

2018  
CNCCookbook

# CAM Survey Results

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*Every year, CNCCookbook surveys readers on their CAM Software. The results provide an invaluable guide to CAM for the CNC World..*

**CNC Cookbook®**

Be a Better CNC'er

# Overview

**E**very year CNCCookbook surveys readers on their CAM Software. The results are a unique and invaluable guide to CAM for the CNC World.

This year we received about 300 responses. That's down from prior years because we required respondents to give their email addresses to participate.

Product Managers at a variety of CAD/CAM companies, large and small, tell me they find the results very valuable in their own planning. There's really no other source of information quite like these surveys, so I wanted to get these initial results out as soon as I could.

We've done these CAM surveys in [2010](#), [2012](#), [2014](#), [2015](#), [2016](#), [2017](#) and now 2018, so there is historical data to compare against when looking for trends.

As in the past, we divide the market into 3 segments:

High-End: More expensive packages with more functionality.

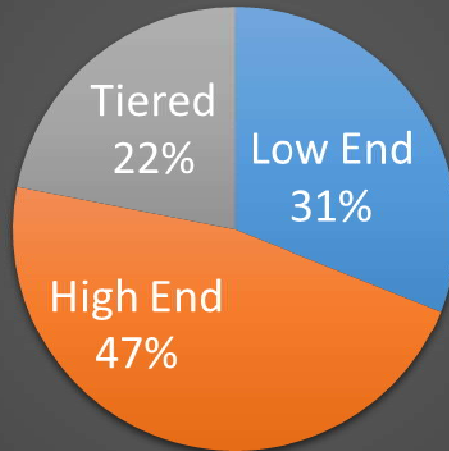
Tiered: Modular packages available in a range of configurations that span from the Low-End to the High-End.

Low-End: These are inexpensive packages most commonly used by Hobbyists, but as we'll see, at least one package has come up-market to the Professional World.

Let's start by taking a look by category at market share.

# CAM Segments

CAM Breakdown by Segment

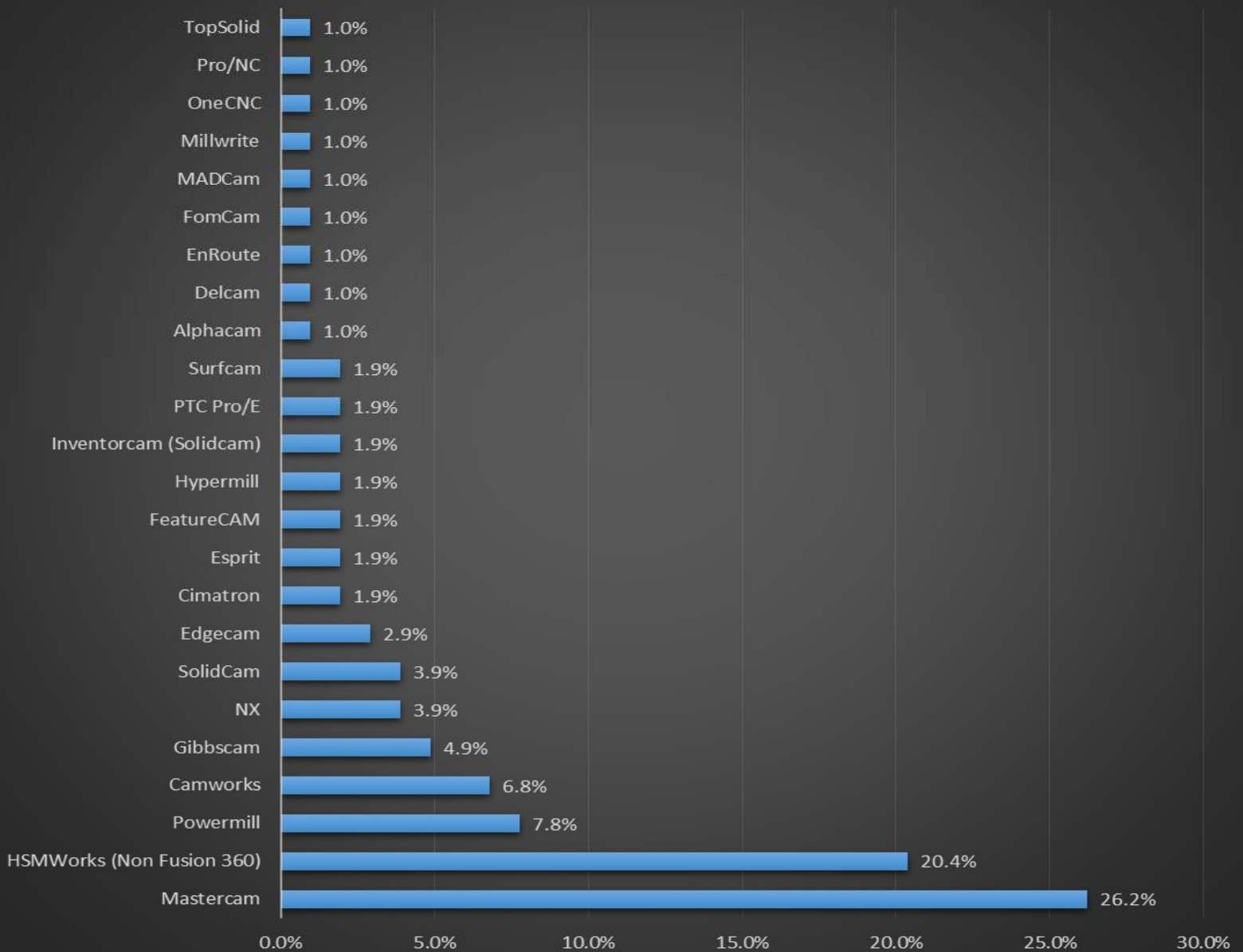


This year, High End CAM was 47% of our responses vs 45% last year. Tier-priced CAM fell from 27% to 22%. The Low End is up from 28% to 31%.

As we will see, this is due to the Tiered packages being squeezed by the High End and by Fusion 360 at the Low End. That's a tough market for them.

# CAM Market Share by Segment: High End

High End CAM Market Share  
CNCCookbook 2018 CAM Survey

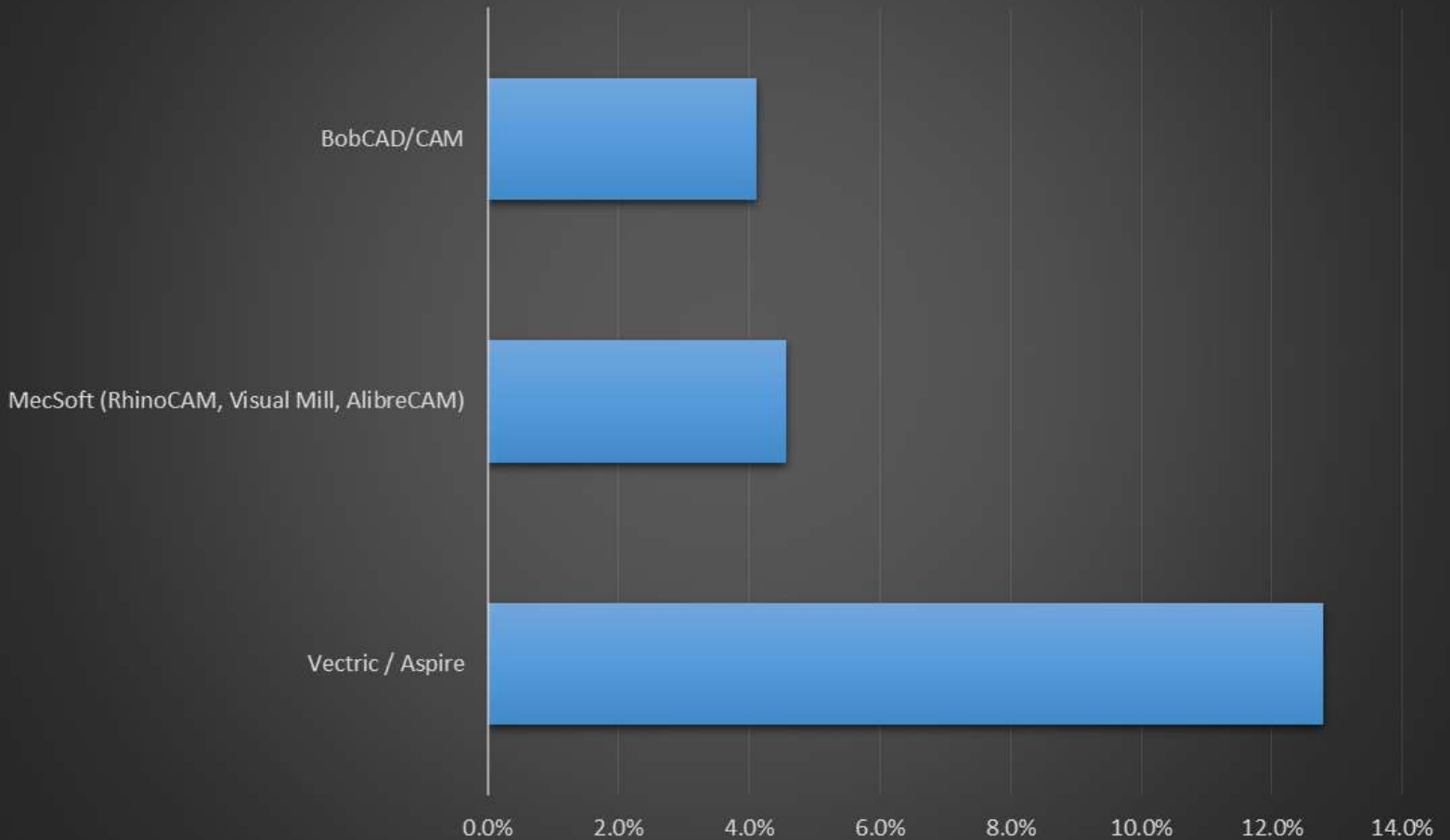


This year, High End CAM market share was led by Mastercam, with 26.2% share. Last year they had 22% share, so they're up quite a bit.

In second place was HSMWorks, with 20% share, also up from last years 14.6%.

# CAM Market Share: Tiered Segment

TieredCAM Market Share  
CNCCookbook 2018 CAM Survey

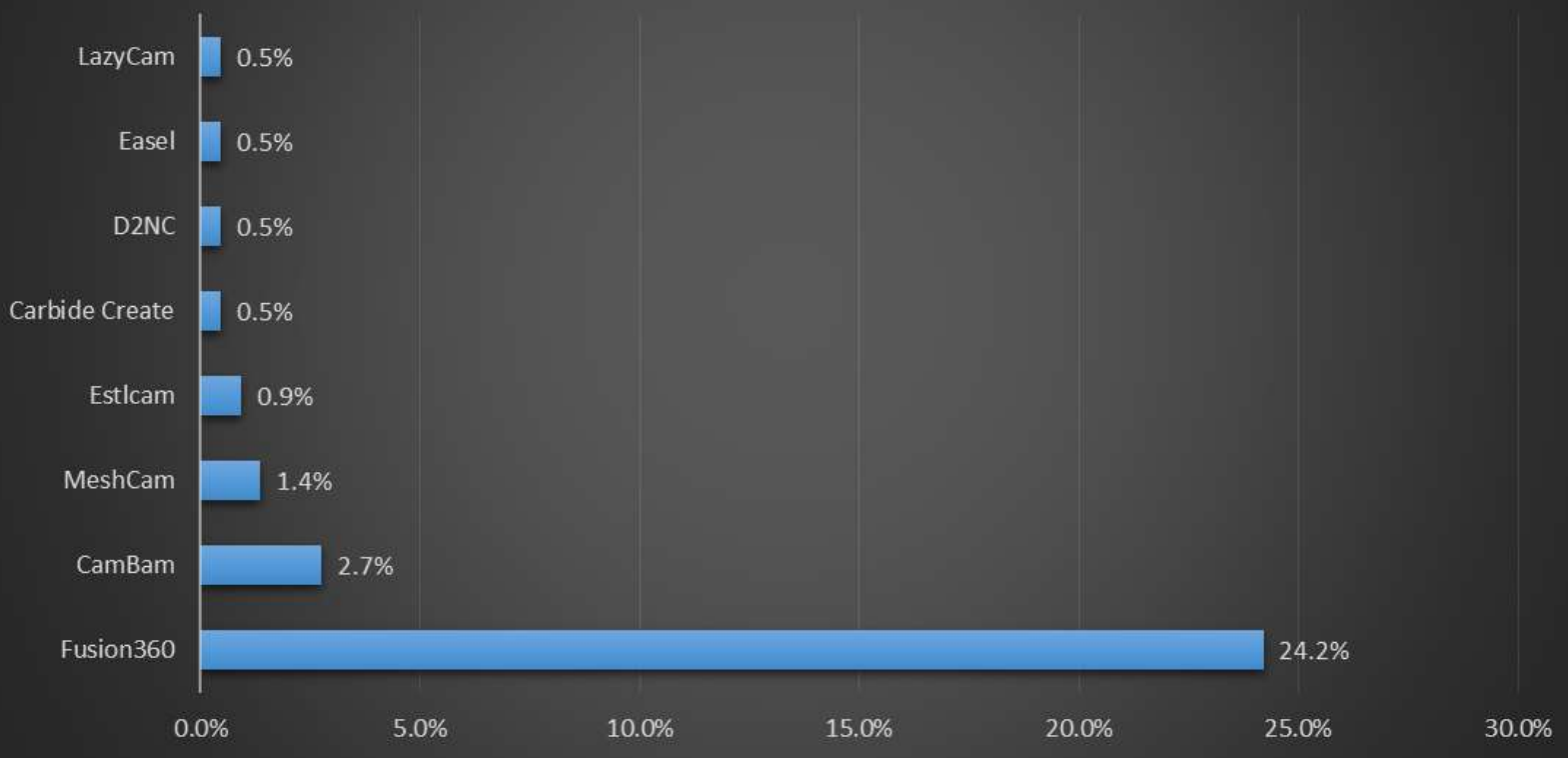


In this category, Vectric / Aspire continues to lead by a good margin. Meanwhile the Mecsoft products have moved ahead of BobCAD to take second place. BobCAD was losing ground last year too, so their slide has continued. Mecsoft also had a strong year of innovation and new product cycles.

# CAM Market Share: Low End

The Low End segment is somewhat confusing because there's a shark in these waters that is in a category by itself: Fusion 360.

Low End CAM Market Share  
CNCCookbook 2018 CAM Survey



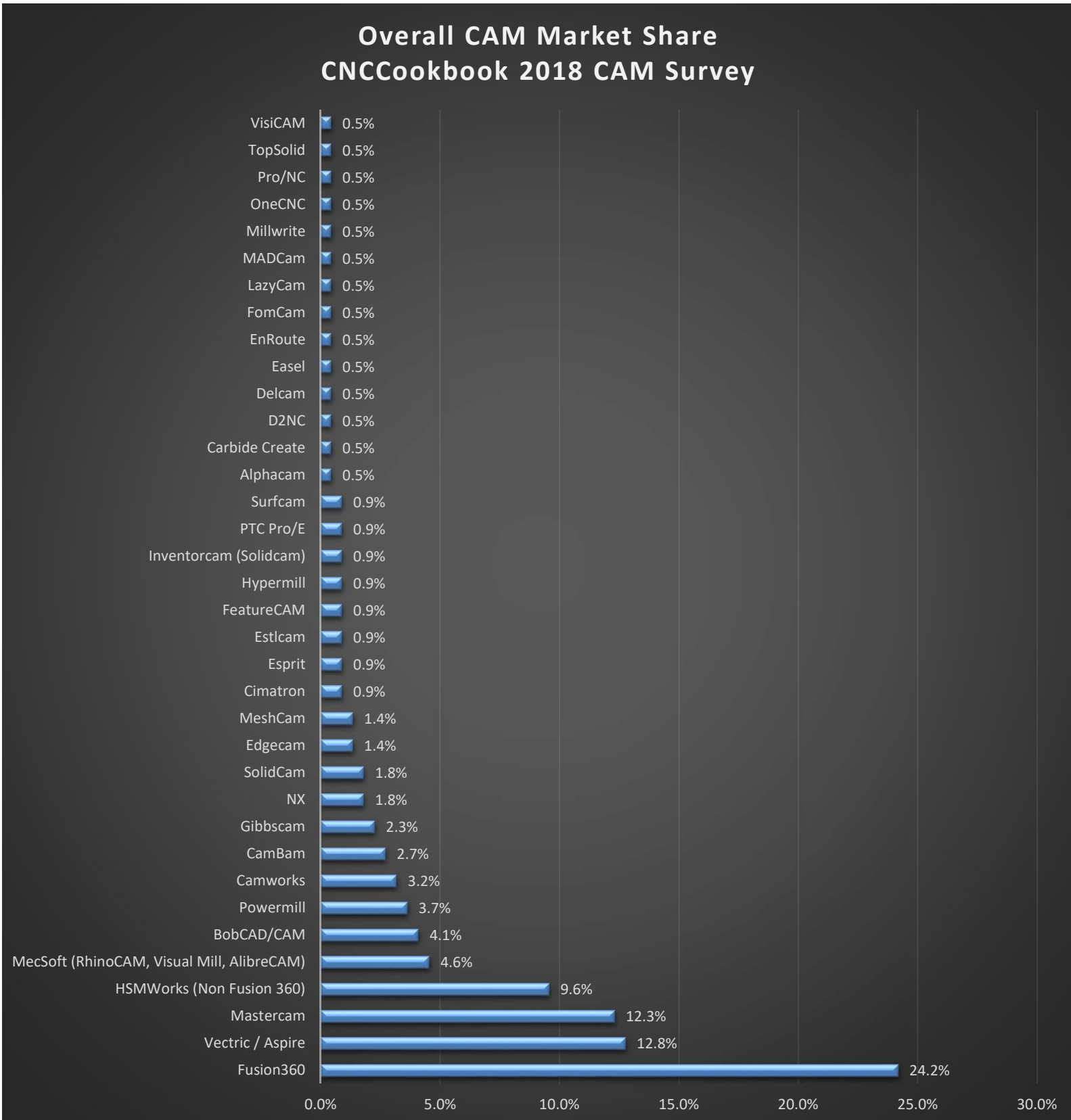
Fusion 360 is both inexpensive, and powerful enough that some shops use it in lieu of High End CAM Software. As such, it is way ahead of the others in the Low End Category.

CamBam continues to be the #2 player, while MeshCam has moved ahead of SheetCam (last year's #2) to become #3.

I use all three products on a regular basis and resell MeshCam, and I can tell you that having more than one package in your toolkit is valuable.

# Overall CAM Market Share

We didn't present overall share last year, but here it is for 2018:



# Customer Satisfaction Awards



Gibbscam took top honors in the Customer Satisfaction area with a score of 1.60. This showed phenomenal improvement from the 2017 scores, and was the highest improvement shown by any package.



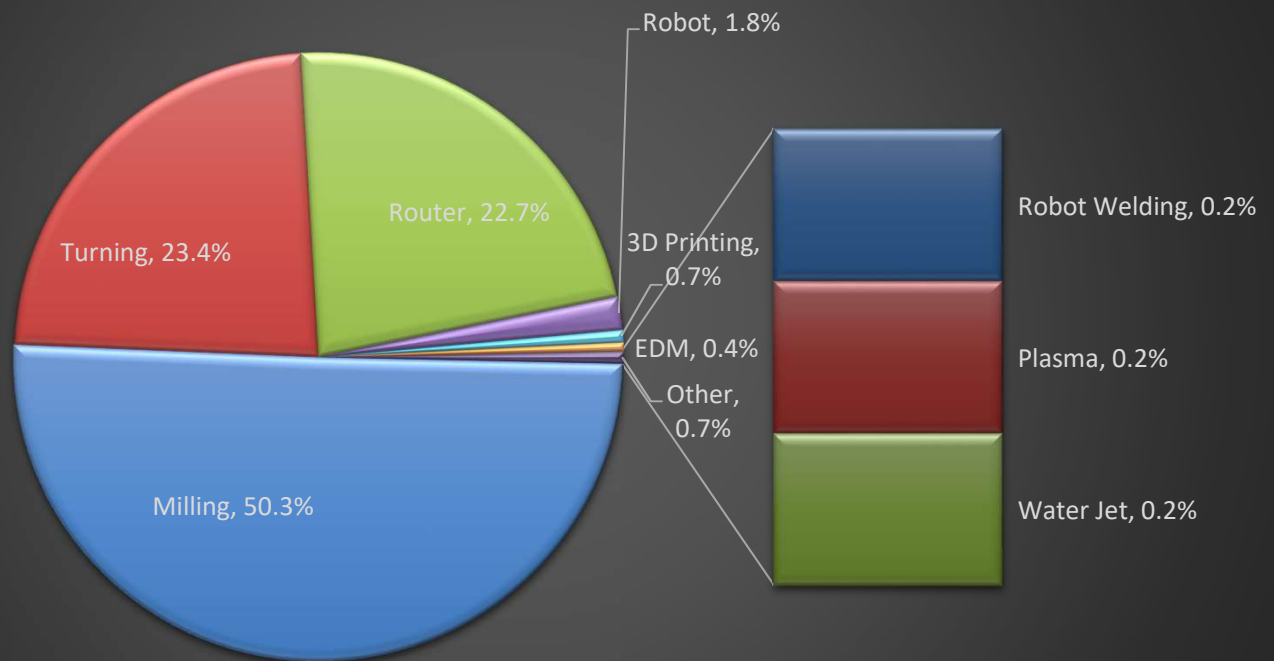
# Silver Awards: Tie



SolidCAM took Silver for the second year running with a score of 1.50. It tied with CamBam, which also had a 1.50 score.

# CAM Demographics

## What type of CNC Work do you do?



In terms of the type of CNC Work respondents are doing, the majority is CNC Milling, followed by Turning and Router work. There's a smattering of other activities that probably would've been larger had they been actual choices on the survey rather than write-ins.

As it was, the largest number of write-ins were by folks working with Industrial Robots. That surprised me, but perhaps it shouldn't have given the times we live in and the drive for ever greater automation.

If we look at trends versus last year's survey, we mostly see that these results are more balanced. Last year, 80% of respondents were doing milling work. Turning and Router were about equal, at 28% (Turning) and 32% (Router).

### Are you evaluating new CAM Software at this time?

This year, 19.3% of respondents are considering new CAM Software to replace the package they currently use. That's up from last year's 17% looking at new packages. This suggests that market share changes may accelerate in the coming year, assuming CNC'ers can find packages they like better than what they currently use.

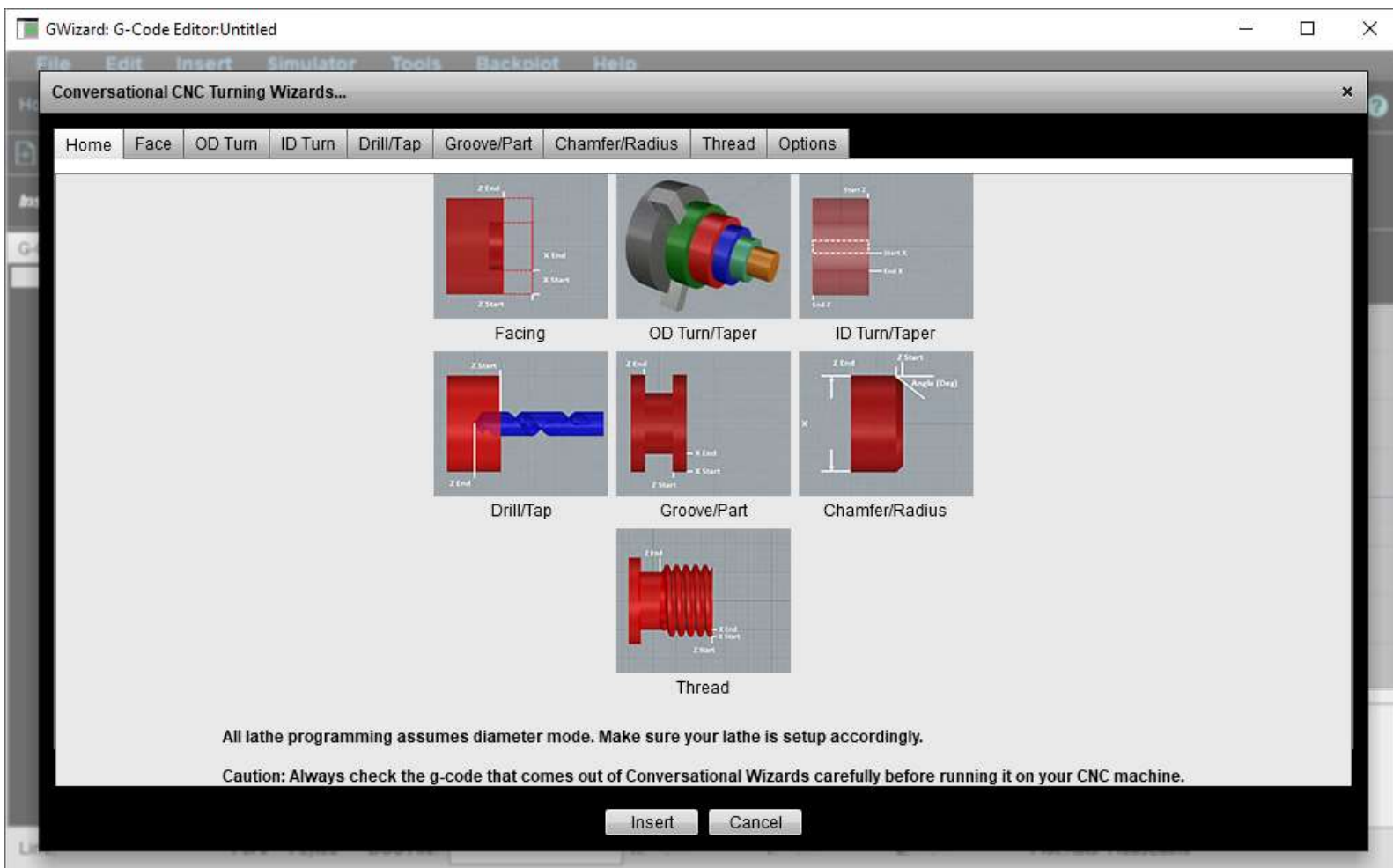
## Have you ever used Conversational Programming instead of CAM to save time?

45% of respondents have used Conversational Programming to save time over CAM. That score is identical to last year's result.

Conversational Programming is a time saving and simpler alternative to CAD/CAM for certain jobs. I like to think of it as making it super easy to do all the sorts of things manual machinists do just by filling out a quick wizard.

Conversational Programming can be delivered as a stand-alone software package like our [G-Wizard Editor](#) or it can be built right into your CNC Control. It can make it a breeze to make simple parts or to add simple features to other parts.

Here's G-Wizard Editor's list of Conversational Turning Wizards to give an idea:



## Is your CAM Software integrated within your CAD Software?

67% of respondents said their CAM is integrated with their CAD. That score is identical to last year's result.

Several folks wrote into the "Other" category that their CAM software was "associative" with their CAD program. What that means is even though they don't run together in the same window, making changes to CAD are automatically reflected in CAM.

That associative linkage delivers 90% of the value of a true integration.

### Do you modify your CAM-generated g-code by hand?

Results:

- Frequently: 10.75% (down from 15.7% last year)
- Sometimes: 50.9% (down from 57.5% last year)
- Never: 38.35% (up from 26.77%)

Being able to modify your CAM's g-code can be a powerful tool. I'm surprised the number doing it has declined, but perhaps that just reflects a less-experienced audience this year.

To get an idea what's possible, check out [37 things your CAM won't do for you that g-code programming can](#). It will show you what's possible with a little g-code programming added to CAM.

Our respondents use this capability to do the following kinds of things:

- Tweak tool offsets and feeds & speeds
- Reposition coolant
- Special technology code
- Add messages for machine operators
- Add safety code
- Modify arc commands for full circle instead of quadrants
- Remove redundant codes
- Optimize to speed up program
- Subroutines to allow speed and feed adjustment at machine
- Tweak for machine differences
- Angle head programming
- Change # of parts being made per run
- Change order of cuts
- Improve peck cycles
- Bar Feeder
- Probe integration
- Skip already cut parts after a crash
- Add pauses so operator can do things like move clamps
- Custom drill cycle macros

## How do you test or proof your CAM-generated programs?

Proofing programs to avoid crashes and other errors is critical before you run them on a machine. Here's how the survey respondents go about testing their programs:

- 10.83% Cut "air" on the machine (down from 17.5% last year)
- 70.76% run the code through the CAM simulator (up from 67.71% last year)
- 10.11% use a stand alone simulator (up from 7.82% last year)

The remainder use some combination of the three.

It's a shame the winner by a land slide is running code through the CAM Simulator rather than a stand alone simulator (although stand alone simulator use is up significantly).

The issue is the way CAM program simulators work. If your CAM program includes a true CNC g-code simulator, then yes, it can be used to help test g-code programs.

The thing is, most CAM programs don't. They just plot the same geometry information that was used to create the g-code output by the postprocessor. This allows for subtle bugs to creep in that are not detectable in the CAM backplot.

For example, bugs in the post cannot be detected this way because the post is downstream of that geometry info. In other words, you aren't really performing an independent test on the g-code. Relying on this type of simulator is fraught with peril.

Because of that, a lot of experienced machinists insist on a separate simulated backplot as a sanity check for their g-code before they'll run it. It doesn't cost very much or take very long to have this peace of mind, so it's something you should consider.

Proving programs is just one of the reasons folks rely on our [G-Wizard Editor software](#).