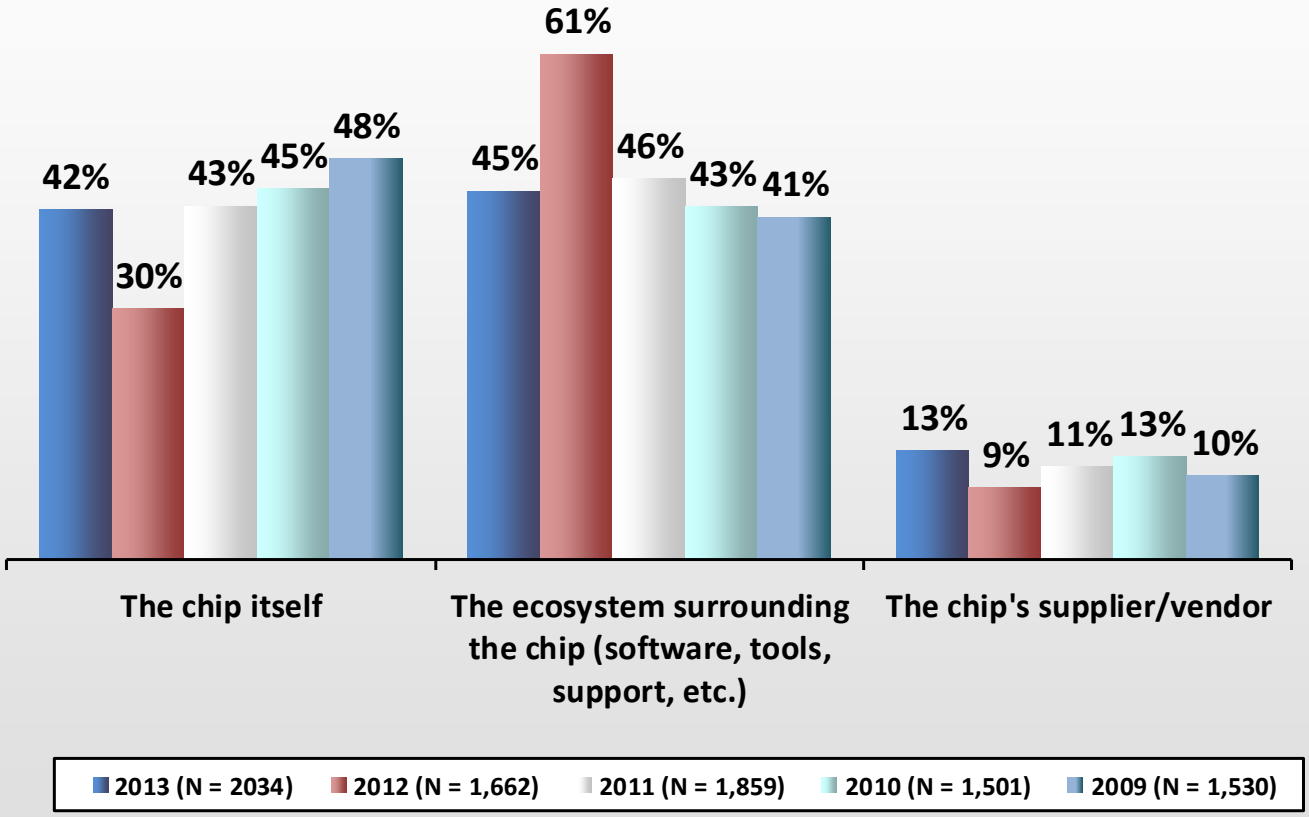


Did you . . .

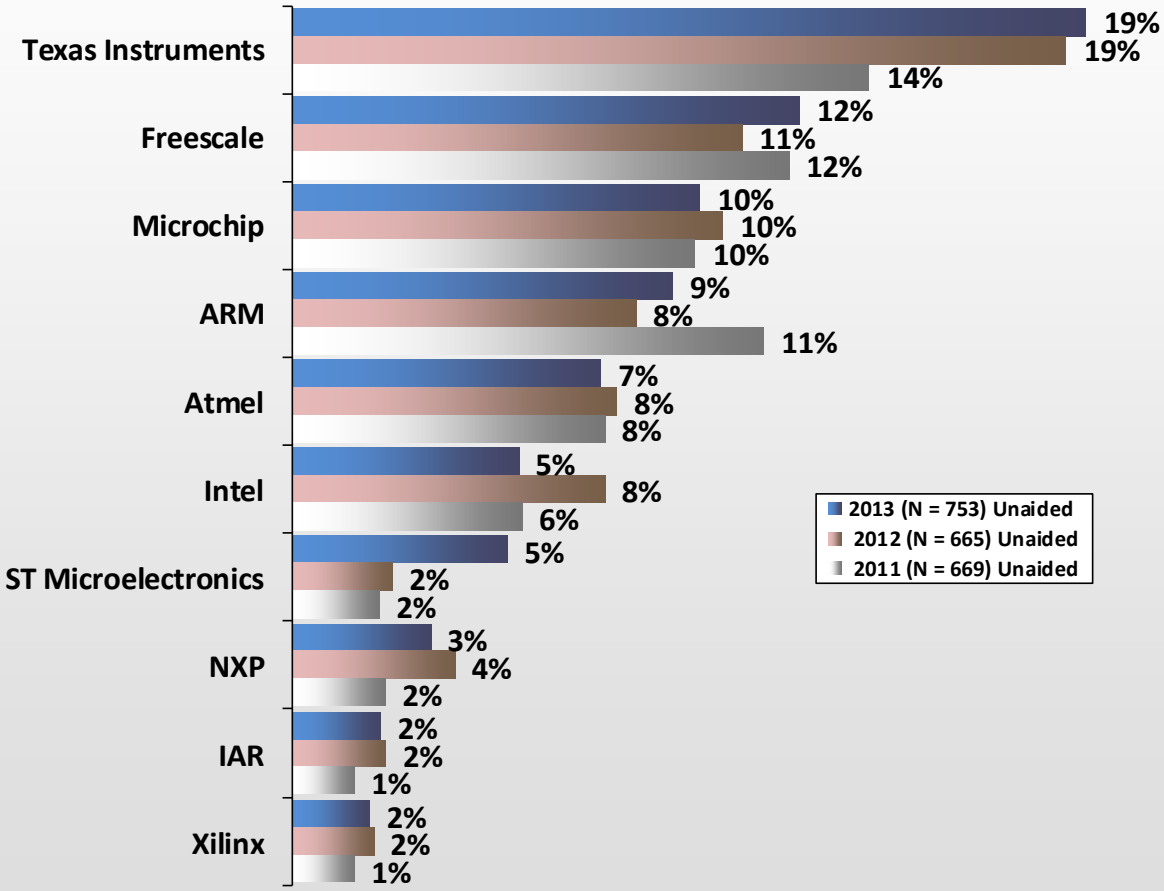


Base = Those who did not use the same processor as in previous project

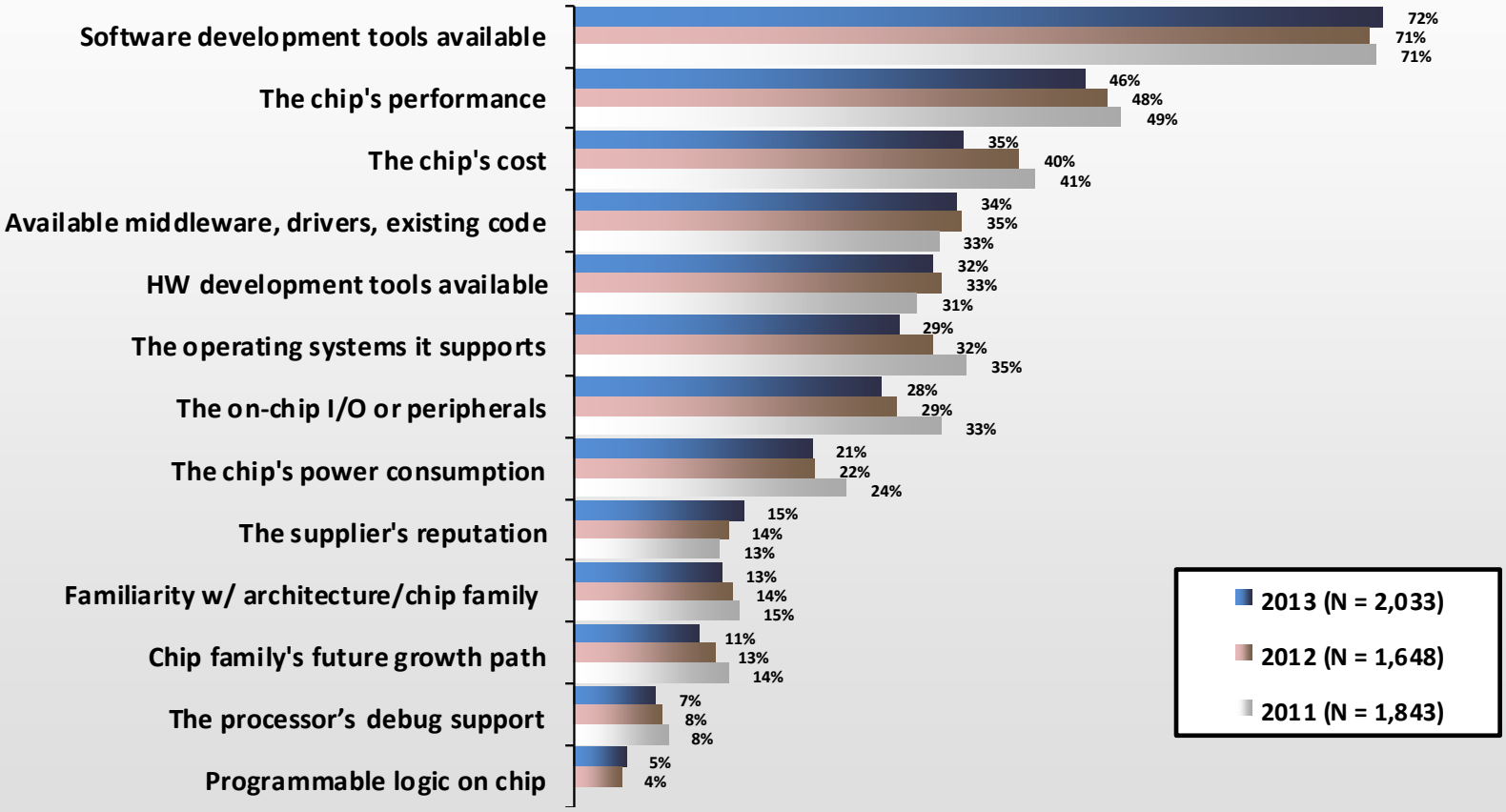
What's most important when choosing a microprocessor?



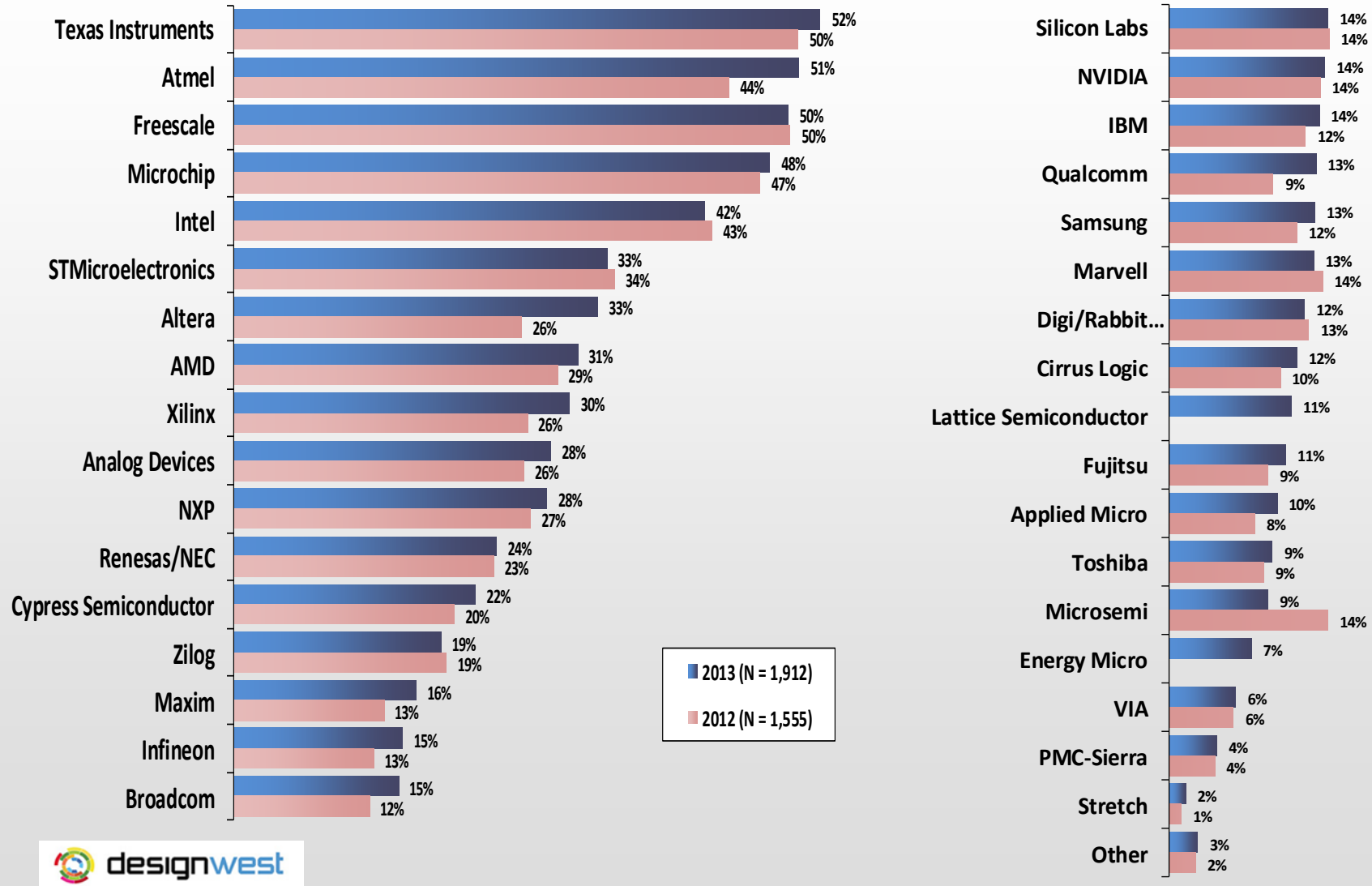
If you selected "ecosystem," please write in ONE vendor that has the best ecosystem for your needs. (Unaided)



What are the most important factors in choosing a processor?



Please select the processor vendors you are familiar with.



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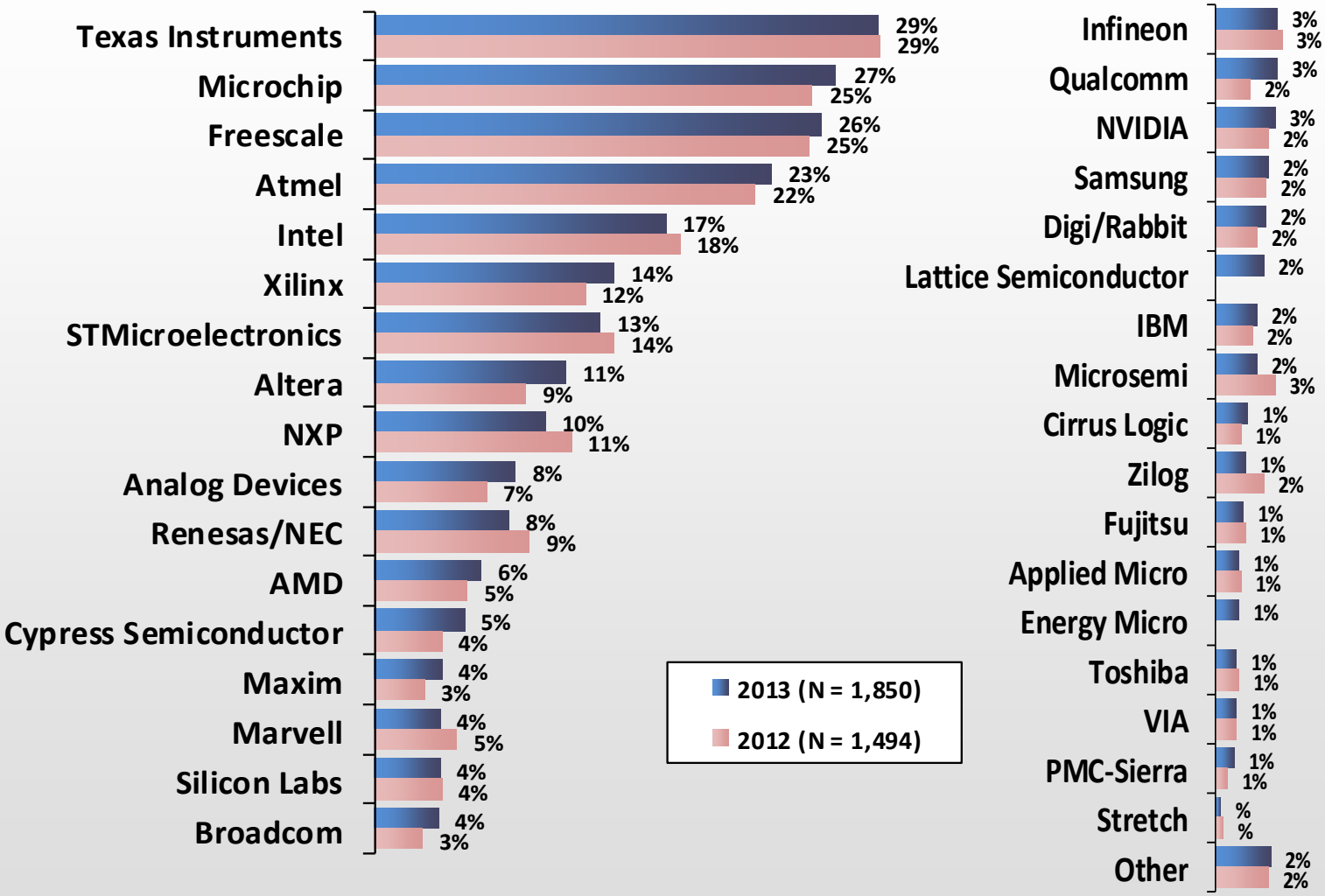
Please select the processor vendors you are currently using.



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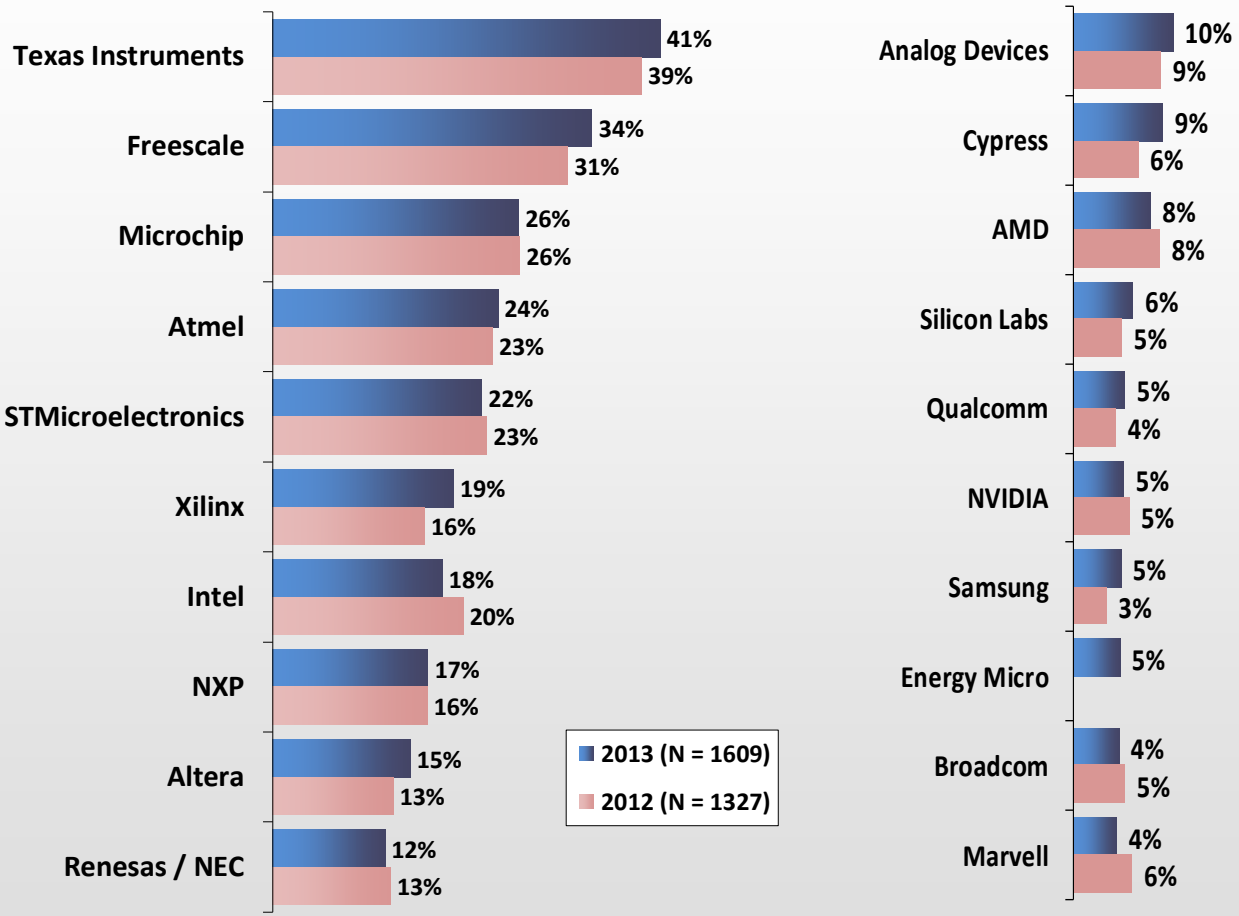
Please select the processor vendors you are considering using on your next project (Top 20).



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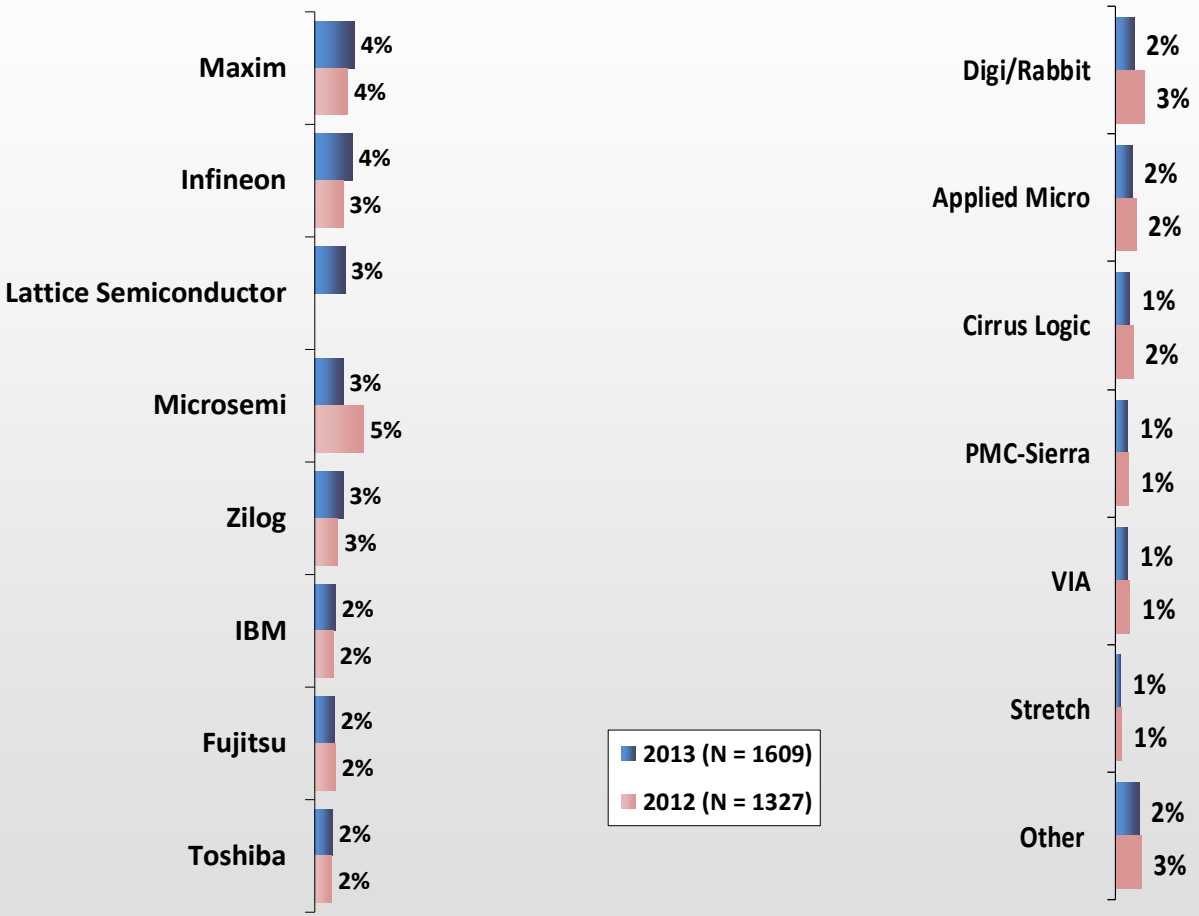
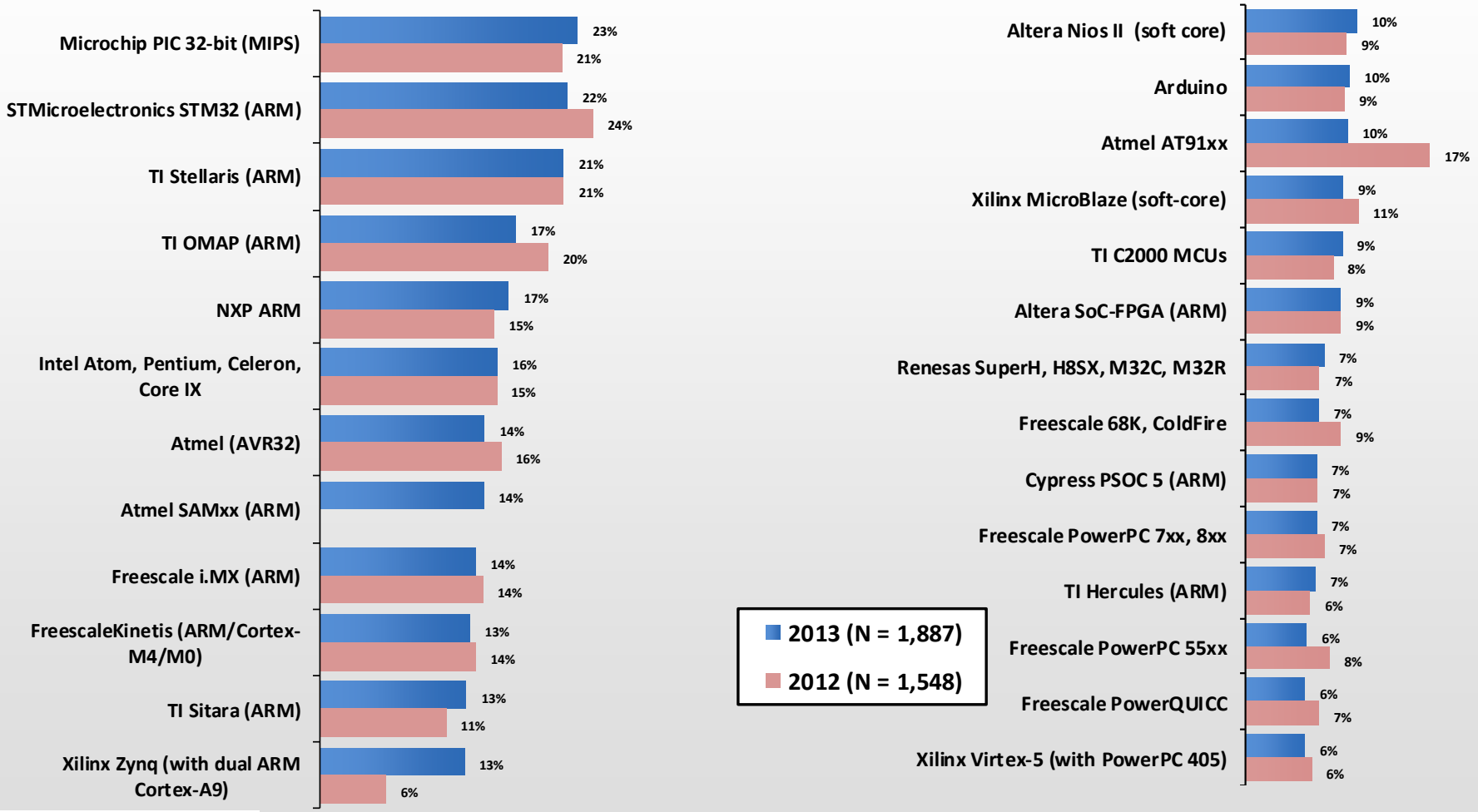
(Continued) Please select the processor vendors you are considering using on your next project.



Which of the following 32-bit chip families would you consider for your next embedded project?



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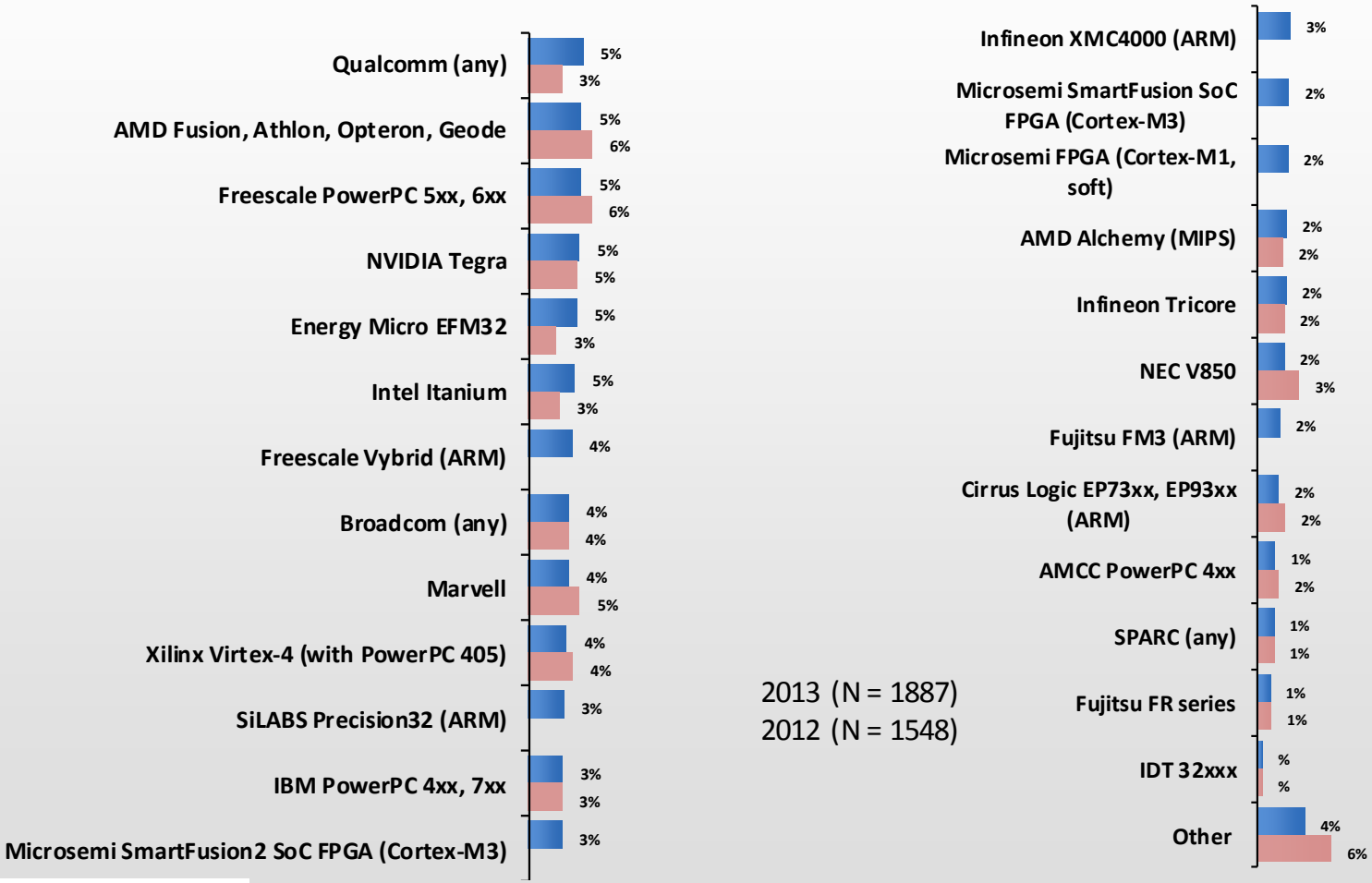
(Continued) Which of the following 32-bit chip families would you consider for your next embedded project?



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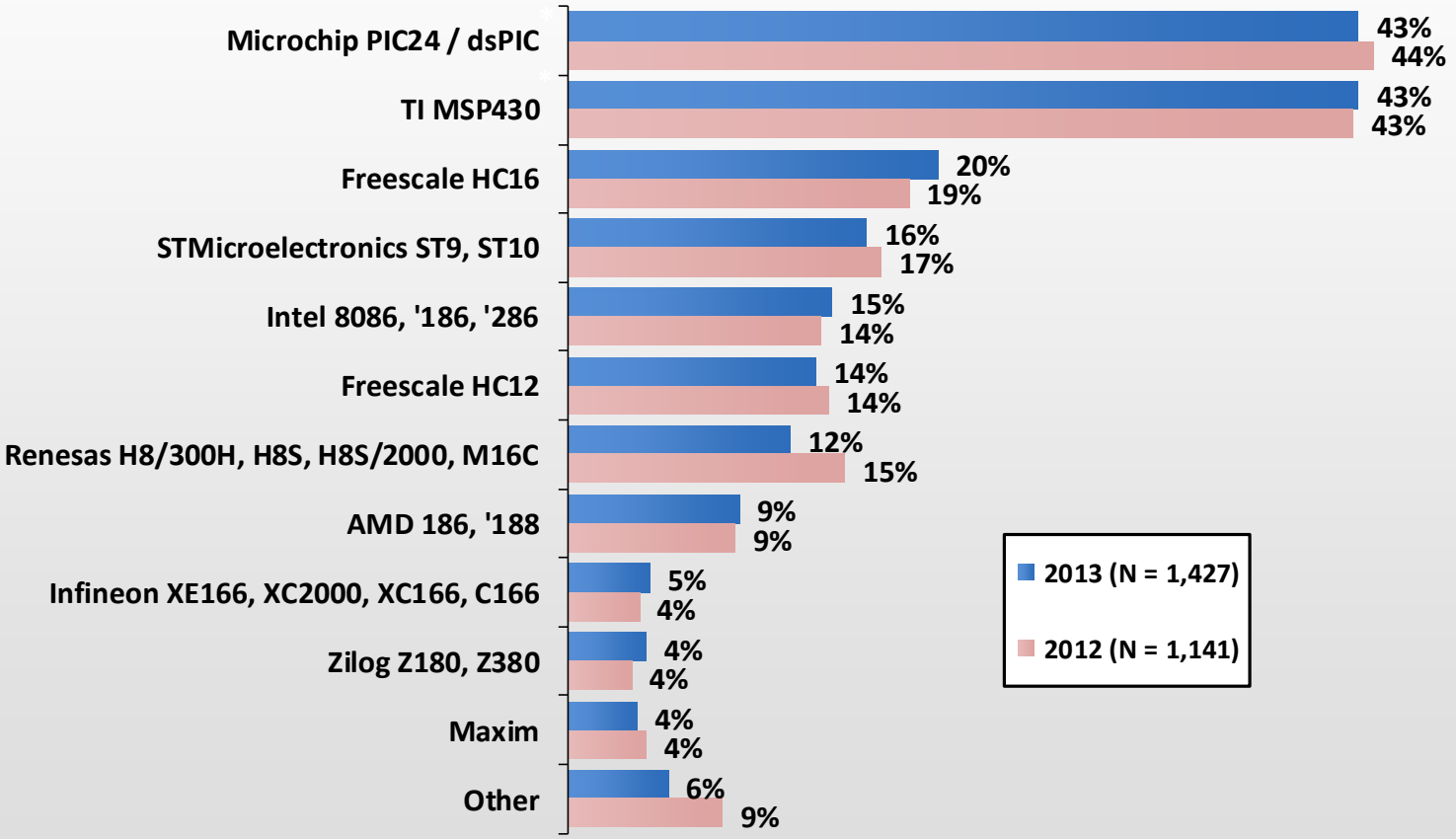
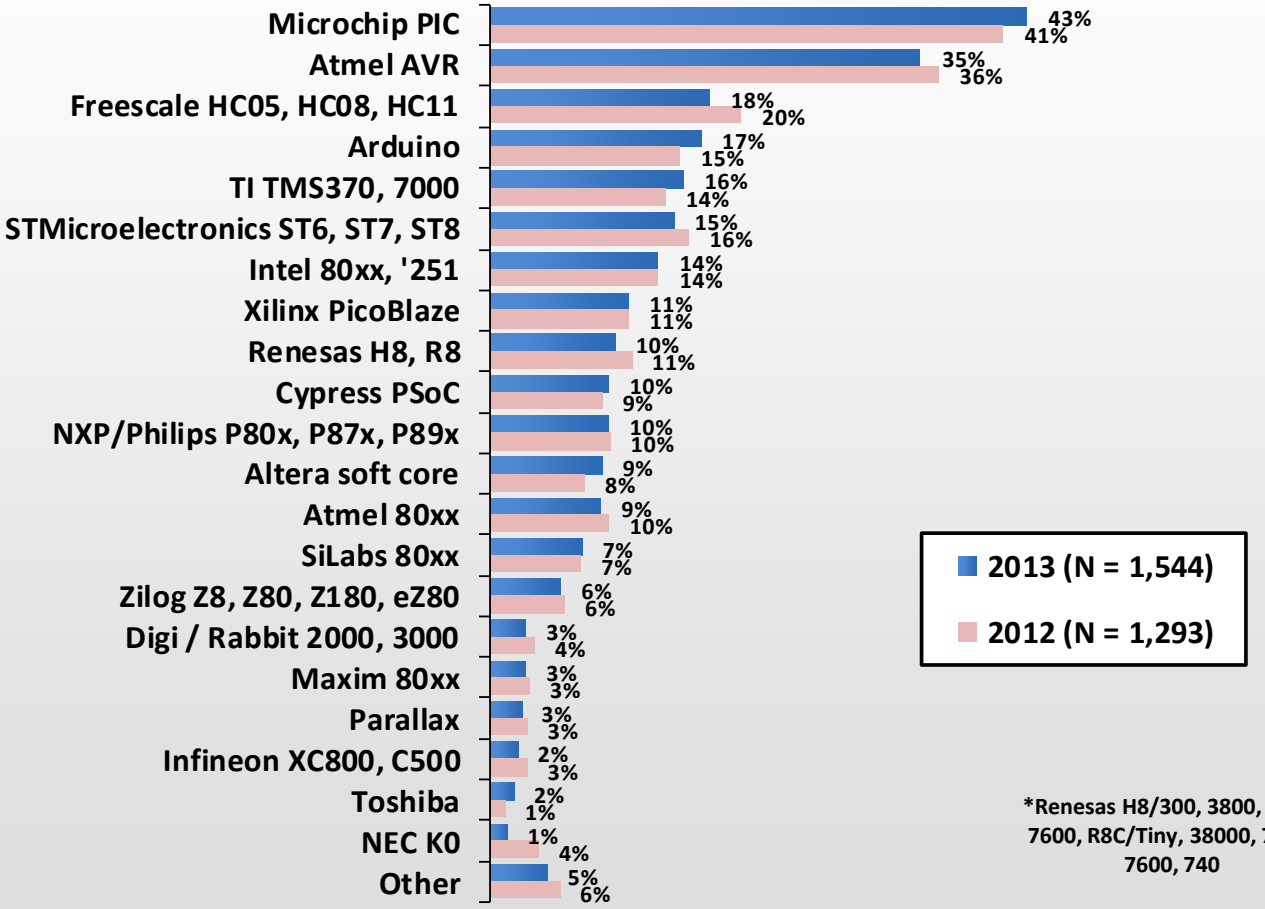
Which of the following 16-bit chip families would you consider for your next embedded project?



Which of the following 8-bit chip families would you consider for your next embedded project?



*Renesas H8/300, 3800, 7200, 7600, R8C/Tiny, 38000, 7200, 7600, 740

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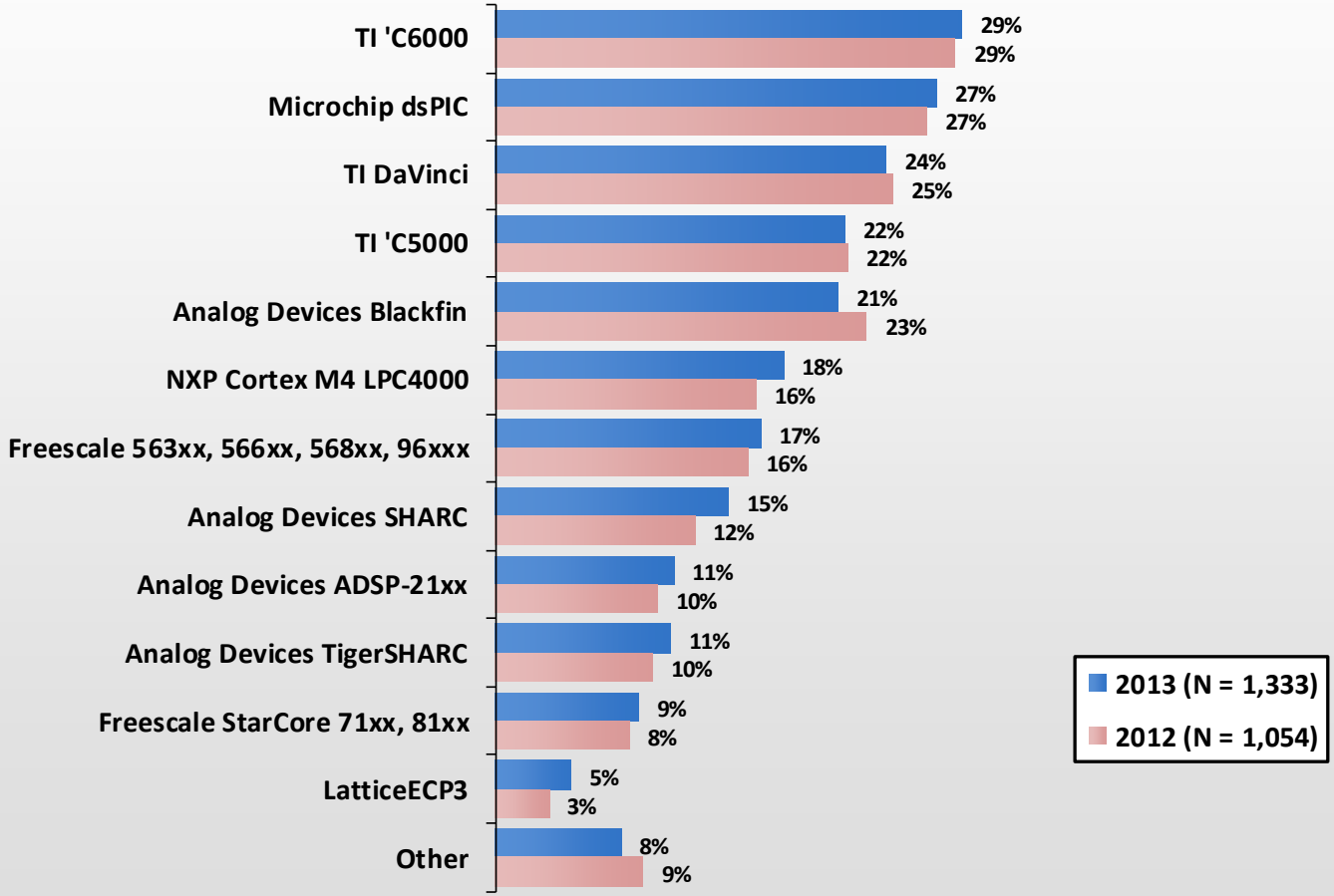
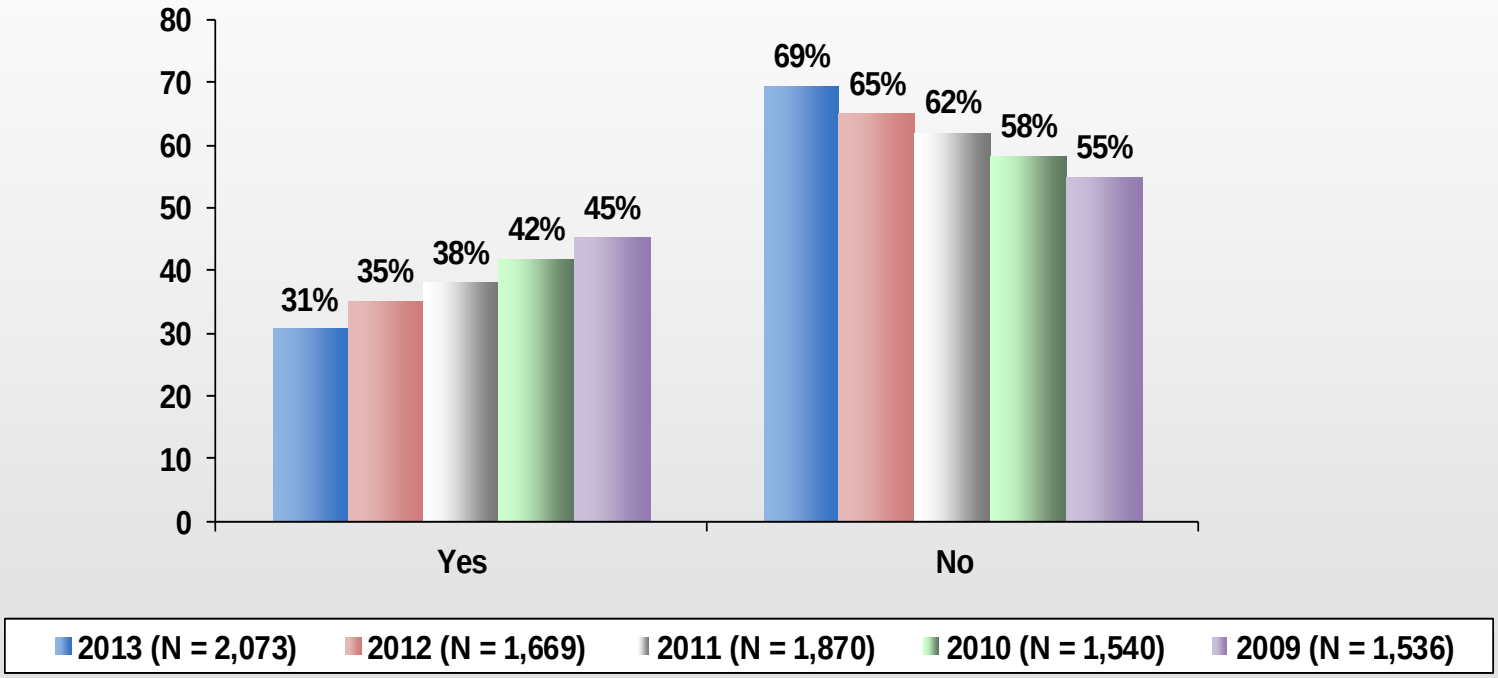
Which of the following DSP chip families would you consider for your next embedded project?

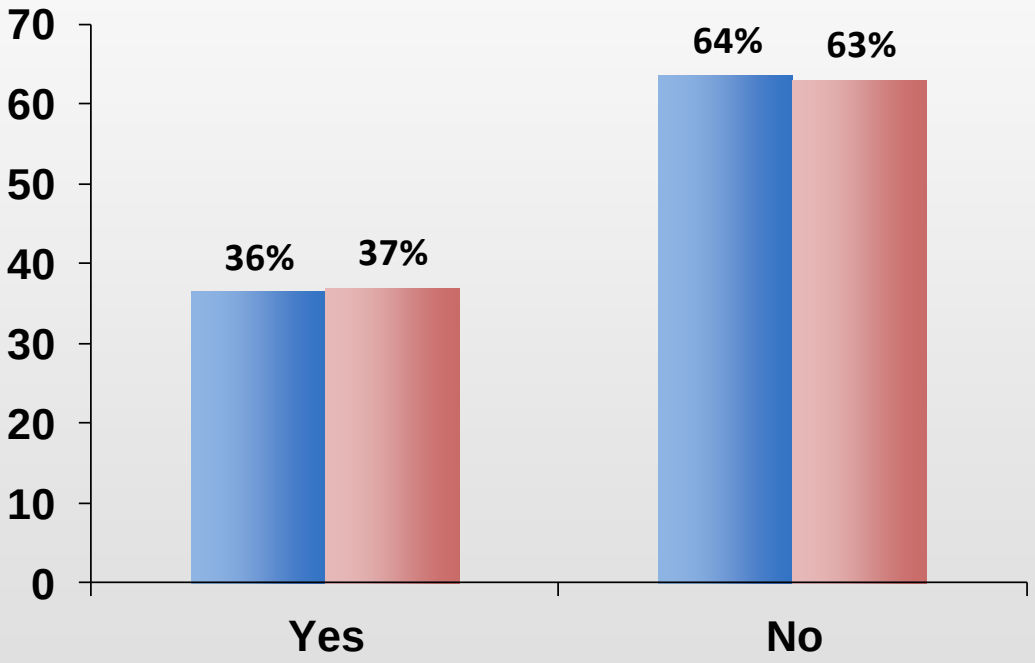


FPGA’s and Programmable Logic

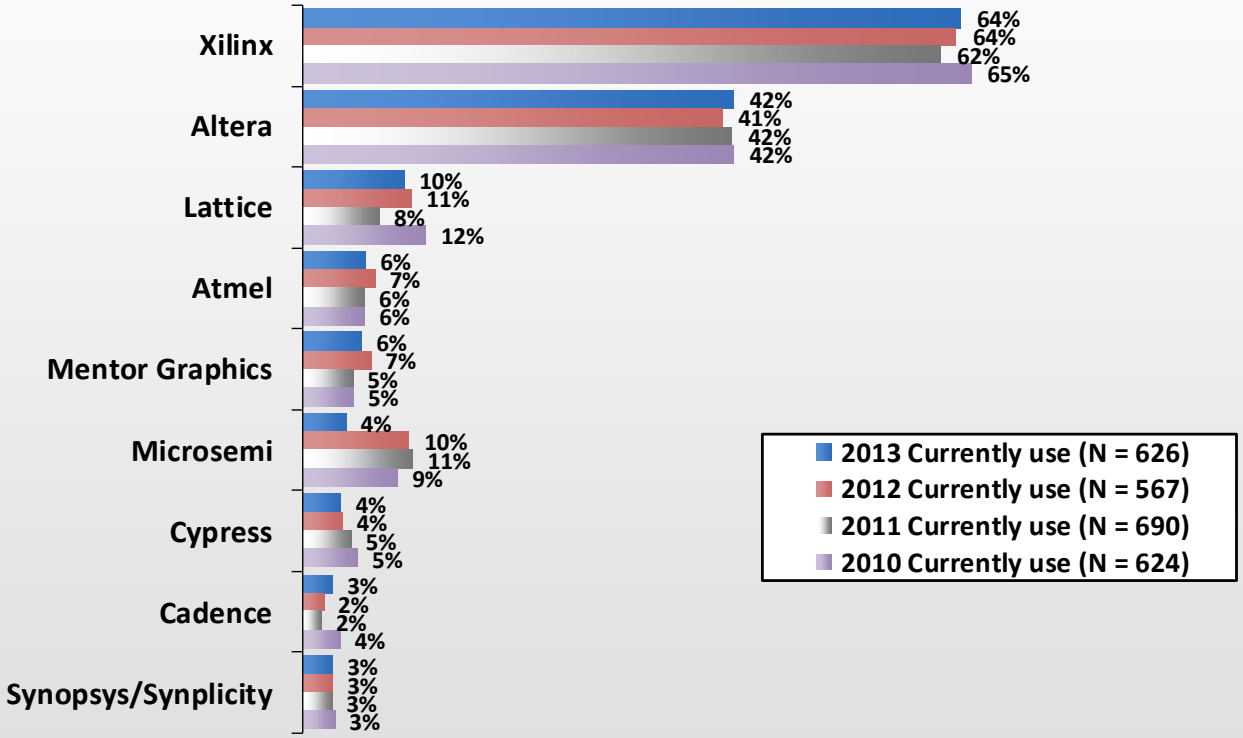
Does your current embedded project contain FPGAs/programmable logic?



If project doesn't contain any FPGAs, will the trend towards FPGAs with built in multicore processors change your mind?

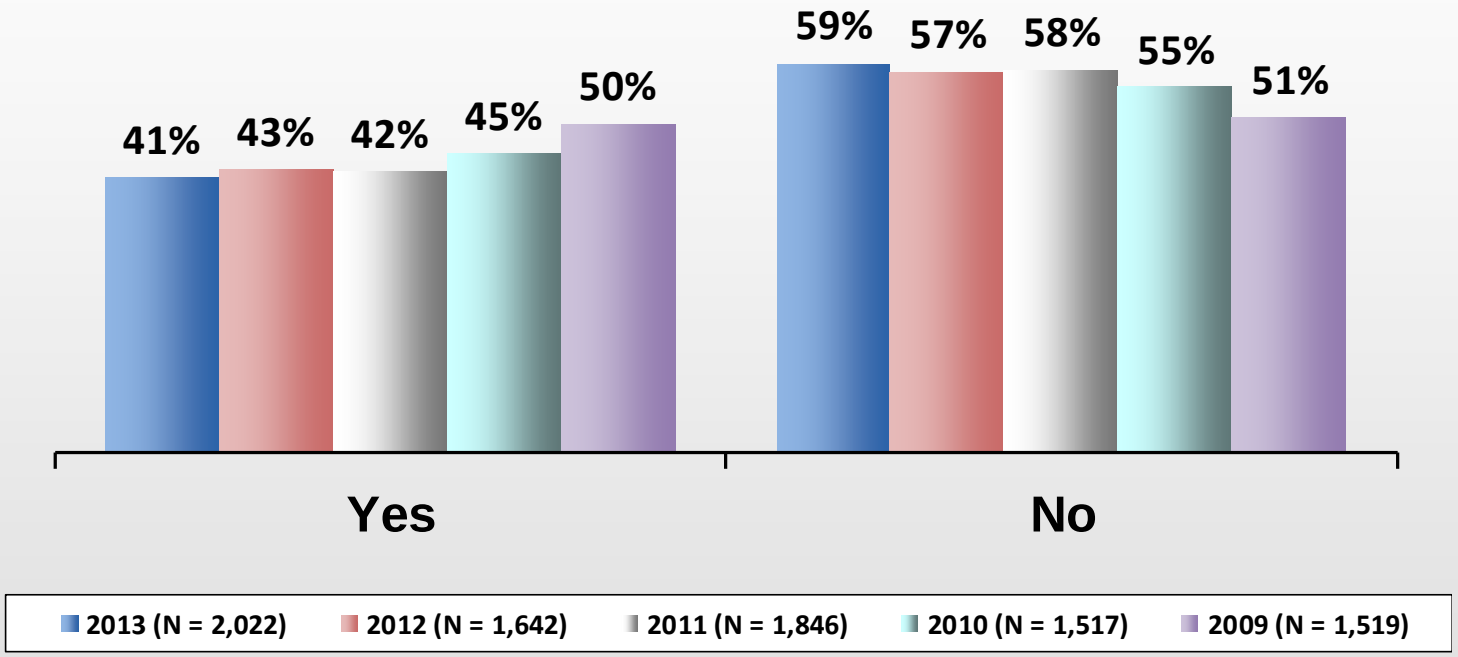


Which of the following vendors does your current embedded projects use for FPGAs?

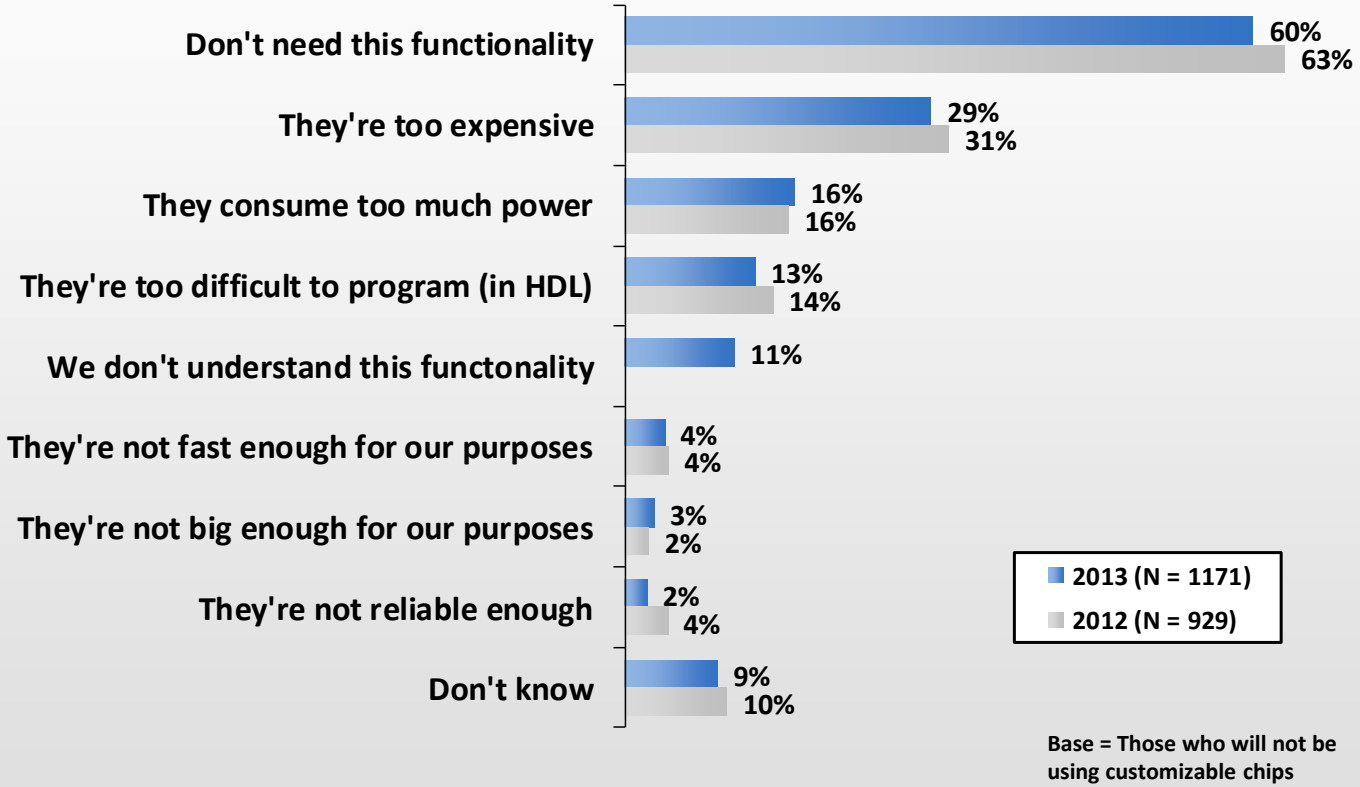


Tabula and Achronix were both less than one percent.

Will your next embedded project likely contain FPGAs/programmable logic?

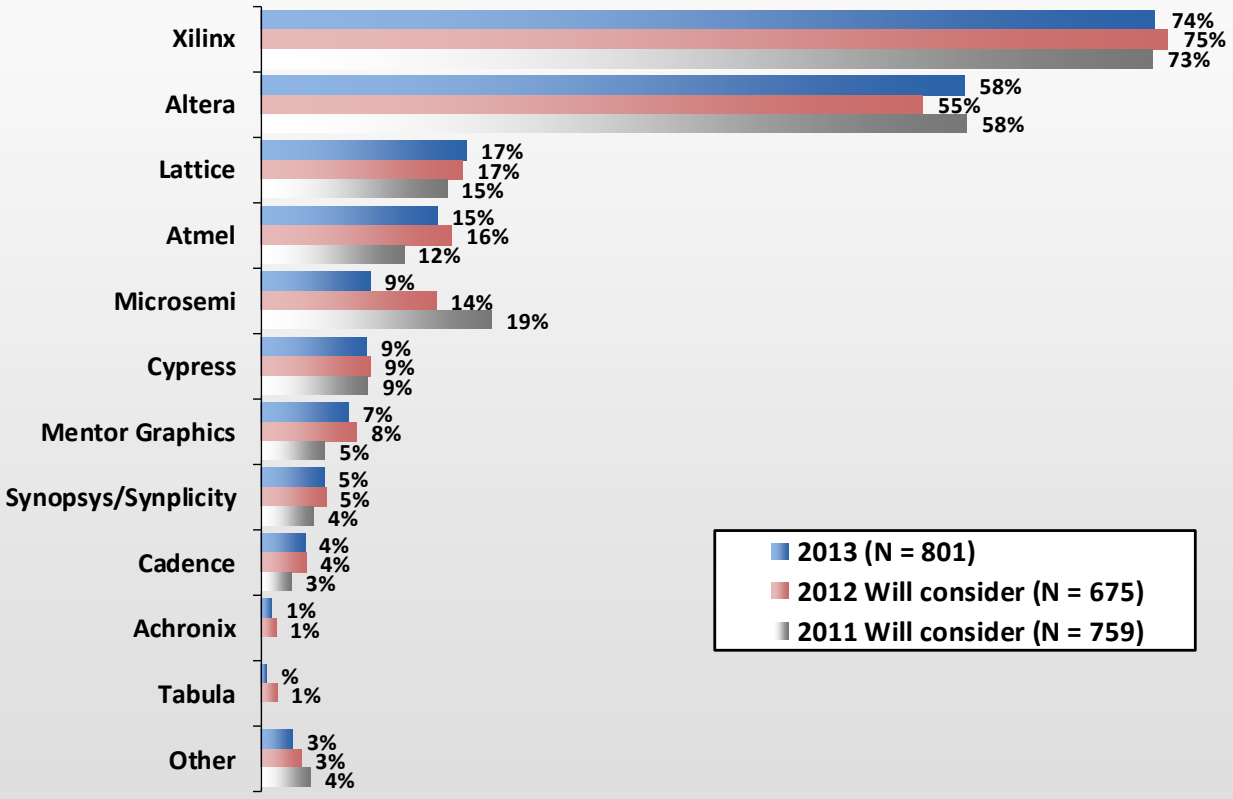


Why won't your next project include customizable chips?



Base = Those who will not be using customizable chips

If yes, which of the following vendors will you consider in your next embedded project for FPGAs?



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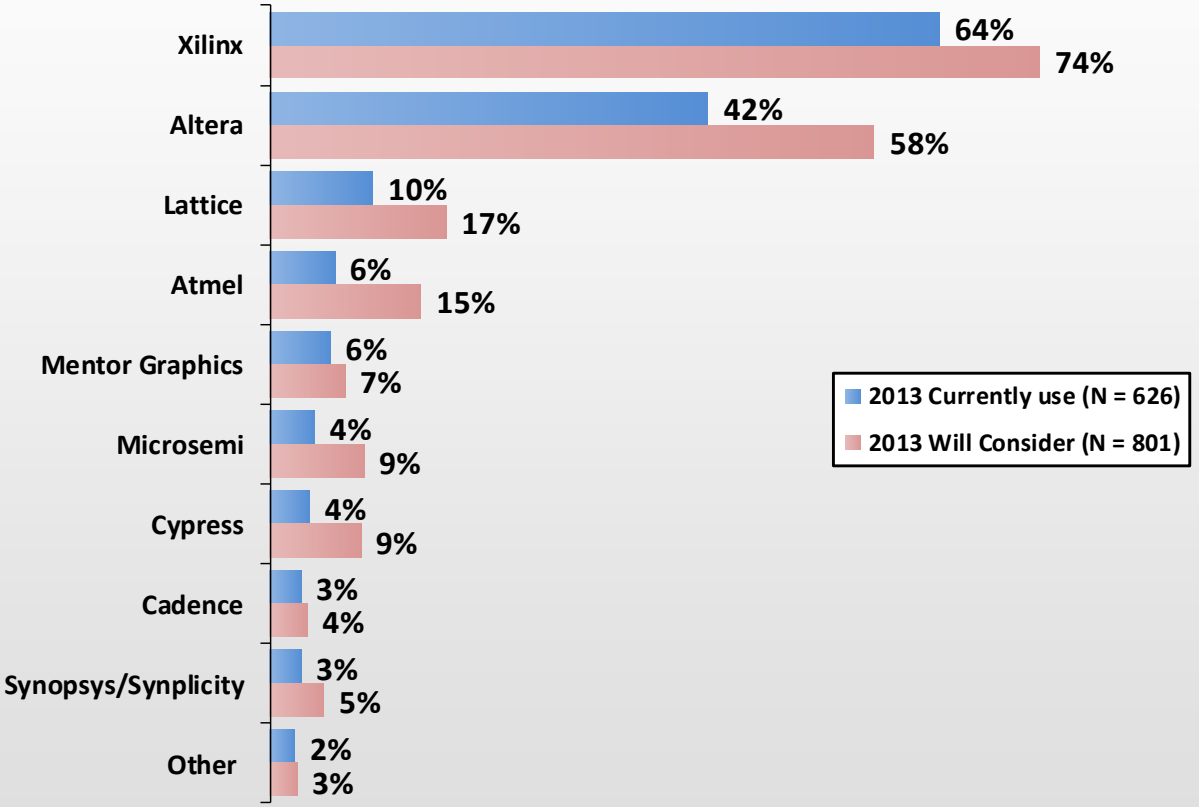
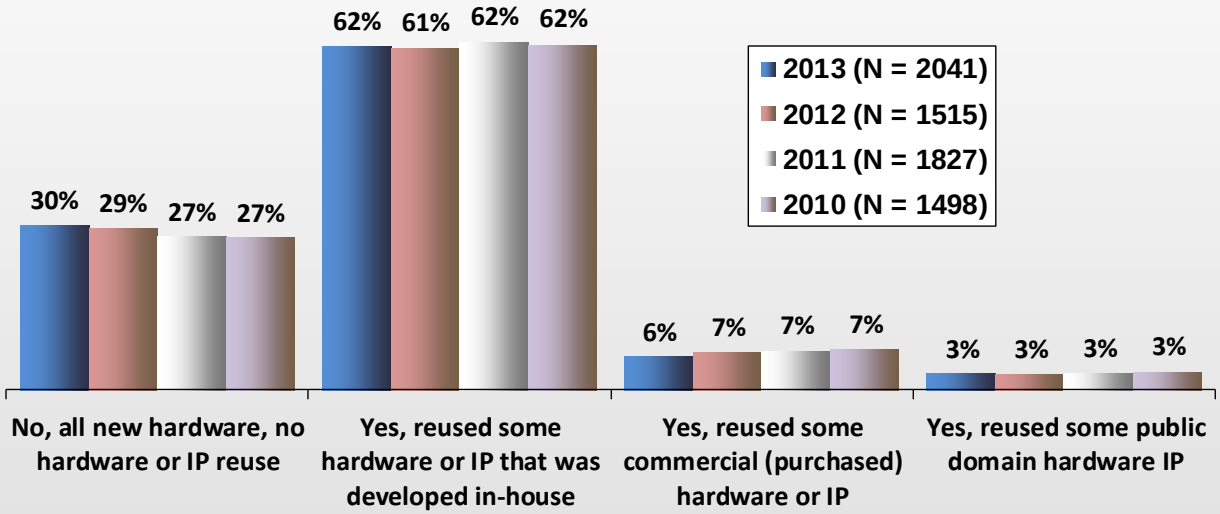
For 2013 only -- which of the following vendors does your current embedded projects use for FPGAs, and which will you consider in your next embedded project?

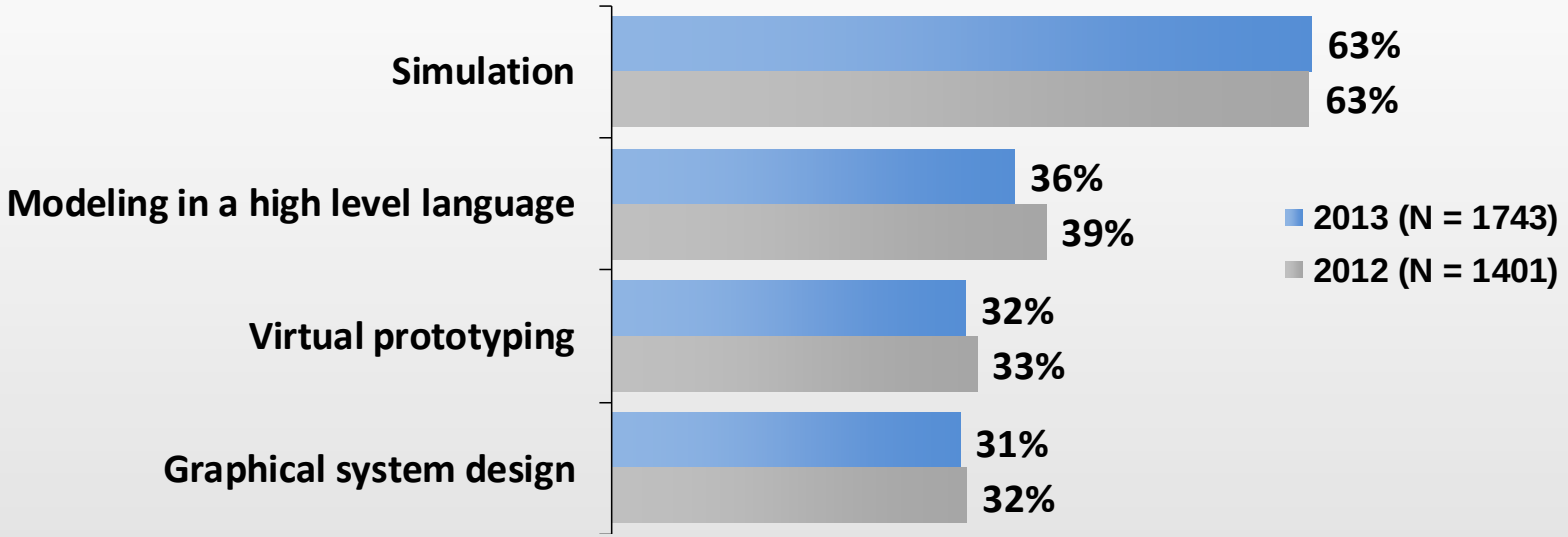


HARDWARE IPs,
SYSTEM LEVEL DESIGN,
& USE OF GUIs

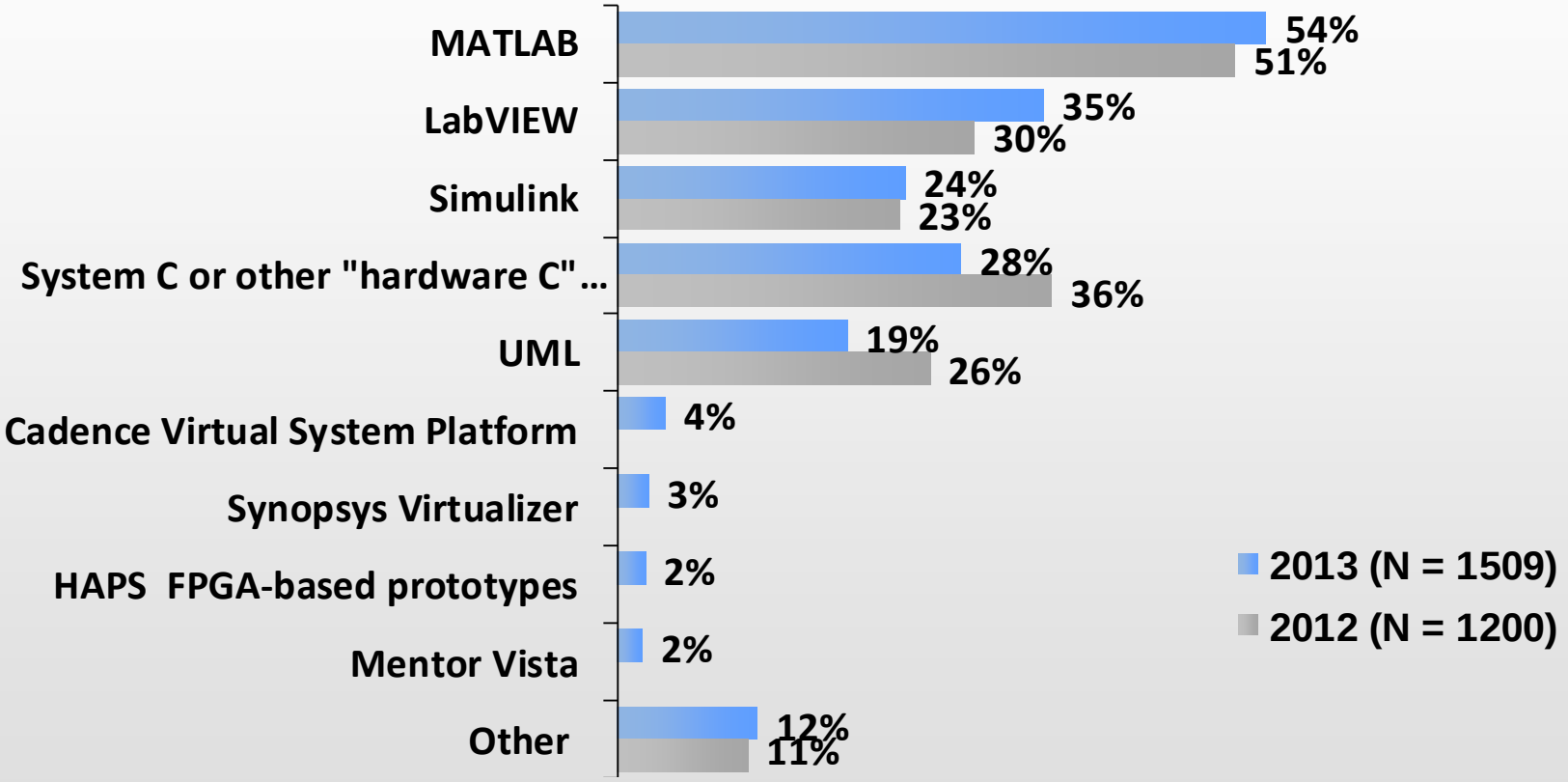
Does your current embedded project reuse hardware or hardware IP from a previous project?



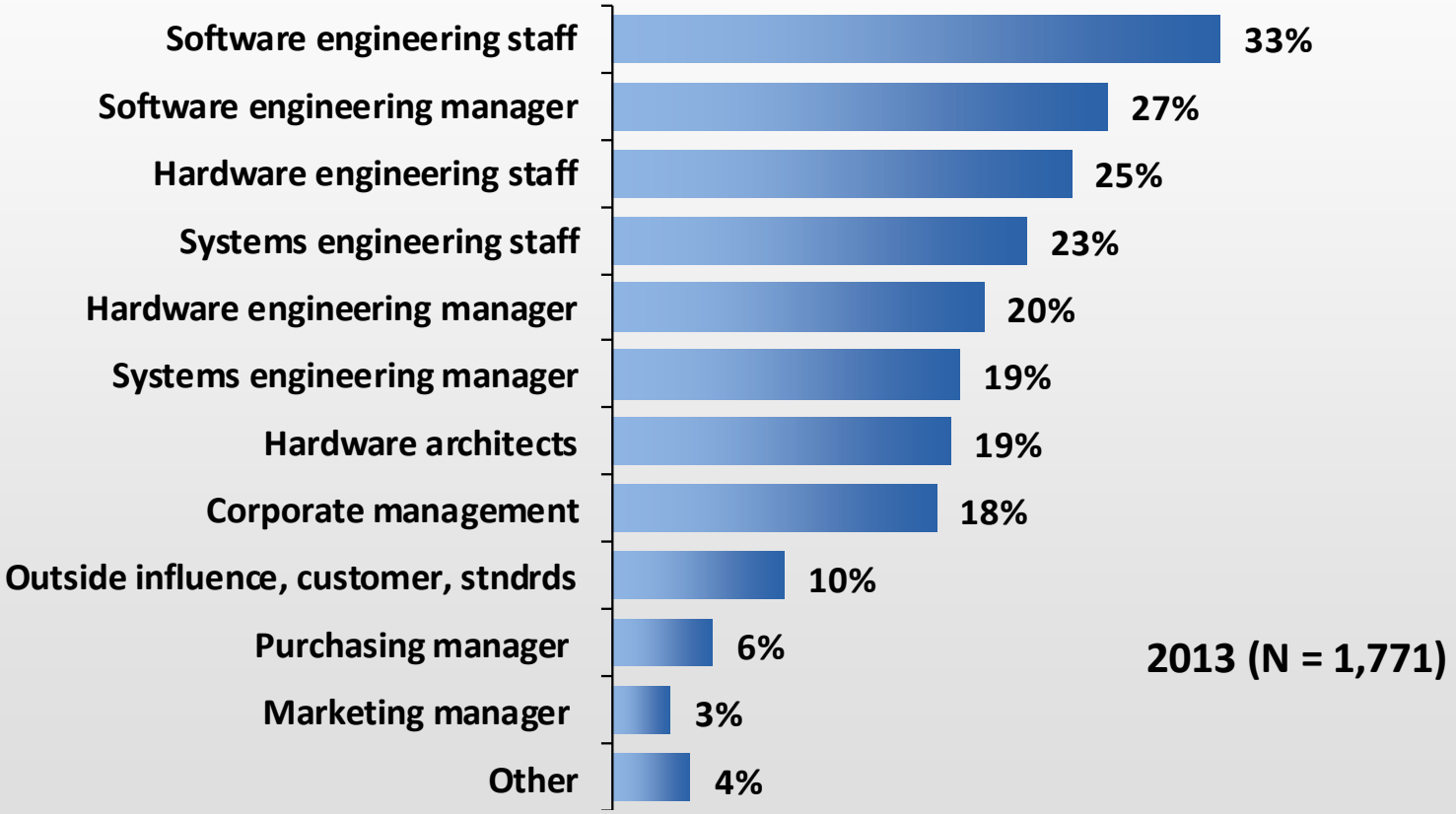
Which of the following design techniques will become more important to your designs in the future?



What system level design tools do you or your organization currently use?



Who were the three greatest influencers on the choice of the system-level tools for your current project?



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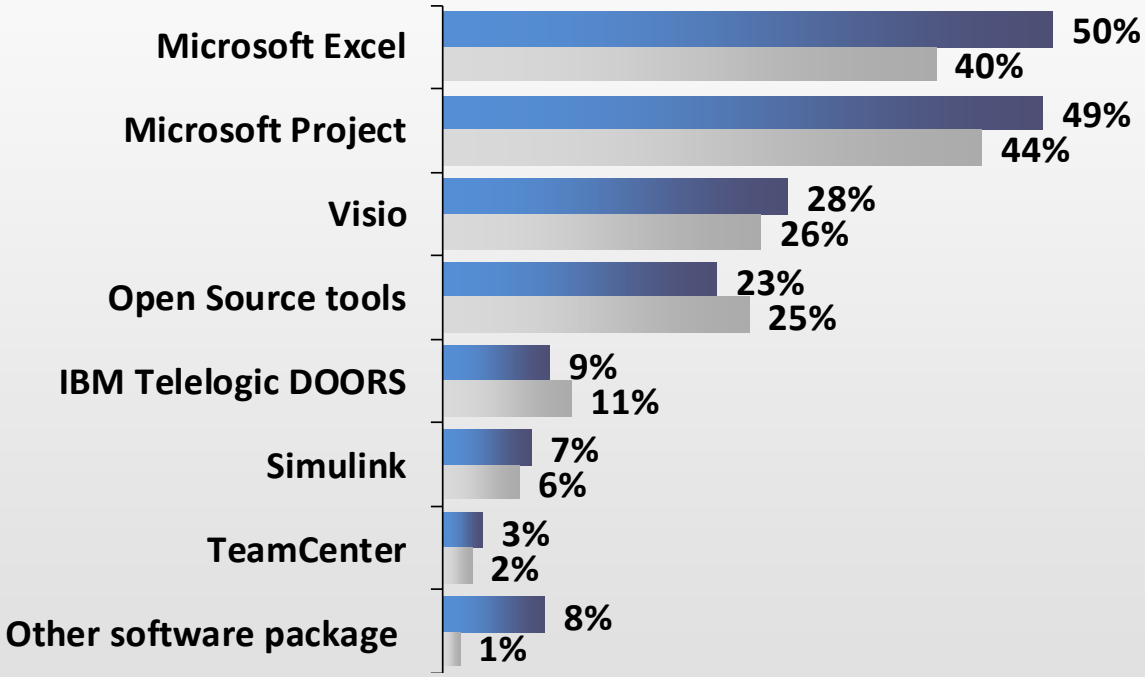
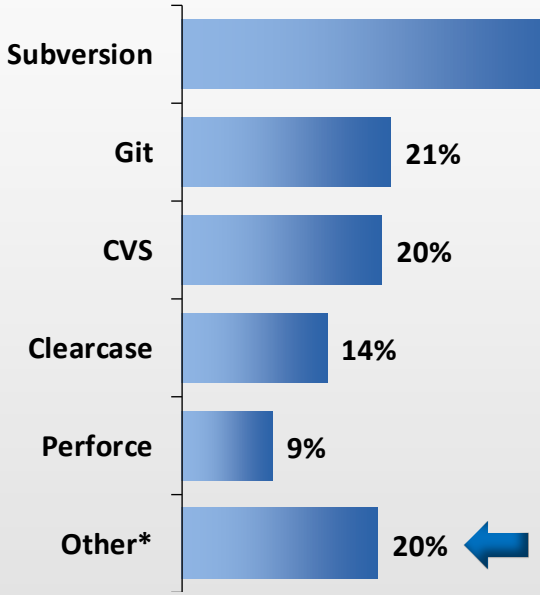
Which of the following project management software packages do you currently use?



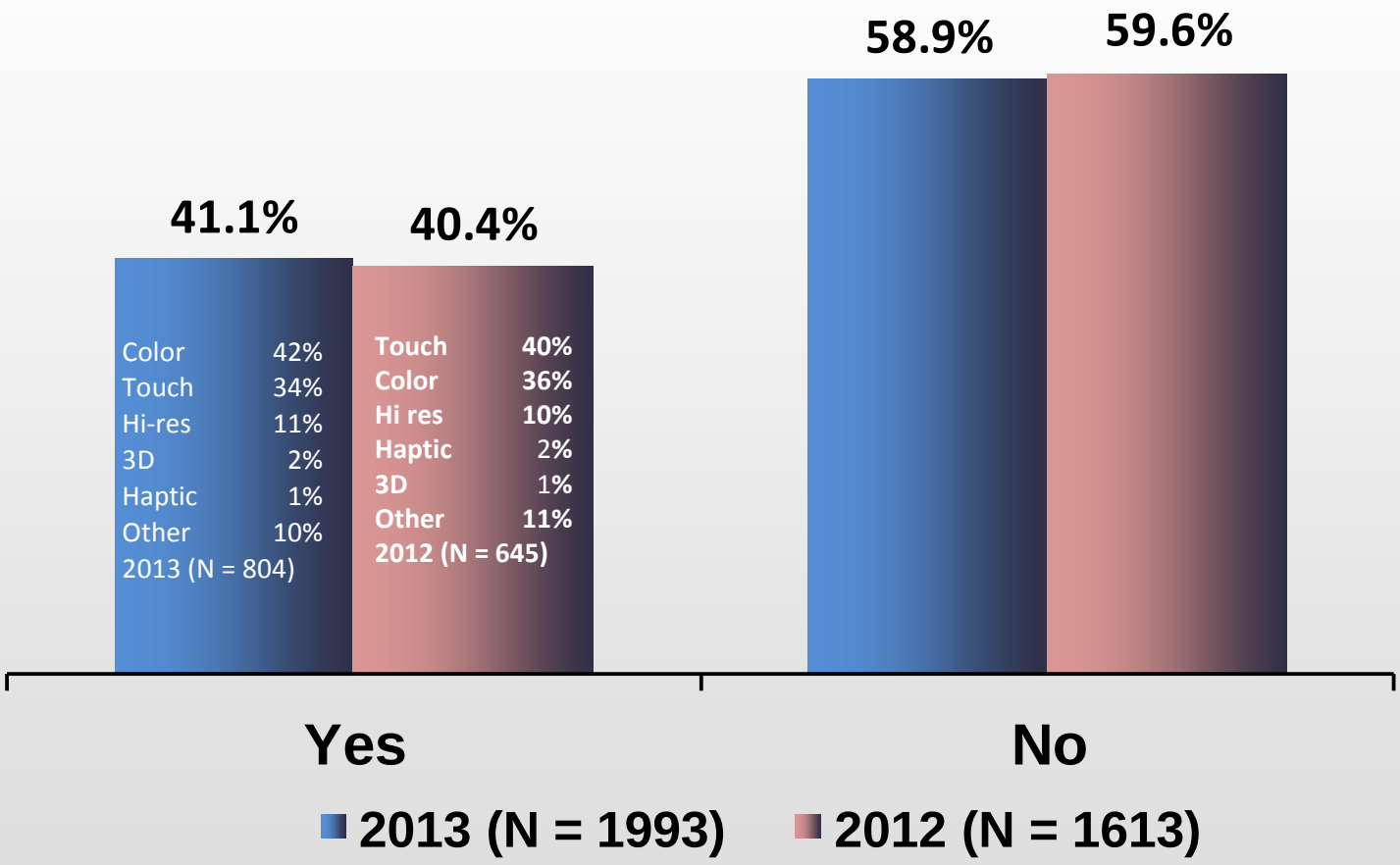
Which of the following Version Control software systems do you currently use?



2013 (N = 1,660)

*Other mentions	
Mercurial	38
Serena PVCS	23
Microsoft Source Safe	21
MKS	18
Team Foundation Server (TFS)	16
Tortoise	16
Visual SourceSafe	12

Does your current design use a graphical user interface?



Thank you | See you at DESIGN West!

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