IBM Almaden Research Center

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Career Planning (?) in a Research Lab

CRA Career Mentoring Workshop

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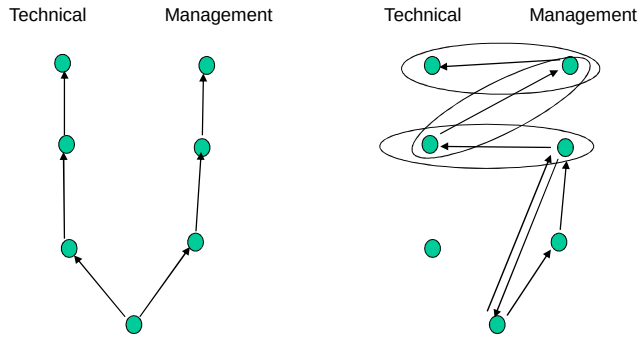
Two Career Paths or One?

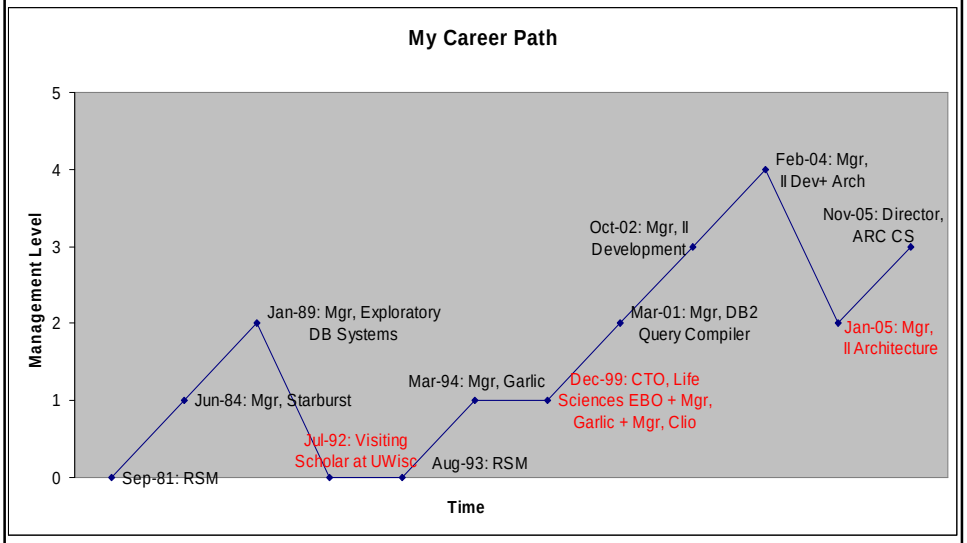


- Technical
  - –Research Staff Member -> (Distinguished Engineer) -> Fellow
  - –Research Scientist -> Senior Scientist -> Distinguished Scientist -> Fellow
- Management
  - –RSM/SWE -> project mgr -> dept mgr -> functional mgr -> Director -> VP (etc)

Who am I? Technical view

- Pre-history:
  - AB in Applied Math from Harvard
  - PhD in CS (distributed systems) from UT Austin
- Research 1: Research Staff Member (1981-2001)
  - Distributed databases -> extensible databases -> data-less databases (heterogeneous data federation) -> schema mapping, integrating life sciences data
  - Sabbatical year at Univ. Wisconsin (performance analysis) in '92-3
- Development: Development manager (2001-2005)
  - Query processing, federated databases, integration tools and systems, grid computing, life sciences
  - Appointed Distinguished Engineer in 2002
- Research 2: Director of Computer Science, ARC (2005-now)
  - CS theory, information management, human-computer interaction, health informatics
  - WW lead for Information Software Research (2007)
  - Appointed IBM Fellow in 2009
  - WW lead for Exploratory Research in CS, Math, Services Science (2009)

Who am I? Management view



Goal: Be a Senior Technical Leader

- Who is a Senior Technical Leader?
  - –Title could be anything
  - –In any division, any geography/country, any specialty
  - –Important people listen to them
- Role? Should involve
  - –Business:
    - •Key technical consultant and strategist
    - •Shape business decisions
      - –on technology and technical implementation, skills, hiring, processes, etc.
  - –Technical:
    - •Provide thought leadership
    - •Provide technical guidance and leadership to critical projects
    - •Broad cross-functional responsibility for a major program, significant engagement or account
    - •Develop, document intellectual capital used by others internally & externally
  - –People:
    - •Help define what people learn for your technical discipline and/or profession
    - •Mentor / guide other technical individuals in their professional development

Goal: Be a Senior Technical Leader

- Who is a Senior Technical Leader?
  - –Title could be anything
  - –In any division, any geography/country, any specialty
  - –They have influence on a personal and public level
    - •They are influencing the company or university and (possibly) the world
    - •They are mentoring the next generation – and sought for that
  - –People know their name
- What does (must) a senior technical leader do?
  - –Develop a pipeline of future technical leaders
    - •The loss of any individual shouldn't kill the institution
  - –Set and execute on technology directions
    - •In a company: Make money for share holders
    - •In research: determine what is taught, studied, researched and how
  - –Extend & grow the organization's technical (& business) reputation
  - –Own and run the organization from a technology perspective
  - –Impact the organization, the community, the industry, the world

The *Best* Technical Professionals (Laura's 5 I's)

- Innovate
  - Solve problems in new ways
  - Invent new algorithms, system constructs, etc
  - Patent and publish their work
- Initiate
  - See new opportunities and pursue them
  - Anticipate issues and head them off
  - Think broadly about how to be more effective
- Implement
  - Make sure that the task gets accomplished -- well
  - Take responsibility for all aspects of the task
- Influence
  - Shape how key players think about the task, technically, motivation, etc
  - Work within and across teams
* Impact
  - Create quantifiable improvements in quality, function, performance, process...
  - Enable increased customer satisfaction and/or revenue
- With increasing effects as level increases

Technical Depth, Breadth are Table Stakes

- Communications skills
  - –Correct, concise, clear
  - –Match form and style to occasion, recipient
- Connections: A network of real relationships
  - –Mentors, mentees, teams
  - –Visibility
- Basic skills
  - –Prioritization and time management
  - –Analytic skills
  - –Negotiation skills
  - –"Business" sense – understanding the broad goals
- A good character
  - –Trustworthy, caring, committed, courageous
  - –Positive, empowered and self-aware
  - –Share the credit, take the blame
- Credentials
  - –Vita, patents, publications, awards
- Avoid derailment: personal, interpersonal, organizational blunders
  - –Ability to work in a matrix is often essential

The Moral of the Story

- Technical leaders are people who are listened to
  - –They influence the institution, and its people
  - –Work to have influence, not for the title
- Technical knowledge and skills are the foundation
- Personal characteristics are the key
  - –Know thyself
  - –Grow your positive attributes
  - –Avoid derailment factors
- Good leaders need good followers
  - –Grow your students and your teams
  - –Think people, people, people