

How to Buy a Motion Capture System

by: [Scott Thomson](#)

More people are getting into motion capture. More people who don't know much about motion capture are getting into motion capture. This, of course, leads to people who will take advantage of this lack of knowledge. You could see many examples of this at GDC this year.

I'm not going to go through the obvious steps in buying a motion capture system like analyze your requirements, your budget, your application, and your space. All of that is easy. What's not so easy is separating the good motion capture systems from the bad. While it can be a matter of opinion what is good and what is bad, there are some aspects of motion capture you should think about before committing to a motion capture system.

Beware of the claim "No Clean Up Required"

A claim I have often seen is "No clean up required." There is no dispute that Vicon, and to a lesser extent Motion Analysis, are the premiere motion capture systems. These are high end, high-priced motion capture systems that, in the right hands, can provide incredible motion capture. Even the data from these systems needs clean up. When a company makes this claim for a system that is less than \$100,000, they either have no sense of what "good" data looks like or are trying to fool customers who do not know much about motion capture. Either way, I would not buy a system from them. I see this claim and I wonder what else they are lying about. Beware of the claim "No clean up required"

Beware of the Video

In marketing it is called "bait and switch". The video shown on the home page shows great motion capture data. Is it from the system you are about to buy? How much time did it take to get the raw data cleaned up for this video? Are you buying an 8 camera system based on data you've seen from a 24 camera system? Beware of the video.

Have you seen it working?

There are some motion capture companies that show up every year at trade shows like Siggraph and GDC but never get their system running. If they are running then they may be on an inaccessible stage. Are they moving in slow motion? Are they doing a predefined set of moves? Can you interact with the motion capture artist? If you cannot ask the artist to do some motions you pick then no, you have not seen the system working.

Does the character walk across the floor?

A normal walk is one of the hardest motions to capture because everyone has a sense of what it should look like. There is no valid reason for having a character pinned to the wall. If a company tries to explain why, walk away, they are hiding

something. Before I buy a system I want to see the character, as raw data, walking across the floor.

How much space do I need and what is the size of the motion capture area?

Vicon is the leader in motion capture but the system needs a large, stable area. There are some systems that claim they need no markers, just video cameras. Ask how much space is required for how much capture area. It probably needs a large space for a small capture area. Ask about the footprint of the capture area. This is the area on the floor the artist is able to move about in. Also ask about the vertical capture area. Can you capture below the knees, can you jump? Some systems have small footprints and small vertical areas making them virtually unusable. Space required and capture area are two important aspects of a motion capture system.

What can I do with the data?

You are a customer new to motion capture. You've found the perfect motion capture system for your application. Where do you go for support if you have questions about using the data? Can you call the hardware company and ask them how to get the data from the viewer software, to an animation program, and then into a game engine? If the company does not know how to use the data or does not know how to clean up the data, walk away. I would want to buy from a company that knows what you can do with the data.

Motion capture can be fun and productive, or not. Ask these important questions before you buy a system. It will make a huge difference to your motion capture experience.

Happy Motion Capturing!

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