The Embedded Muse 29

Editor: Jack Ganssle (jack@ganssle.com) October 26, 1998

Y2K

There I tremble to even broach the subject of embedded Y2K - an area where wise men fear to tread - so many people contact me about their concerns about this that I feel compelled to state my beliefs.

First, we know, for sure, that a huge number of products currently in factories and consumers' greedy hands use embedded computers of some sort.

Second, some of these are date-dependent. Millions of date chips (used mostly in embedded systems) were shipped that have an inherent Y2K problem, as they used only two digits to represent the year. Some amount of the code and hardware is therefore surely broken.

Third, we have a date certain, a deadline no amount of marketing spin can push back, when the problem will appear.

Fourth, 80% of embedded system projects are delivered late. The software/firmware industry is notoriously unreliable in meeting deadlines.

So, it seems to me there's little likelihood the Y2K problem will be adequately addressed by Jan 1, 2000. We'll surely see things fail.

What I don't know is the magnitude of the problem. If your kids' electronic toys stop working, the resulting tantrums won't make the economies of the world collapse. Many embedded systems are unimportant gadgets used by people who expect to frequently replace electronics. Maybe the landfills will groan under the weight of discarded techie-toys, as the economy is buoyed when folks race to replace their failed electronics.

But will the electric power grid shut down, or will planes fall out of the sky? This seems unlikely.

More interesting is the possibility of compounding failures. For example, a tiny glitch somewhere might interrupt deliveries to a factory. Since Just-In-Time deliveries have eliminated inventory buffers, that glitch may shut down an entire plant, which in turn

may cascade to more and more shutdowns. We know that the economy is so complex that small forces can result in totally unpredictable - and severe - results.

I suspect that huge single point failures won't be much of an issue, but think we'll see lots of small issues crop up. Hopefully these will damp out, like little wildfires that never combine to incinerate the entire forest. But I think our world is so interdependent that no one can predict the non-linear way these small problems could combine to cause chaos.

There's good news, though, indicated in this recent submittal to the Risks digest (Forum On Risks To The Public In Computers And Related Systems):

Whisky tipplers can rest easy after the announcement last week that a technological crisis that had threatened to halt the flow of Scotch has been narrowly averted. Burn Stewart Distillers, whose brands include Tobermory Single Malt and Wallace Liqueur, has declared that its computer systems will be millennium compliant by the end of the year.

Although the whisky industry is steeped in tradition, it relies heavily on computers to control many aspects of production and marketing. Burn Stewart alone sells about 18 million bottles a year to 500 major customers. Failure to deal with the millennium bug - which threatens global computer meltdown due to an inability to recognise the date change from 1999 to 2000 - could result in widespread disruption of the distilling, bottling and marketing processes.

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Thought for the Week

Come listen to a story 'bout a man named Jed,
A poor college kid, barely kept his family fed,
But then one day he was talking to a recruiter,
Who said, "they pay big bucks if ya work on a computer..."
Windows, that is... PC's... Internet...

Well, the first thing ya know ol' Jed's an engineer.
The kinfolk said, "Jed, move away from here".
They said "California is the place ya oughta be",
So he packed up his disks and moved to Silicon Valley...
Intel, that is... Pentium ... big amusement park...

On his first day at work, they stuck him in a cube.
Fed him lots of donuts and sat him at a tube.
They said "your project's late, but we know just what to do.
Instead of 40 hours, we'll work you 52!"
OT, that is... unpaid... no personal days...

The weeks rolled by and things were looking pretty bad.
Schedules started slipping and some managers were mad.
They called another meeting and decided on a fix.
The answer was simple... "We'll work him 66!"
Tired, that is... stressed out... no social life...

Months turned to years and his hair was turning gray.
Jed worked very hard while his life slipped away.
Waiting to retire when he turned 64,
Instead he got a call and escorted out the door.
Laid off, that is... de-briefed... unemployed...

Now the moral of the story is listen to what you're told,
Companies will use you and discard you when you're old.
So gather up your friends and start up your own firm,
Beat the competition, watch the bosses squirm.
Millionaires, that is... Bill Gates... Steve Jobs...
Y'all come back now... ya hear'

About The Embedded Muse

The Embedded Muse is an occasional newsletter sent via email by Jack Ganssle. Send complaints, comments, and contributions to him at jack@ganssle.com.

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