Ga-Ga Over Graphics

Chris Crawford

Since the beginning of time, I have had a reputation for an anti-graphics philosophy. Ask anybody in the industry—they'll tell you. "Ole Man Crawford hates graphics," they'll say. "He rudely calls it 'eye candy' and expects his audience to make sense out of screenfuls of numbers. He's completely out of touch with market reality, that crazy old fool."

In this essay, I will explain what I really believe. My comments apply not just to graphics, but to all cosmetic factors in entertainment software: graphics, animation, sound, and music.

I'm not Extremist, Everybody Else Is!

My first observation is that the design community has always been ga-ga over graphics. The genesis of this attitude is not hard to understand. In the early days, when we were screwing around with Apple IIs and Ataris, the graphics available on computers were execrable. The best you could get was a 320h x 192v x 2 color display. Even that display taxed the resources of the 8-bit machines to the limit. Each such display ate up one-eighth of the RAM in the machine, and it took several seconds to redraw such a screen, so that animation was an impossibility. Moreover, the floppy disks of the time only held about 100K of data, so a dozen such images would fill a floppy.

Under these circumstances, people sat up and noticed any clever trick that permitted better imagery. Atari's advertising slogan during those years was "More color! More graphics! More sound!" and it hit the nail on the head, for that was exactly what people wanted. My own *Eastern Front (1941)* profited from this yearning for better imagery. It was the first game with a scrolling map, and it used tiles to provide a huge map requiring little RAM. People went nuts over it.

That's what got us started down the path. For many years, the cosmetic capabilities of computers were inadequate. The IBM-PCs didn't start to get adequate graphics until the advent of the VGA

boards just a couple of years ago. Their sound capabilities were limited to silly squeaks and mechanical tones until SoundBlaster boards and their equivalent became widespread. Thus, for most of our history, we've been fighting the cosmetic limitations of our machines. And this battle has warped our thinking.

My parent's generation went through the Depression. They experienced privation and insecurity, the fear that comes from an empty stomach and no knowledge of where the next meal will come from. They struggled and saved and conquered the Depression—but the experience marked them for life. As adults, they spent the 1950s and 1960s in obsessive pursuit of material well-being, to the detriment of their spiritual values. It took the Countercultural Revolution of the 60s and 70s to get some balance back into our culture.

In much the same way, entertainment software designers have been warped by "cosmetics deprivation." They've fought the problem for so long that it has become the only problem that matters, the one overriding issue that determines everything. This generation of designers has no sense of balance.

A Means, Not an End

The fundamental point on which I insist is that the use of cosmetics is a means to an end, not an end in itself. I maintain that graphics, sound, and animation serve to communicate situation, emotion, context changes, and other aspects of the overall gaming experience, but that cosmetic factors are not in themselves the goal of the experience. The essence of the interactive experience lies not in what you see and hear—it lies in what you *do*.

Perception is certainly the essence of the expository media. What you see and hear is unquestionably the essence of a movie. The fundamental difference between exposition and interactivity is that the interactive audience is active. Supporting and enhancing that active role for the audience is the prime objective of all interactive entertainment. Thus, perceptual factors, while playing the central role in expository entertainments, are reduced to a supporting role in interactive entertainments. They are a means to an end, not the end itself.

And what is the end? It is interactivity. Does anybody out there remember interactivity? It's what this whole revolution is supposed to be about. You don't see magazine covers touting "Graphics Entertainment" or "The Animation Revolution". And what is the relationship between cosmetic factors and interactivity? I described that relationship in an essay titled "Fundamentals of Interactivity" [IED V. 7, Number 1: available online at http://www.erasmatazz.com/library/JCGD_Volume_7/Fundamentals.html]. There I explained that interactivity is composed of three fundamental steps: listening, thinking, and speaking. Cosmetic factors contribute to the success of the third step, speaking. That's all. They are necessary—but they are not central.

The industry rejects this notion. The conventional wisdom is that graphics, sound and animation are the defining characteristics of good product. Occasionally you'll hear lip service paid to other

factors, normally in the inarticulate comment that "a game needs good gameplay, too." Even then, the notion is little more than an addendum to the Prime Directive of Cosmetics. Industry wisdom holds that graphics are the end, not the means.

"But Graphics Sells!"

This is the justification proffered for the mania over graphics. "Hey, we're not imposing our own values on the customer, we're just giving them what they want. Products with lots of impressive cosmetics sell. Products with weak cosmetics don't sell. Crawford's theories are all sound; the only problem is, they don't make money."

This argument appears compelling, but its wording belies a catch. Yes, graphics sell—but to whom? Exactly who is buying those graphics extravaganzas? Well, customers, of course—but what kind of customers? I would argue that graphics sells only to customers who value graphics. At this point, the "industry wisdom" response is to assert that, of course, everybody values good graphics. That's self-evident.

Here we come to the fundamental logical misstep: industry people are guilty of assuming that the general public shares their own values. We all love graphics so much, we just can't imagine how anybody else wouldn't share our joy at a clever animation. But the belief that the general public values good graphics is nothing more than an assumption, a wild unsubstantiated theory. We need some solid facts here, facts directly related to the public's real interests.

Sales figures for individual products aren't the most revealing statistics to use here, because their interpretation is dependent on lots of other factors. For example, consider the role that the distribution system plays in distorting the customer feedback. We often call it "the pipeline," a term that suggests that we stuff product into this passive pipeline, and customers purchase what they like. On the contrary, the distribution system is an active element in the equation, one that can reinforce an industry's misperceptions. If the distributors and retailers decide that cosmetics sells product, (as they have indeed done) then they're not going to carry cosmetically challenged product, and, voila! we have our proof before the public even gets a chance to vote with its dollars.

Of course, the whole point of the retail system is to allow experimentation that permits good new ideas to make lots of money, but that experimental opportunity works much better in the positive direction than in the negative direction. If we have a hot new Madonna Cone-Grabbing game, we can try shelf-talkers, self-display racks, posters, and all sorts of positive experiments to goose sales. If the public decides that Cone-Grabbing just isn't entertaining, then we shrug our shoulders; at least we gave it a try. But when it works in the other direction, when our industry expectations run against a class of products, the public never gets that chance to surprise us.

No, we need data that is more fundamental, more pertinent to our problem. And I have just the numbers to make my case. Consider first that there are over 25 million home computers

installed in the United States. Not personal computers, not business computers, but computers actually installed in people's homes.

But now let's look at some other numbers. A typical computer game might sell 50,000 units; a good one will sell 100,000 units. The best-selling computer games sell perhaps a quarter of a million units. Now, those numbers might seem pretty good, but compare them with the installed base of home computers. Our best-selling games achieve a market penetration of 1%.

Look at it this way: 99% of all potential customers turn their noses up at our best-selling games. Sure, graphics sells, but it sells to a very small subset of the possible customer population. For the vast majority of possible customers, graphics doesn't have any proven sales value.

We are doing something seriously wrong, folks. We have missed the boat. The home computer revolution has arrived, millions of people have home computers, and yet we're still selling games by the thousand, not the million. We blew it big time; perhaps it's time to re-evaluate some of our assumptions.

At this point, a possible counterargument arises. It runs like this: "The general public is even less tolerant of poor cosmetics than computer aficionados. They are waiting for decent graphics. We must redouble our efforts to provide graphics, animation, and sound that will appeal to the masses, not just computer nerds. Only then will the penetration rate increase."

This argument collapses when we consider the historical record. We can all agree that graphics, sound, and animation have all improved dramatically over the years. This argument would predict that penetration rates would have increased along with the quality of our cosmetics. But in fact the reverse is the case. In the early 80s, the typical computer game sold about 10,000 units and the best-selling games sold 100,000 units, on installed bases of perhaps a million machines. That's a penetration rate of 10% for best-selling games, ten times better than the penetration rates achieved today. *Eastern Front (1941)* sold about 60,000 units into an installed base of half a million units—a penetration rate of better than 10%.

Thus, penetration rates have decreased even as cosmetic quality has increased. What more proof do we need that better graphics is not the way to the promised land?

"But Graphics are Necessary to the Fantasy"

This is another argument in defense of giving primary importance to graphics. "If the player is moving around in a dungeon, or flying an airplane, or wandering in a forest, shouldn't we show the dungeon, sky, or forest as clearly as possible? Aren't detailed walls, textured landscape, and realistic trees better than line drawings or crude sketches?"

This argument belies the narrow-minded obsession that designers have with spatial issues. Notice that all three examples involve moving around in a spatial universe. Visual stimuli are necessary

for successful navigation, and so, yes, better graphics are essential for such games. But why must our games always be so cloyingly spatial? Why are we always navigating, targeting, and maneuvering? How many movies focus their attention on the spatial behaviors of the characters? The design community has missed the boat here; we spend all our time designing games about trivia, when the rest of the world cares more about non-spatial factors. And if you turn your attentions to non-spatial factors, this argument in favor of graphics loses much of its force.

"Better Graphics Can't Hurt and Always Help"

"C'mon, Chris, you can't be claiming that, given a choice between better cosmetics and worse cosmetics, we ought to choose the worse cosmetics. Any product will be more entertaining if it has better imagery, better sounds, and better animations."

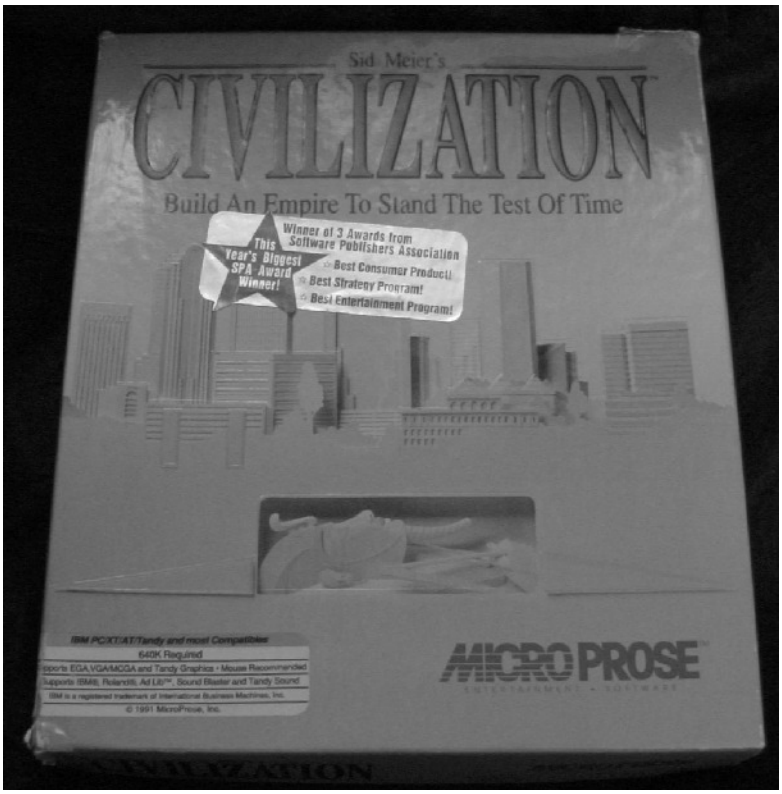
This argument ignores business realities. Products are built on budgets with schedules. You have only so much time and money to put into the product. Every dollar spent on cosmetics is a dollar that is not spent on the other elements of interactivity (listening and thinking). Every day's work devoted to cosmetics is a day that is not devoted to interactivity. Better graphics always means poorer interactivity. You get what you pay for. If you pay for better graphics, you don't get better interactivity—you get better graphics.

"But Text is Boring"

This is a straw man argument. It presumes that the only alternative to state-of-the-art, budget-breaking graphics is plain text on a black background. The reality is that we have a wide range of options, most of which are graphical but don't push the edge of the envelope.

Recapitulation

I argue against the extremist notion that cosmetics are the primary criterion for quality in interactive entertainment. I instead argue for the notion that cosmetics play a vital supporting role in successful interactivity. We should design our products with as much graphics, sound, and animation as is necessary to support the interaction without detracting from it.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