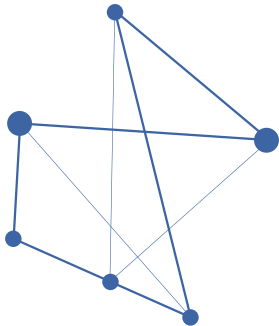




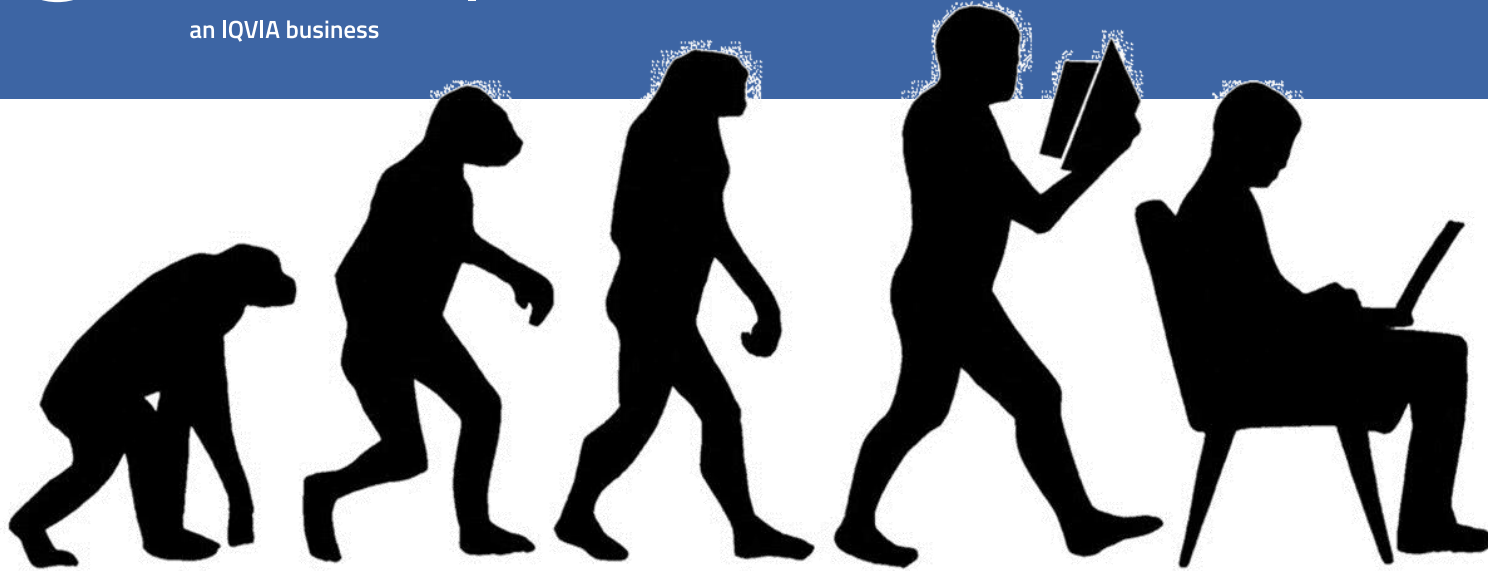
The ONLY Constant is Change



**Your 1st choice
of global FSP partner**

Author:
Eduan Cronjé

GCE Position:
Technical Developer



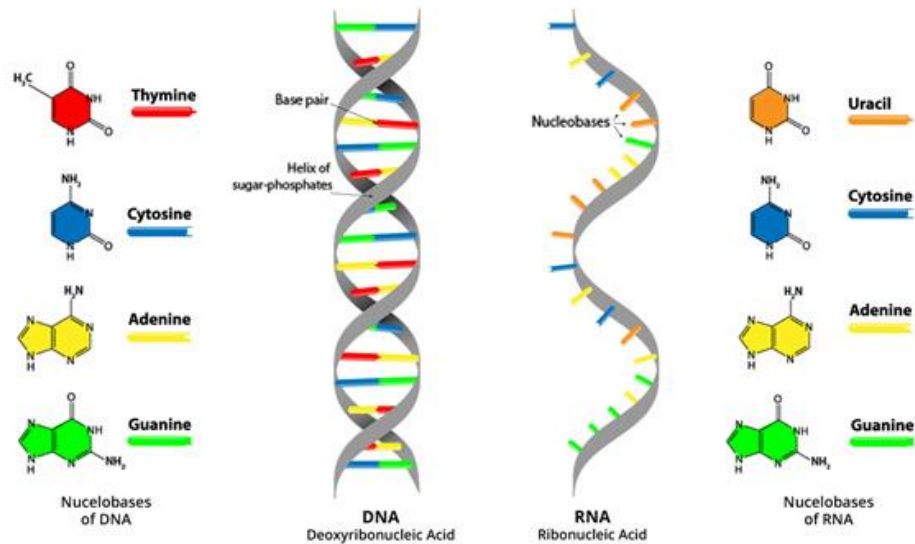
How well do Humans Adapt to Change?



Mastering the art of adapting quickly is now a critical competitive advantage. Research tells us that around 80% of change initiatives fail and a similar proportion of business strategies, mergers and acquisitions suffer the same fate.



Personalized Medicine



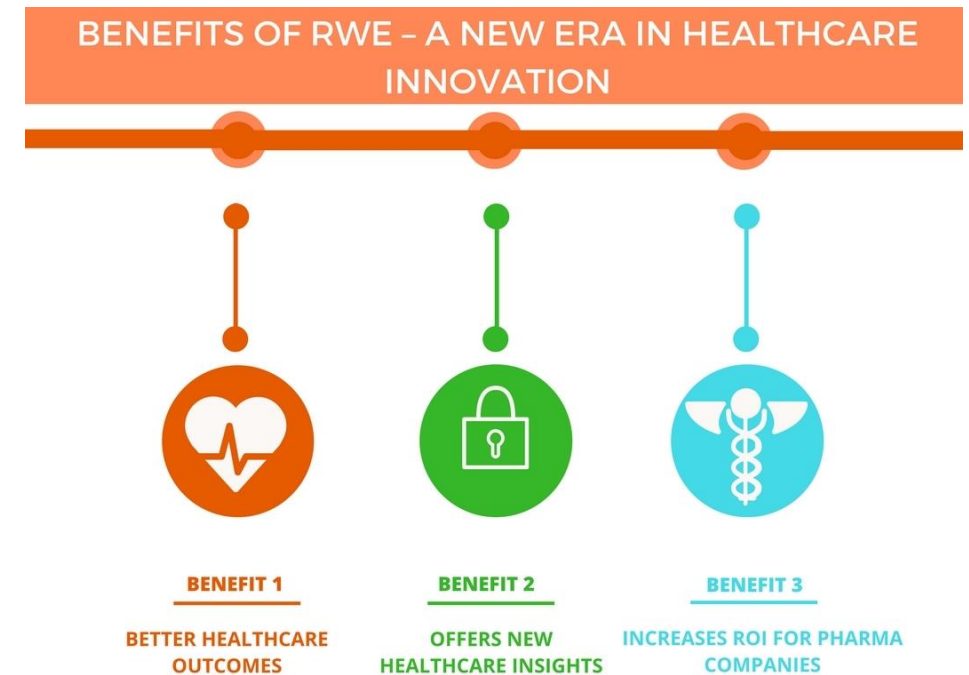
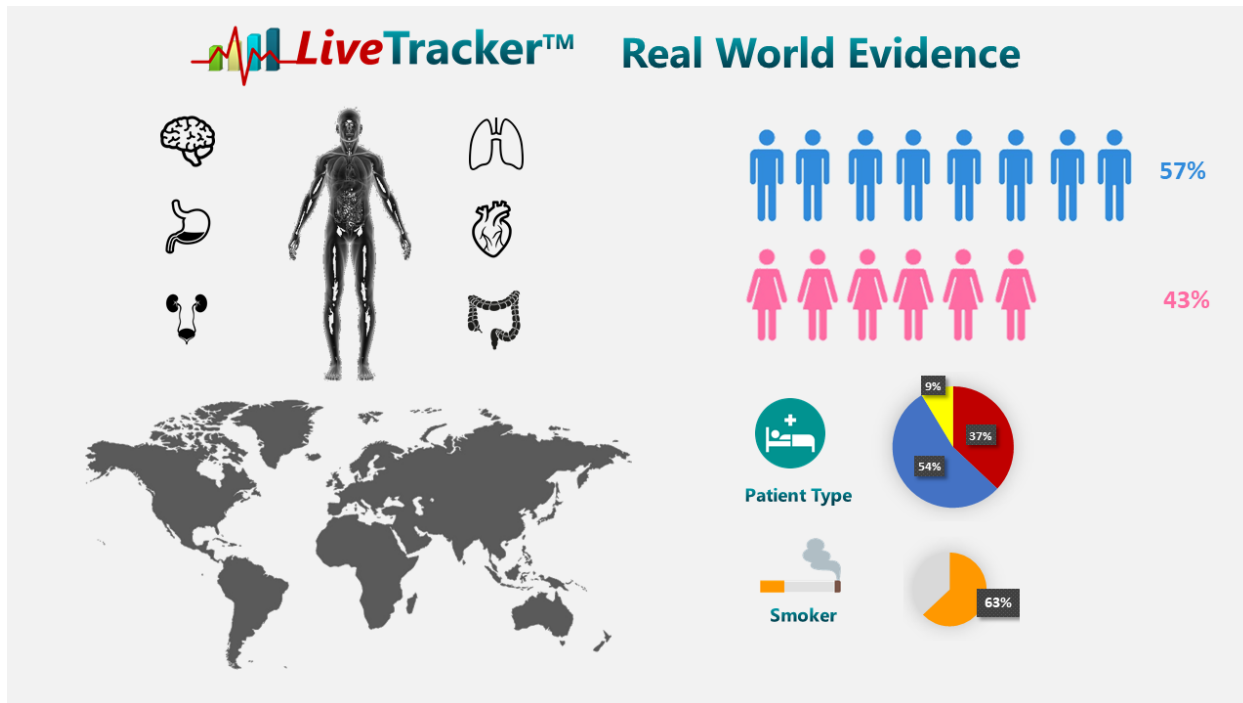
3-D Printed Drugs

**THE WORLD'S FIRST
3D PRINTED PILL**

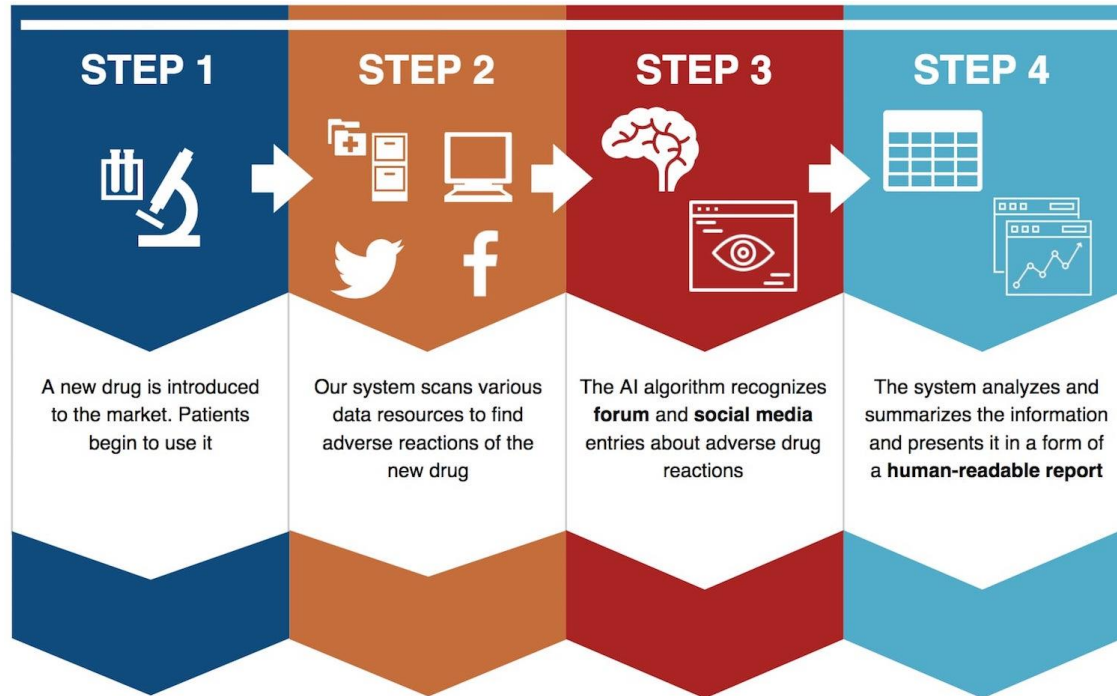
- SPRITAM -

COMPLETEWELLNESSREPORT.COM

Use of Real World Evidence



Artificial Intelligence



The Rise of Biosimilar Drugs



Big Pharma innovations (continued)

	Total positive	Neutral	Total Negative	Net positive
	%	%	%	
Restaurant industry	66	25	8	+58
Computer industry	61	28	11	+50
Grocery industry	58	27	15	+43
Farming and agriculture	58	24	17	+41
Travel industry	52	35	13	+39
Accounting	45	45	9	+36
Automobile industry	53	29	18	+35
...				
Advertising and public relations industry	33	32	34	-1
Healthcare industry	38	14	48	-10
The federal government	25	23	52	-27
Pharmaceutical industry	27	15	58	-31

GALLUP, AUG. 1-14, 2019



Change across the entire pharmaceutical industry is **inevitable**.

3 Developer Types



Techy Developer

Society's expectation

Adores programming

Lives for technical detail



Get It Done Developer

Problem Solver

Persistent

Wants to achieve a goal



I Don't Think... I Want To Be A.... Developer

Interested in tech

Not enjoying programming

Not a natural problem solver







Problem solving steps

1. Read the problem at least three times (or however many makes you feel comfortable)
2. Work through the problem manually with at least three sets of sample data
3. Simplify and optimize your steps
4. Write pseudocode
5. Translate pseudocode into code and debug
6. **Simplify and optimize your code**
7. Debug
8. **Write useful comments**
9. **Get feedback through code reviews**
10. **Practice**

Knowledge and Philosophy

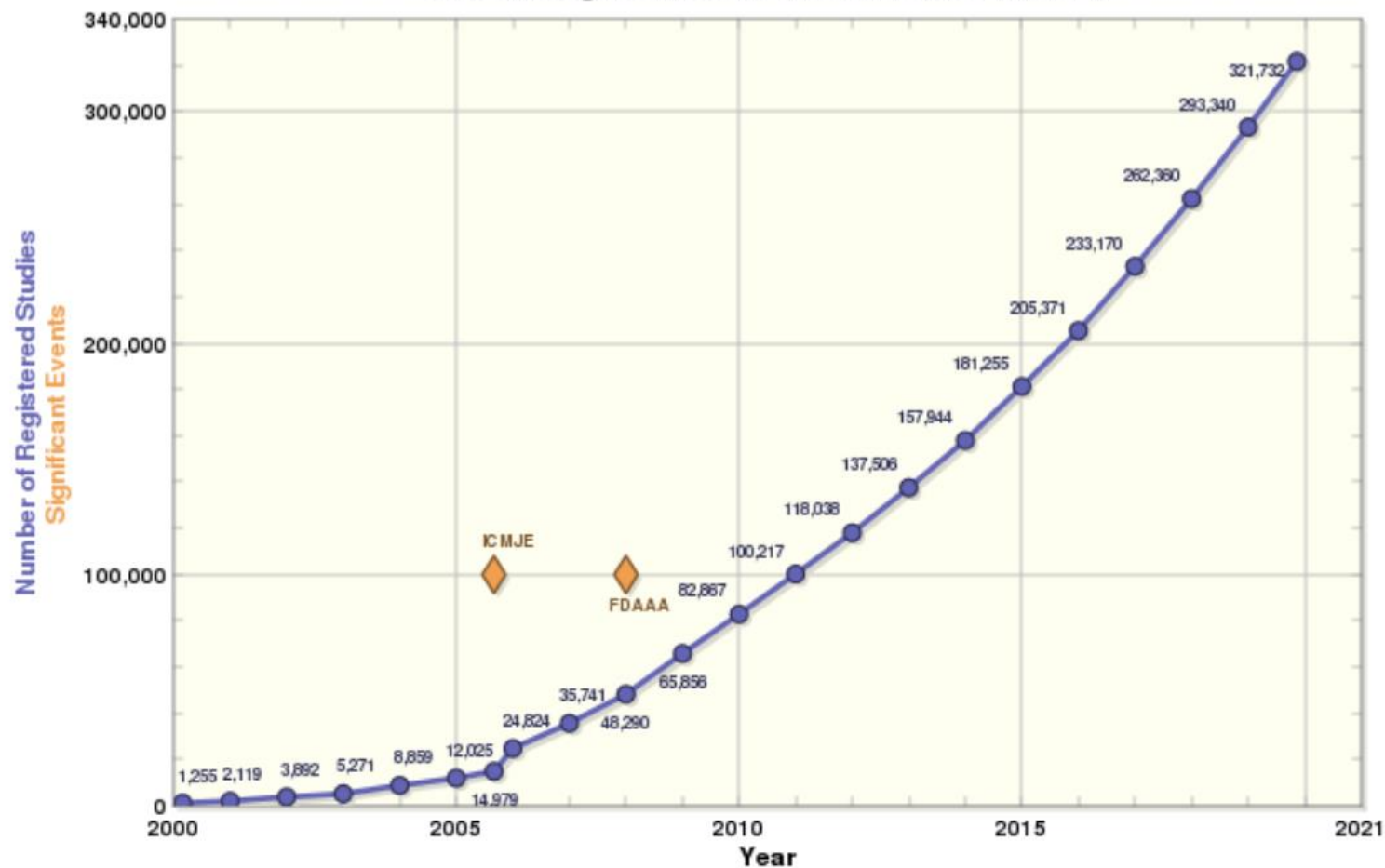


HERDING CATS:

"A futile attempt to control that which is inherently uncontrollable."



**Number of Registered Studies Over Time
and Some Significant Events (as of November 11, 2019)**

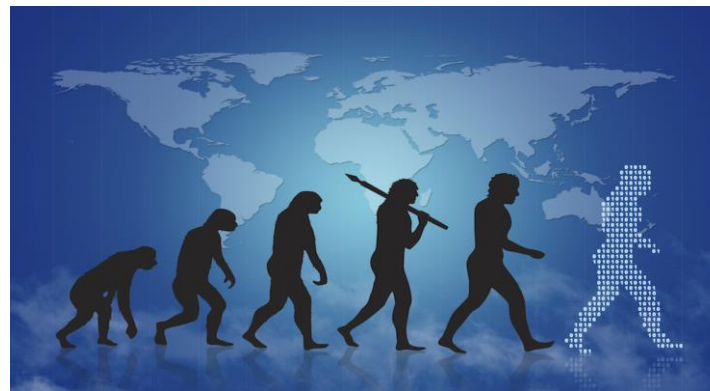




GCE

an IQVIA business

Workload (continued)

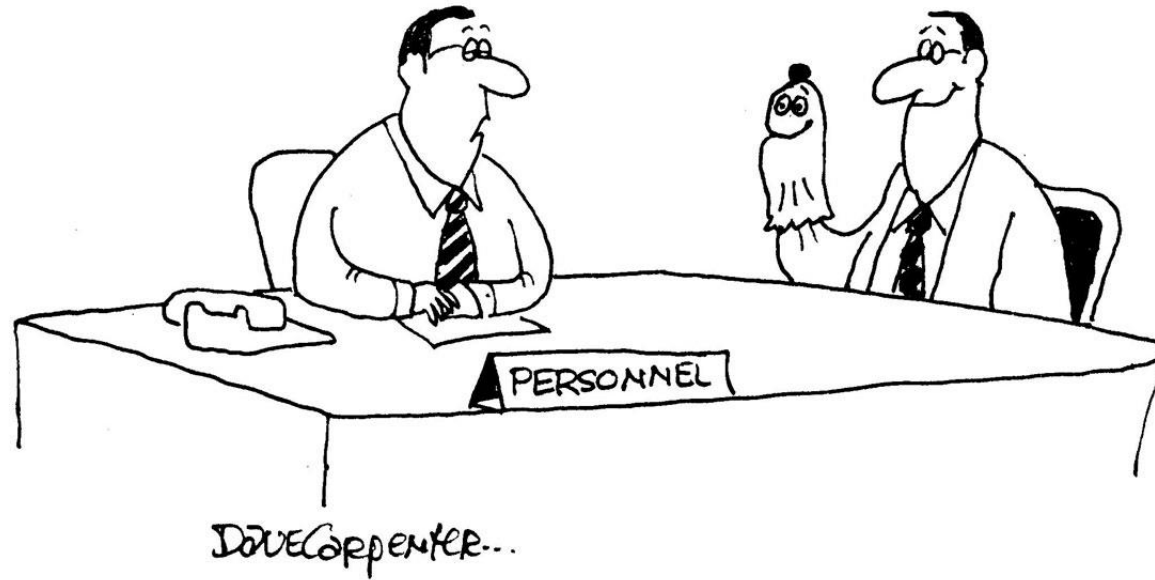


In most cases, emotion trumps logic every time. Logic alone is inadequate. The boundaries between the physical, digital and biological world is slowly but surely disappearing.

The pharmaceutical industry has seen rapid developments in terms of technology, innovation, and practices. Such changes can be attributed to rising patient awareness, increased cost of medicine, the entrance of medical insurers, and changes in rules and regulations.



Companies in the Pharmaceutical industry must keep up with the industry trends and innovation to sustain themselves in a dynamic changing environment.

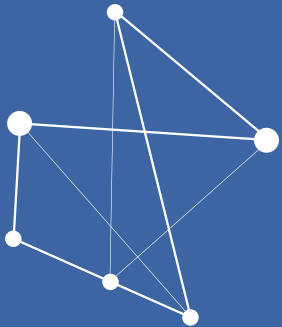


"DO YOU HAVE ANY OTHER REFERENCES BESIDES
MR. BOO BOO?"

- Present and former Co-workers
- <https://www.stackoverflowbusiness.com/blog/programming-then-vs-now-and-why-this-matters-when-hiring-developers>
- The Psychology of Computer Programming - Jerry Weinberg
- <https://simpleprogrammer.com/cool-programmer/>
- <https://news.gallup.com/poll/266060/big-pharma-sinks-bottom-industry-rankings.aspx>
- <https://www.centerforbiosimilars.com/news/public-opinion-of-pharma-industry-hits-lowest-point-ever-in-gallup-poll>
- [https://clinicaltrials.gov/ct2/resources/trends#TypesOfRegisteredStudies\](https://clinicaltrials.gov/ct2/resources/trends#TypesOfRegisteredStudies)
- <https://www.sciencedirect.com/science/article/pii/S0970389618300296>
- <https://eureka.criver.com/the-pharmaceutical-industry-workforce-of-the-future/>
- Google scholar
- Refseek



Thank You



**Your 1st choice
of global FSP partner**

**Author:
John Doe**

**GCE Position:
Position**