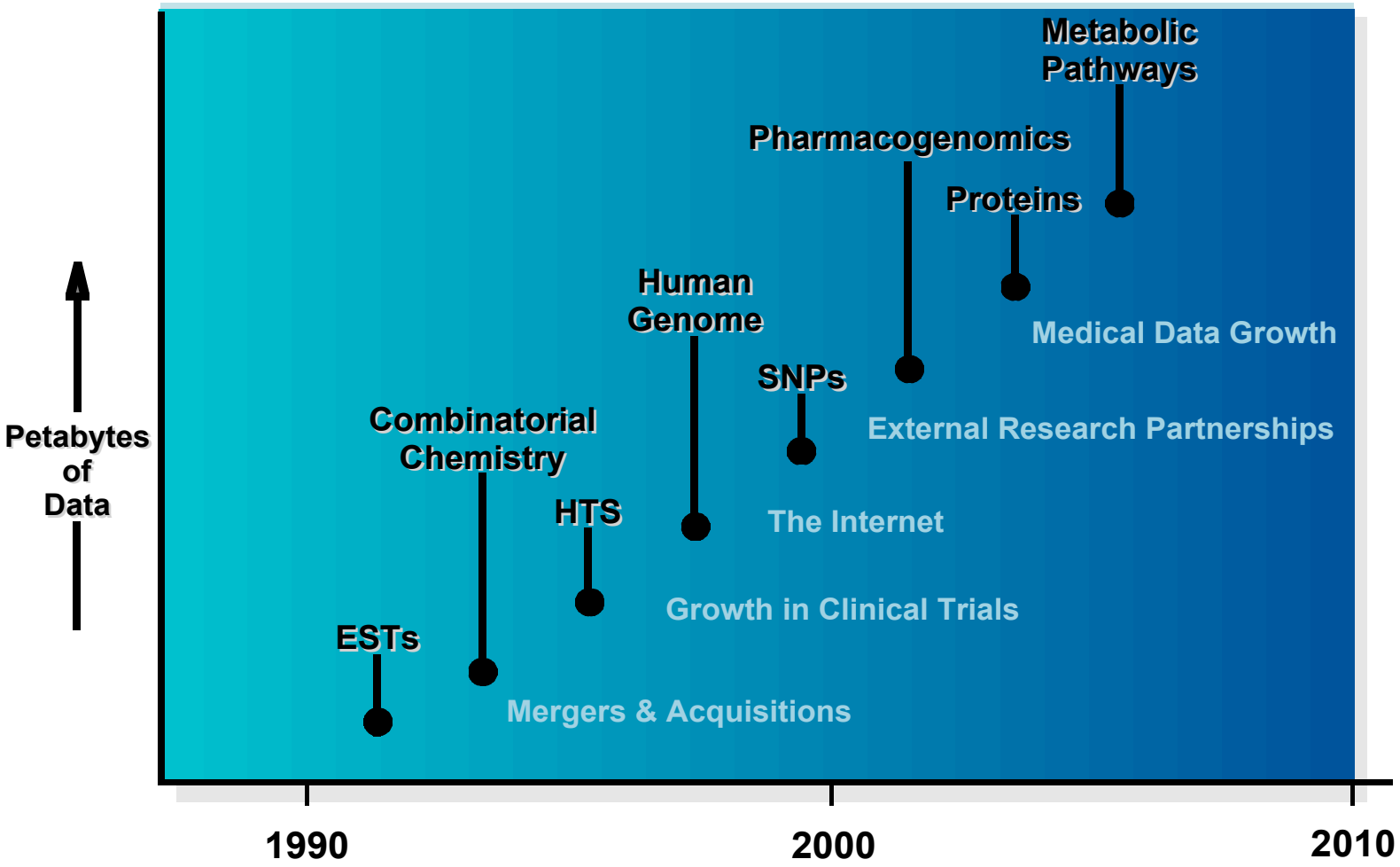
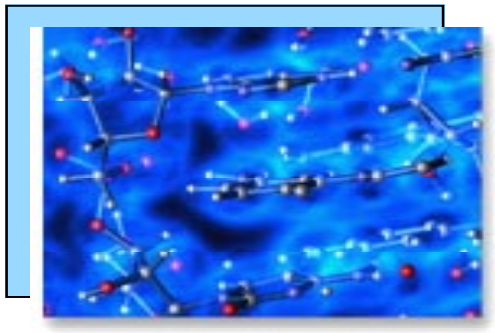
IT enablers for Life Sciences

- Scaling: Large S&TC infrastructures for complex environments
- Integration: Data integration and knowledge management solutions
- e-Business: New models for web-based scientific and healthcare business

Explosion of Drug Discovery Data

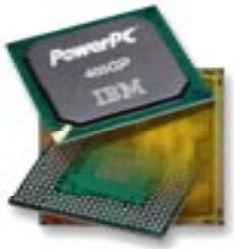


Bioinformatics will drive Computing



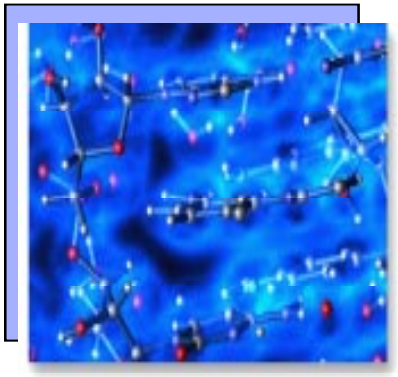
Complex cell and organ simulation

Molecular modeling and Structure prediction



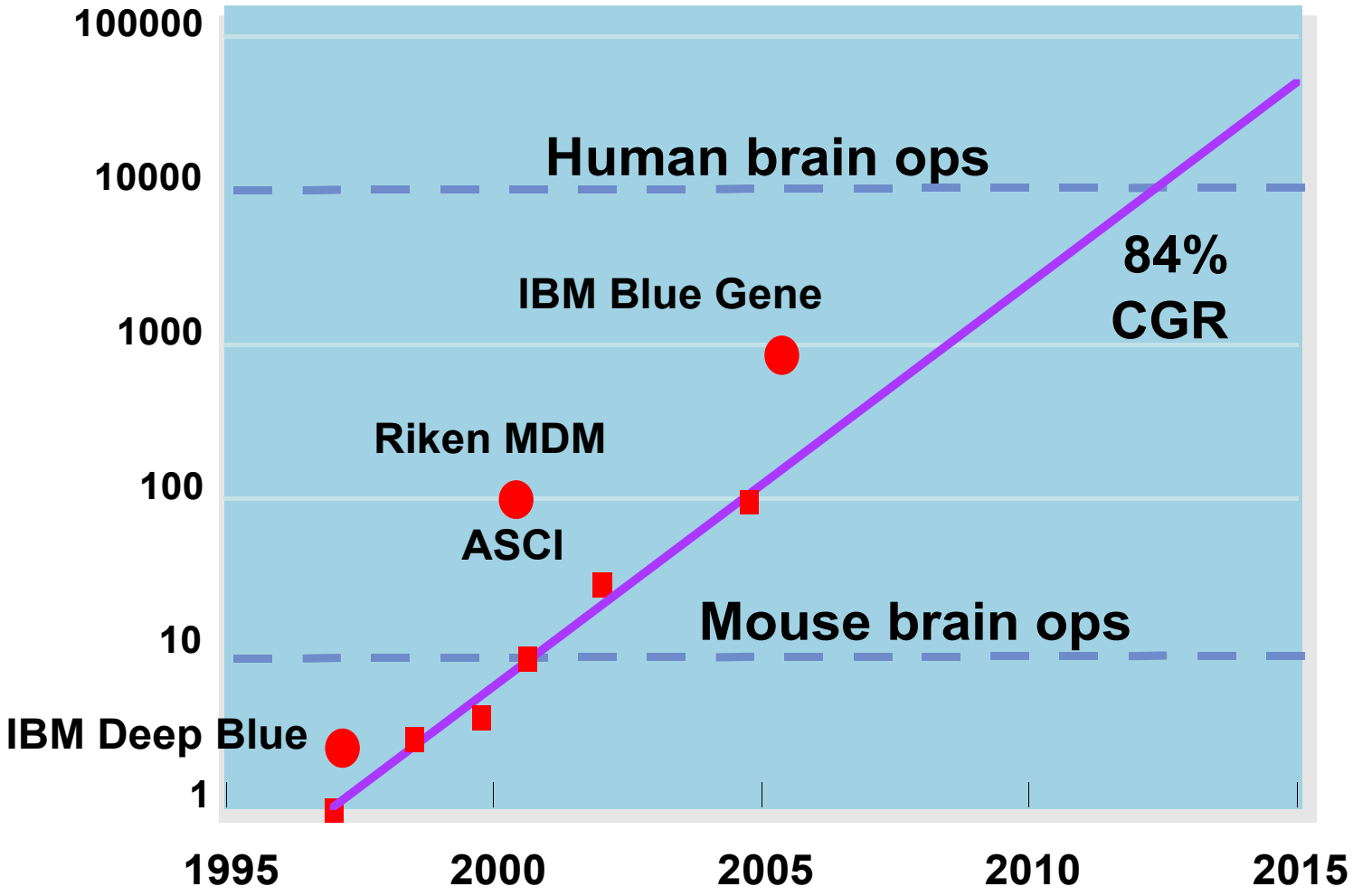

```
#   SEQLET
1     G..G.GK[STG]TL
2     H.....HRD.K..N
3     SGG[QEMRY]..R[VLIA].[IGLMV]R.L
4     V.I.G.G..G...A
6     G.GLGL.I
...
```

Data mining and Pattern Discovery

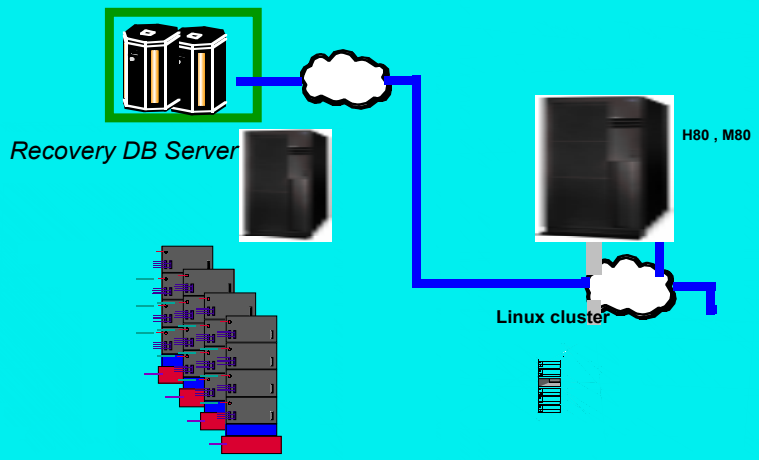


Sequence assembly algorithms

Supercomputing Roadmap

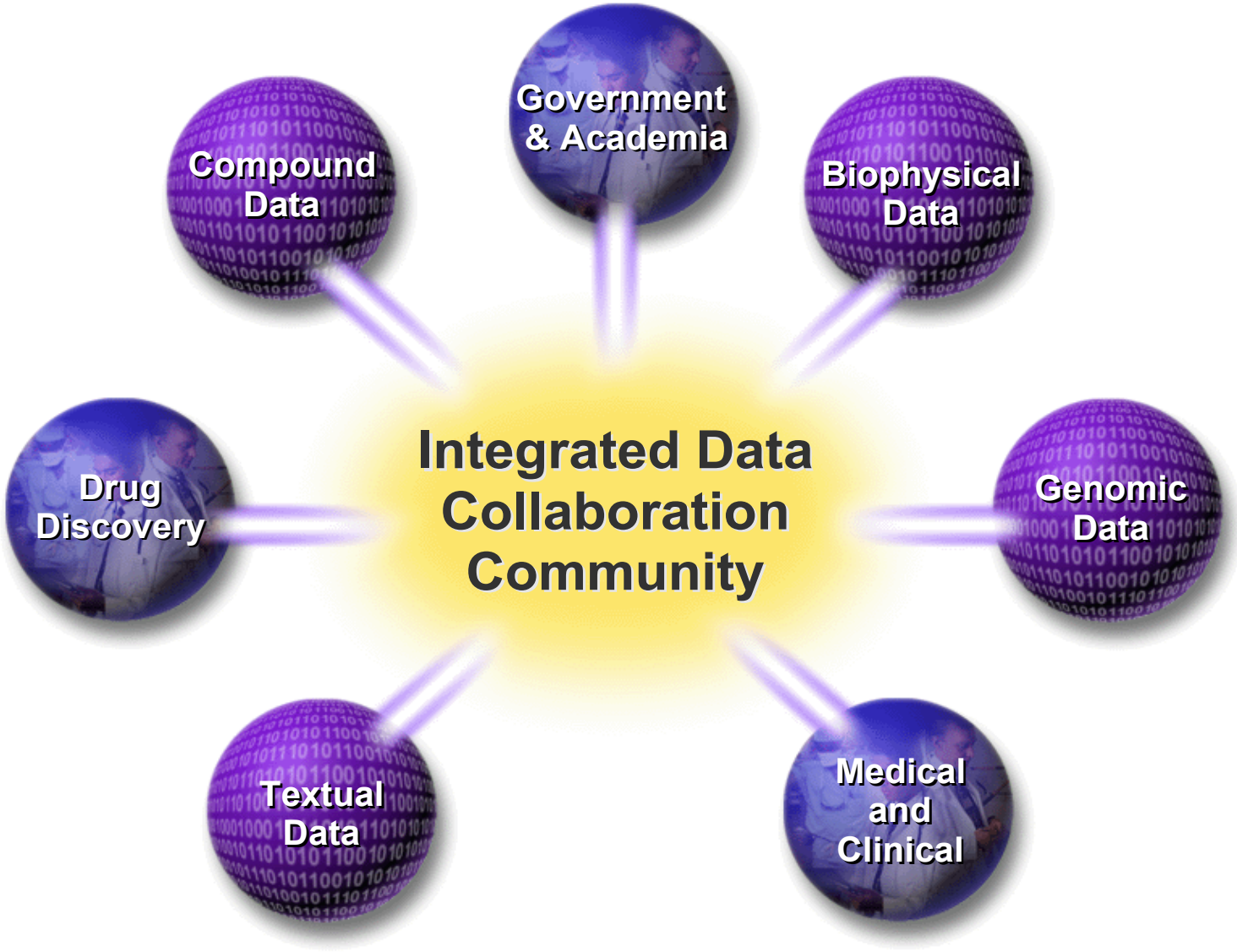


Bioinformatics Compute Farm



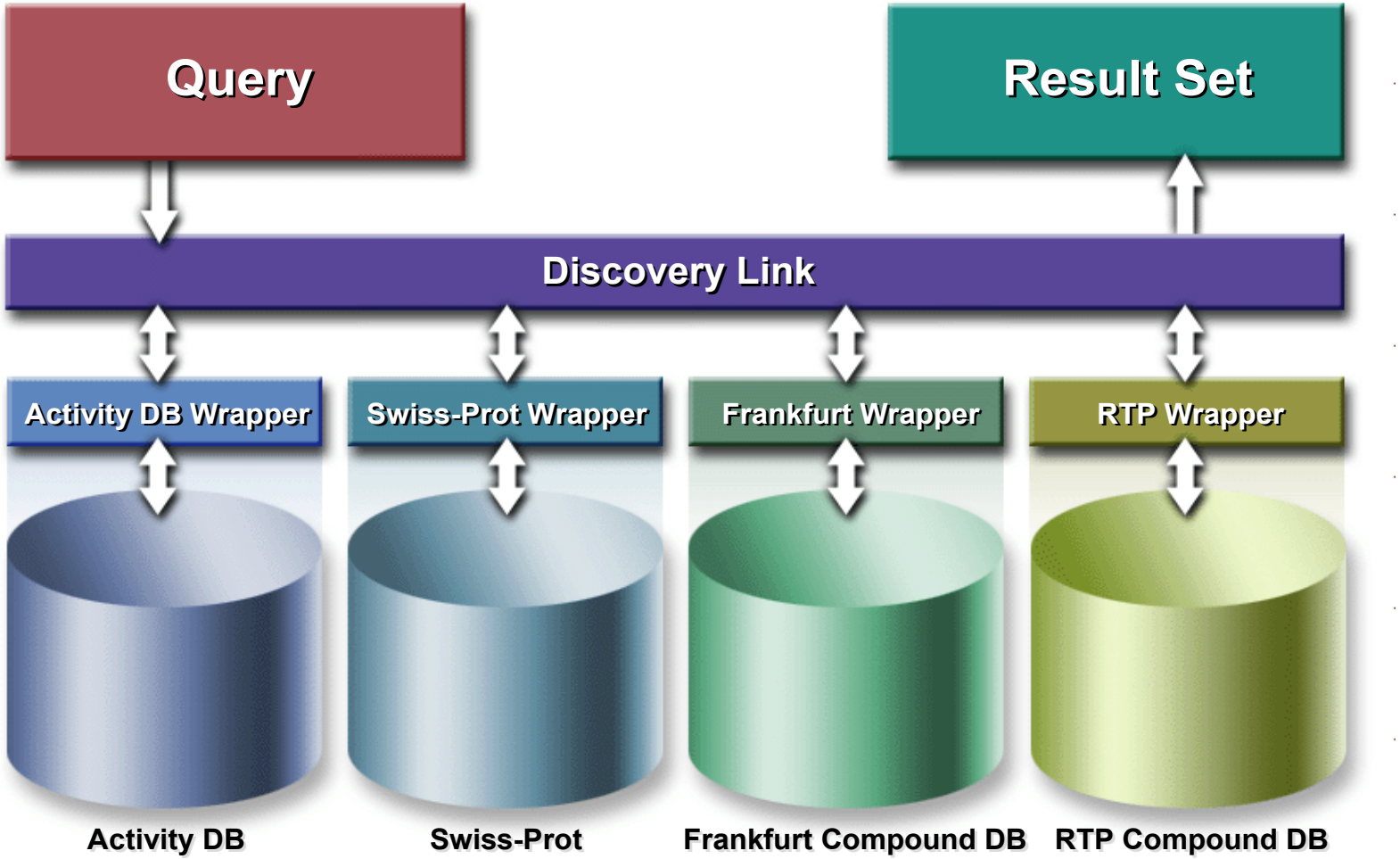
- 1+ Tflop computing
- 10-100 TB hard disk, with redundancy
- High bandwidth to storage
- 100's TB tape library

The Power of Networking: Metcalfe's Law in Biology

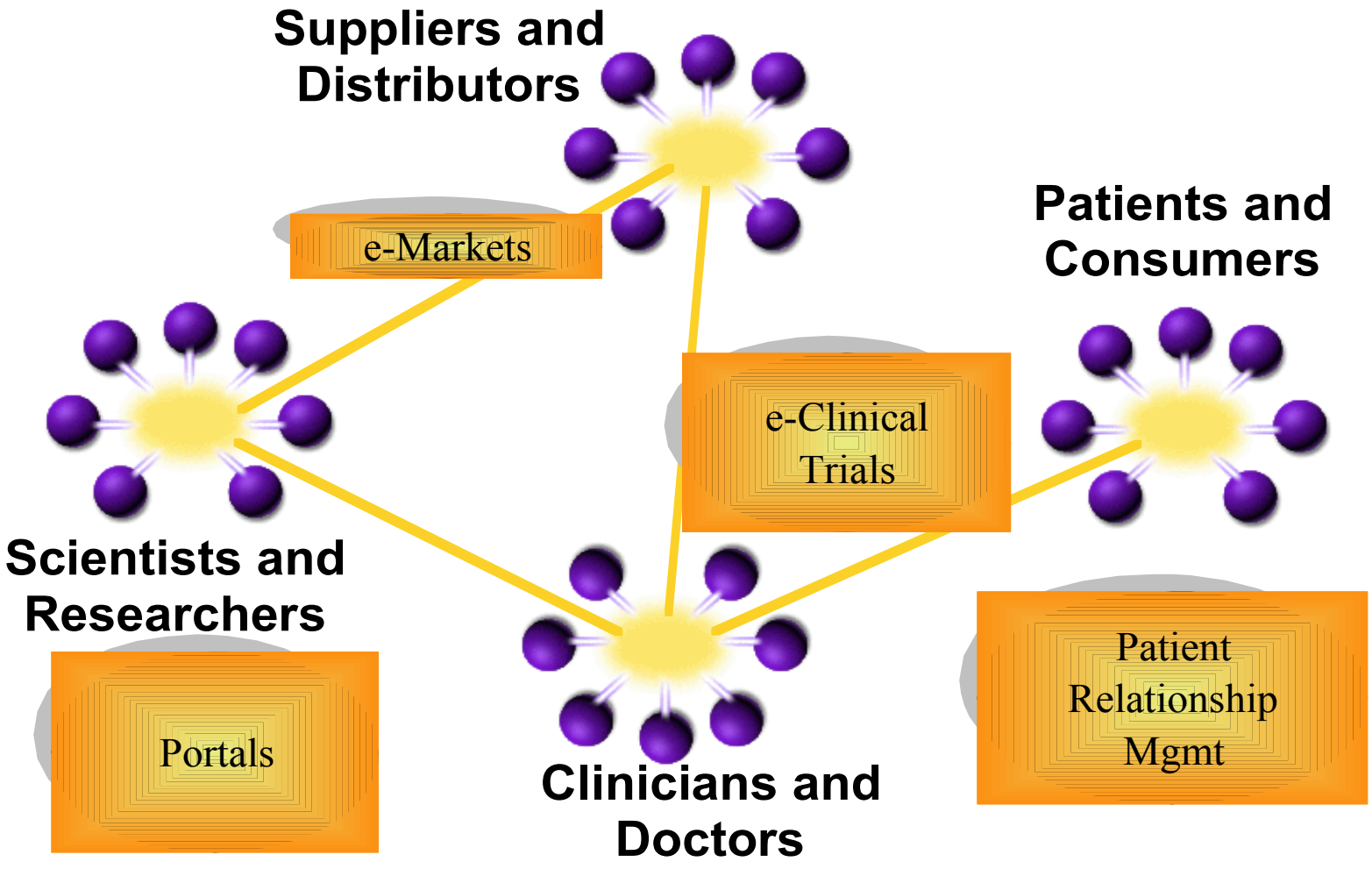


Integrated Data: First Step in Extracting Knowledge

Show me all the compounds similar to ketanserin that have been tested against members of the serotonin family and have characteristics of a good drug



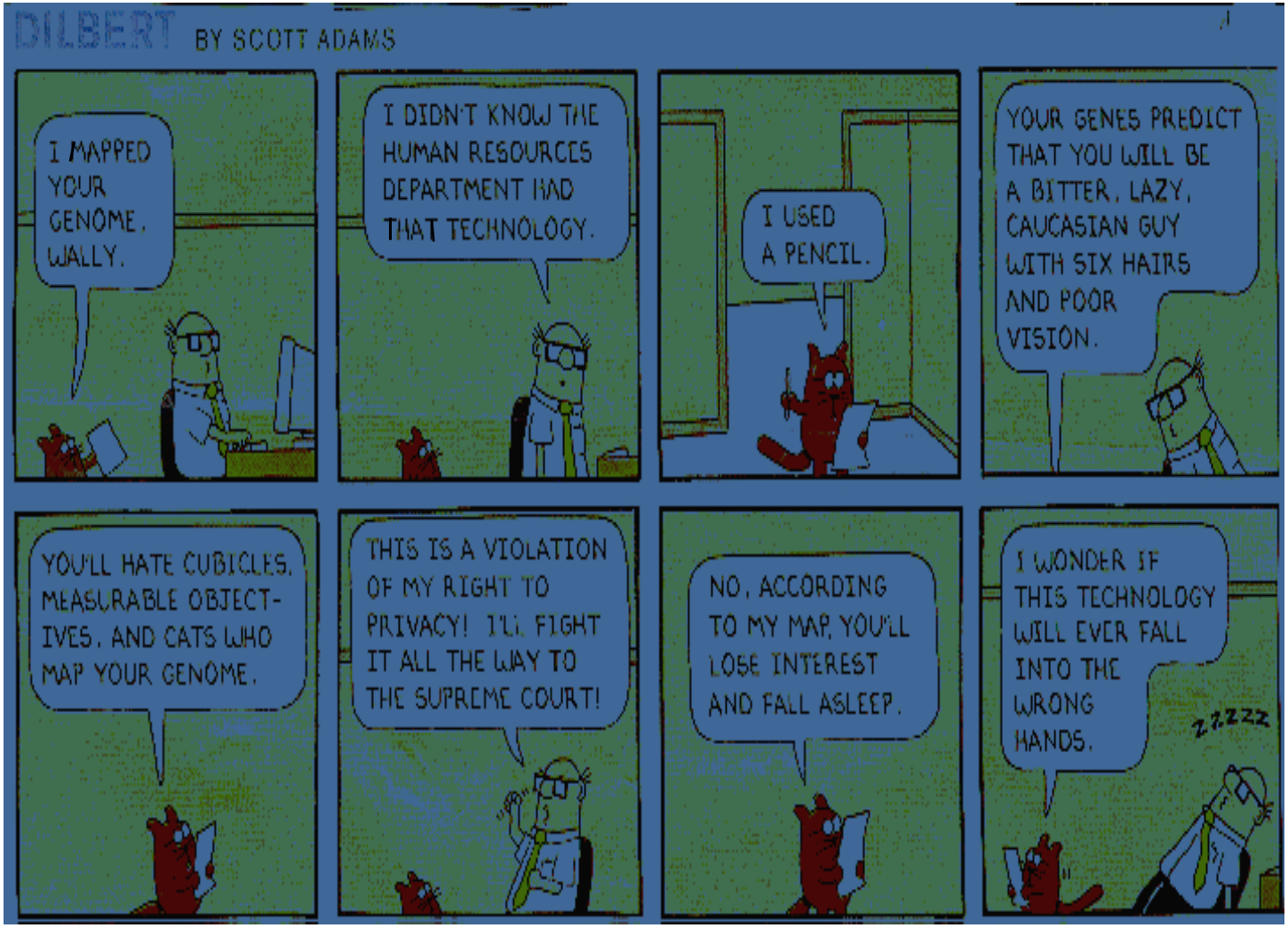
Growth of Communities: e-Business



Pervasive Computing

- The logical extension of an increasingly connected world
- By 2001. . .
  - 48 million non-PC Internet devices
  - 50% of sales in non-PC Web-enabled devices
  - 16% of Internet access by non-PC devices

Privacy and Security



IBM Participation in Life Sciences

- Changing paradigms depend on and drive new wave of computing - gaining learning and understanding needs
- Industry partnerships to build technologies and solutions - creating a life sciences/ computing 'ecosystem'
- Explore and create new opportunities for IBM - growing our partners and our own business

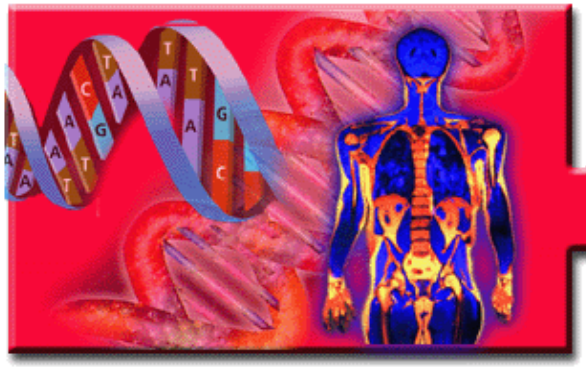
Convergence Creates New Models

Scientific discovery

New drugs and treatments

Revolution in healthcare

Life Sciences



Information Technology