



Professions for Web 10.0

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When the government refers to creating new jobs, we usually think that refers to creating “more” jobs in current occupations. So, for example, when you think about Internet computing, cloud computing, or Web-based software engineering, you initially might consider the traditional jobs such as analysts, architects, designers, developers, and testers for areas of information, network, software, security, and databases.¹ More contemporary positions could be associated specifically to social media, such as blogging, transcription services, search engine evaluation and analysis, and customer relationship management.² However, increasing access and the need to understand high volumes of data (such as Big Data analytics) and the availability of computational resources (cloud computing) could unlock entirely new areas and occupations.^{3,4}

A motivation of cloud computing is to reduce the burden of information technology and system management from end users by delegating this responsibility to cloud providers. In this way, end users can focus on core business endeavors while cloud providers offer easily manageable, highly elastic, and pay-as-you-go resources. As cloud computing becomes more popular, users are generating more complicated business processes that could, in fact, span multiple clouds. It's this new distributed workflow environment that will require forward thinking.

With regard to Big Data, information will no longer reside in standard relational databases, but instead be distributed across data stores in clouds and also in users' individual data stores. Engineers will need to introduce intelligent distributed data analysis frameworks where users can analyze sampled subsets of information in addition to situational awareness derived from a more global view. Operational research specialists will be required to develop new simulation

approaches to understand how to efficiently switch between sampled data and larger datasets' lower-level, more detailed analysis.

Most social networking sites have between 10 and 200 million users. Sampling and evaluating information continues to be a significant task for business, management, or information systems specialists to predict behavior such that this behavior informs marketing and sales. Understanding social networks becomes a Big Data problem when business, management, or information systems specialists hope to predict behavior with the intention to ultimately enhance marketing and sales.⁴

As we move from Web 3.0 to (perhaps) Web 10.0, the Internet will enable companies to be even more integrated with their consumers' Web-based information and personalities. Here, I present a few examples of where I believe there might be even more contemporary employment opportunities in the future.

Web resource management (wealth managers of the Internet). Just as wealth managers optimize their clients' financial assets, Web resource management engineers will manage the computational and storage assets of corporations and consumers. As information storage and computational resources become more of a commodity, companies will begin to accumulate contracts with cloud providers, perhaps separately for each of their business functions. Computational resources and storage capacity might eventually be represented as a portfolio that must be invested incrementally across the underlying units within larger enterprises. This will eventually represent a specified budget limit as a constraint, and a new challenge will be to determine, dynamically, the most appropriate level of resources to allocate to the underlying business units. Optimizing this

portfolio could have implications for the overall enterprise's profit margins.

Personalized self-tuning specialists.

The ebb and flow of social networks and public opinion is quite volatile. In this environment, the demand for products will fluctuate widely and businesses will need to be adaptive. For example, within an e-commerce business, the service that's responsible for processing book orders might need higher priority than the service that records users' browsing behaviors at a time when a specific title is associated with a viral Internet following. Self-tuning infrastructures and professionals will need to identify and react to this dynamism

and reallocate cloud resources on an ongoing basis.

Not a personal shopper, but a personal avatar. Personal shoppers for celebrities are tasked with acquiring clothes and other products for their employers to save them time. Celebrities and high-level officials will require personal assistants who can, more or less, manage their entire online image. Although this is a present-day job, in the future, Web personas might allow for actual avatars where the consumers use likenesses of themselves as opposed to real-time video imagery. Personal avatars could ultimately allow very busy people to be in multiple places all at once.

With the Internet's additional job functions, we'll be able to monetize activities more than ever before. Moreover, services will be far more personalized with the onset of more computation and access to Big Data. The January/February 2016 special issue on "Internet Economics" discusses various approaches for monetizing the Internet. I would like to thank our guest editors Arpita Ghosh and Ashish Goel, along with our committed reviewers, for producing this special issue. □

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