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By Hope Gaines

Excerpt From Article Entitled:

Software Engineering is a Winner

The Key Is A Willingness To Work Hard and Remain Flexible

Technology Ladder

Kathy Song is a senior project manager employed by InStep Software, LLC, Chicago, IL, a small firm with approximately 50 employees, about 40 of who are software developers. InStep was founded in 1995 by a group of engineers from Chicago-based Sargent and Lundy, LLC as a custom development shop focused on engineering-based software applications. In 1999, the company expanded and purchased a California-based software company called Industrial Peer-to-Peer (IPPC), LLC and began marketing IPPC's core product eDNA, a data historian used widely in the North American power and telecommunications industries.

InStep now consists of three business units: consulting; products and telecom, which has software interfaced to over 20% of the cellular infrastructure in the US. InStep has expanded its business to companies in Asia and Europe as well. The company has remained privately funded and profitable throughout its existence. Song manages several companywide projects for a giant telecommunications client, including one for customer service representatives. Born in Korea, she came to the United States and the Chicago area with her family when she was seven and has lived and worked there her entire life.

Her senior position, with varied responsibilities, is the culmination of years of education and working up the technology ladder. "I come from a development background, so I have perspective to oversee all those activities," she explains. Song earned a bachelor's degree in computer science engineering at the University of Illinois-Urbana, then worked as a consultant. She eventually joined a big engineering company as a software engineer where she interacted with other consultants and clients, then would do the development.

During several years there she gradually took more and more ownership of projects until she was managing small ones from beginning to end, ultimately working into actual project management, where she takes sole responsibility, not only for the project but for the supervision of individuals on the project team.

Song supervises the design of programs using a team of system architects, software engineers, and developers. The process begins when the system architect takes a problem and figures out how to design the overall architecture of the application – much as a building architect would design a structure. Then software engineers design the details using architect's specifications, creating modules that are joined to create the perfect software. Mostly serving a management and coordinating role, Song still occasionally gets directly involved with this hands-on programming.

Song acts as the general contractor, making sure each individual on the team communicates not only with the client, but also with one another. "I can make each player accountable, and manage every aspect of the project. I ask questions and talk to the client, acting as a central point to make sure their needs are met," she comments. "Budget and schedules are just two of the factors that she must keep in mind.

For a software engineer career earning a college degree is a good choice. "Education does help." Song notes. "It makes advancement a little bit easier. Education gives a core background to be able to learn the basics. To be able to really move up, you need to go to school."

But there are other routes too, "I've seen people with passion for this work, and if they exhibit that enthusiasm, companies will respond. They don't go through formal training, but just absorb everything. It kind of works both ways."

To get a heads up though, Song suggests pursuing an education, and looking for internships or even volunteer work. Offering to work on a Web project, for example, presents an opportunity to get hands-on experience, plus the fact that you get experience.

Song recommends certificate programs as another good way to get the formal core training without going through a full college program. "There are many certificate programs out there, which is beneficial. It depends on the kinds of analytical skills you have. And, for someone contemplating a change in career, certification may be the perfect solution."

Energy and Ambition

"It seems to be a lot about energy and ambition. If you have good analytical skills and pay attention to detail, I don't see anything stopping you from entering the field," Song remarks, "It has to do with taking a lot of responsibility, proving to your managers that you are responsible and that you can do the job in a timely manner and can communicate with a project team. Then your responsibilities grow because they trust you and are able to give you a task that you will run with and not need too much direction."

Working your way up often depends on where you work. Song considers the small diverse company she works for to be a plus, because if you want that added responsibility, it's your choice to exhibit it and prove it to the people around you. Fewer workers mean that each individual must take on many tasks. She speculates that a larger corporation may have a more bureaucratic structure, with more defined tasks for each person, making it difficult to learn something that is not within a certain job description.

Song sees opportunities for women growing, but still at a slow pace. She attributes her viewpoint, however, partly to the fact that she works for a company that has a small, stable workforce with few new employees of any specific ethnic background or gender. "But I see the trend, in the news, where high-school students are getting into that area and are not intimidated by the notion that they can't do well in math or science. There is larger enrollment for women in college in those areas. I get a sense that it is growing."