# Prabuddha Biswas

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**SUMMARY:**

Seasoned technology executive with diverse experience in high performance data management architectures, analytics driven personalization, location based services, mobile and ad/promotion serving applications. I shepherded several new initiatives where I conceived the idea, gathered requirements, developed the architecture, built and managed the team, and successfully delivered quality products on a tight budget and schedule. Subsequently, I focused on fostering the business partnerships and vendor relationships. I also worked with the field consultants and early-adopter customers. I have skillfully handled projects with components developed in groups distributed across the globe. I have demonstrated the ability to simultaneously manage multiple, complex projects to deliver innovative products with stellar business results. I have improved team productivity and product quality using strong software development discipline in both a startup and mature team setting.

I have demonstrated business acumen by taking leadership roles in defining product strategies based on market demands, competitive pressures and project team strengths. My strong communication skill is invaluable in building good relationships between groups, ‘selling’ new concepts and projects to stake holders, partners and customers. I have built teams with great camaraderie and infused them with my excitement. My technical strengths are evident from my education, projects, patents and published papers.

**EDUCATION:**

1. Executive Program, MIT Sloan School of Business.
2. M.S., Ph.D. in Electrical and Computer Engineering, University of Massachusetts, Amherst.
3. B.Tech in Electrical Engineering from the Indian Institute of Technology (IIT), Delhi.

**EXPERIENCE:**

**SVP Engineering, Medio Systems, June 2011 – present.**

1. ***Big Data Analytics to drive customer understanding, engagement and monetization***

Medio allows their customers to easily collect application usage information which is then used to derive rich understanding of the customer. The data is then used to drive predictive analytics models that help to engage and monetize the customers in an automated fashion in real-time. Medio is democratizing the analytics landscape by making large scale data collection and advanced, predictive technologies accessible to companies of all sizes.

1. **Achievements:**

* Took over a set of engineering teams developing products in stove pipes and rationalized all the products on one common platform.
* Created small feature teams with members from product management, development, quality assurance and operations working closely in an agile fashion.
* Introduced practices that provide clear visibility into all aspects on engineering.
* Strong emphasis on scalability and performance of complex distributed systems on open source technology.
  + Cloud based platform (Hadoop, Cassandra, HBase) ingests over a billion events per day.
  + Recommendation system serves over a billion offers/promotions per month.
  + Over 100 million unique users in over 100 countries.

**VP Engineering, Smart Desktop/ Director, VMware, May 2008 – May 2011.**

1. ***Intelligent way to organize and search your personal cloud data***

Smart Desktop allows users to organize their data by associating them with projects, topics, or individuals. It also provides a resource ranking algorithm that makes personal information search more relevant. This project was based on a patent pending machine intelligence technology. I was brought into the team to provide experienced leadership to take the product to market. Soon after we delivered out final beta the company was merged with Pi and Mozy Corporation. The mission of the new venture is to help people protect and manage their ever increasing body of personal digital data.

1. **Achievements:**

* Brought discipline to a university startup to take a research project to a finished product.
* Introduced a more agile development environment. Created small feature teams with members from product management, development and testing working closely.
* Took a fresh view of the project by going back to interaction design. Employed a design firm to develop user personas and a set of clear user scenarios. Then focused development and testing on those scenarios. Performed usability studies to understand the strengths and weaknesses.
* Performed system performance analysis to optimize system responsiveness. Enforced performance metrics.
* Developing iPhone, Android and Blackberry mobile clients.
* Advised the marketing team on analytics driven customer channel analysis.
* Managed development, QA and product management teams of about 50 people.

**Director of Technology, Amazon.com, May 2006- April 2008**

1. ***Online demand generation and world-wide marketing***  
   Took the helm of a group with negative growth and low morale in the face of Goggle’s stiff competition. Transformed the team into an unit that delivered over $3B of traffic to the Amazon retail platform through affiliate sites. We put in place a development methodology that could react quickly to rapidly changing market needs and focus on long term projects. We delivered exciting products with high quality and operational efficiency. We extracted page context, mined user behavior information and aggregate site statistics to deliver appropriate product advertisements on affiliate sites. I introduced Agile development methodology to the team and brought a new focus on customer data analytics and interaction based design philosophy.  
   **Achievements:**

* Delivered traffic growth to Amazon.com through the affiliate sites that far exceeded expectation.
* Significantly improved the overall health of the program as reflected by the number of new affiliates signing on to the program, the number of affiliates driving sales to the site, the cost to acquire a customer and the “long term value” of the customer.
* Delivered many innovative products in a short period of time
  + Contextual advertisements
  + Affiliate storefront tool
  + Interesting Widgets that promote Amazon products and services
* Used product sales data to optimize the data feeds sent to comparison-shopping sites to save millions of dollars to the Amazon bottom line.
* Introduced a focus on user-interaction based design philosophy. Improved site design and the usability of our products and services. Studied web access behavior and applied analytics towards decision-making.
* Improved operational efficiency. We have tripled the throughput since 2006 at constant hardware cost. Started an “operational excellence” team in Bangalore, India.
* Responsible for affiliate payment system with SOX controls.
* Managed development, QA, operations support, technical product management and user experience teams of over 60 people.

**Director of Software Development, Oracle Corporation, 1996-2006**

Lead software development teams working on two new areas for Oracle.

1. ***Location Services***  
   Proposed a patented idea of a location aware application infrastructure based on the Oracle database and Application Server. The platform facilitates the development of mobile applications like field service, asset management and expense reporting on the Oracle stack. The mobile phone technology and the world of Internet were coming together and we saw an opportunity to personalize the interaction with the user’s location. The location services platform also allows content to be integrated from the Internet or from the database. The framework supports load balancing and rule based data source selection. We provide a Java client that is integrated into the Oracle Java IDE. We also provide a Web Services interface and client libraries for the popular mobile platforms. Worked on prototype telematics projects with Ford and Denso. Managed the product through three complete release cycles. Managed a globally distributed team on three continents.   
      
   **Achievements:**

* Conceived of the idea and proposed the architecture for incorporating location services in the Oracle Application Server product. Received two patents on the architecture.
* Worked with existing customers and product mangers to refine the concepts.
* Developed a team and delivered on every aspect of product development process – specification, design, development, testing, integration, documentation and training.
* Develop the detailed task list, schedule, resource estimates and the phased execution plan.
* Represent project to senior executive team for architecture approval and funding.
* Responsible for developing the business relationships with content partners and working with field consultants for final delivery to customers.
* The Oracle Application Server is recognized as one of the industry leading middle-tier platforms and analysts recognized location services as one of the strong and distinguishing features of the product.
* Presented project with Oracle Chief Marketing Officer in keynote address at Oracle World.

1. ***Oracle Database Server Technology***  
   Developed a patented algorithm to efficiently manage the Oracle buffer cache. Worked on optimizing OLTP and data mining queries. Developed algorithms for efficient indexing of multi-dimensional data. Led the engineering team developing the framework in the Oracle database to enable storage, retrieval, dissemination and analysis of sensor data – the Sensor Data Model (SDM). The SDM also allows applications to flexibly define sensor metadata and environmental characteristics. The framework provides a web services front end and an Oracle database repository. It includes indexing schemes to efficiently access sensor data and it links ‘raw’ sensor observations to business events.   
     
   **Achievements:**

* Received patent for Oracle buffer cache algorithm.
* Query optimizations produced record breaking benchmark results.
* Responsible for developing Oracle’s Sensor data management strategy and architecture.
* Led the engineering team developing the Sensor Data management framework.
* Delivered pilot version for NASA in 6 months.
* Deployed pilots at major retail, logistics and government customer sites.
* Represented Oracle on industry standards committees.
* Mentored team member into both Harvard Business and MIT Sloan MBA programs.

**Technical Director, Digital Equipment Corporation, 1992-1996**

1. Led the team responsible for the complete suite of performance analysis tools for Windows NT, Digital Unix and OpenVMS. The product had a client data collections component, a centralized repository and a server based performance advisor component. The system analyst could monitor real-time performance, set alert rules and also perform capacity planning.  
     
   **Achievements:**

* Led a group of experienced team members with major contentious issues.
* Leveraged my background in operating systems to lead the development of complex rules to detect system performance degradations.
* Developed detailed memory management, I/O subsystem and CPU scheduling models for accurate capacity planning.
* Achieved annual revenue around $40 million (in 1995).
* The profitable product division was sold to Computer Associates in 1996.

**R&D Software Engineer, Digital Equipment Corporation, 1985-1992**

1. Worked on the OpenVMS file system development and All-in-1 office productivity software suite. Developed analytic models for software performance that led to significant design improvements. Used disk I/O trace data collected at customer sites to drive simulation models. Project led the design and development of the storage architecture. Responsible for the design analysis of a new log-based file system.  
     
   **Achievements:**

* Hands on experience in software development, testing, performance analysis through 2 major release cycles.
* Selected for the “Graduate Engineering Education Program” fellowship to pursue Ph.D. degree. This is a full salary fellowship for higher education awarded to outstanding engineers.
* Finished Ph.D. in 2 years (1990-1992). Received a patent on storage cache design based on thesis.
* Received “Outstanding Achievement” awards from the Divisional Vice President.
* Rose rapidly from Software Engineer to Senior Engineer and then to Principal engineer in 4 years.

**PATENTS:**

I have 7 patents in the areas of:

1. Location-aware, mobile application infrastructure (Patent #6594666, 6954764, 9993670)
2. I/O, data management and file system caching. (Patent #5390318, 5636355, 6378043, 11433379)

**PUBLICATIONS:**

1. “Location based Content Syndication”, IEEE International Conference on Mobile Data Management, Berkeley, CA, January 2004.
2. “Location Caching in the Mobile Middleware platform”, 3rd International Conference on Mobile Data Management, Singapore, January 2002.
3. “Location based Service Visibility”, INET 2001 Conference, Stockholm, June 2001.
4. “Location Based Services”, Chapter in book on Mobile Computing, Kluwer publisher, 2001.
5. "Location-aware Application Infrastructure", Proceeding of the W3C and WAP Workshop on Position Dependent Services, Sophia Antipolis, France, February 2000.
6. "Caching Issues in Database Systems", Proceeding of the 1st International Workshop on Software Performance, Santa Fe, New Mexico, October 1998.
7. "End-to-End Response Time Analysis ", Proceedings of CMG'97 International Conference on Management and Performance Evaluation of Computer Systems, San Diego, California, December 1997.
8. "Performance Analysis of Distributed File Systems with Non-Volatile Caches ", Proceedings of the 2nd International Symposium on High Performance Distributed Computing, Spokane, Washington, July 1993.
9. "Trace Driven Analysis of Write Caching Policies for Disks", Proceedings of the 1993 ACM Sigmetrics International Conference on Measurement and Modeling of Computer Systems, Santa Clara, California, May 1993.
10. "Analysis of File I/O Traces in Commercial Computing Environments", Proceedings of the 1992 ACM Sigmetrics and Performance'92 Conference, Newport, Rhode Island, June 1992.
11. "File and Directory Access Characterization of VAX/VMS Environments", Proceedings of the 10th International Conference on Distributed Computing Systems, Paris, France, May 1990.
12. "Modeling the Memory Management System in VAX/VMS for Capacity Planning", Proceedings of CMG'90 International Conference on Management and Performance Evaluation of Computer Systems, Orlando, Florida, December 1990.
13. "Characterizing and Modeling Ethernet Performance of Distributed DECwindows Applications", Digital Technical Journal, Vol.2, No.3, Summer 1990. Also presented at the 1990 ACM Sigmetrics Conference Poster Session, Boulder, Colorado, May 1990.
14. "Modelling Contention Sensing Memory Management Systems: A VAX/VMS Case Study", Digital TR-651. Presented at the 7th International Conference on Mathematical and Computer Modeling, Chicago, Illinois, August 1989.
15. "Performance Analysis and Modeling of an Office Server in a Distributed PC Environment ", Proceedings of CMG'88 International Conference on Management and Performance Evaluation of Computer Systems, Dallas, Texas, December 1988.
16. "Load Balancing in VAXclusters ", Digital TR-652, Presented at the 1988 ACM Sigmetrics Conference Poster Session, Santa Fe, New Mexico, May 1988.