



Ginkgo Bioworks

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What it does

Ginkgo Bioworks is a synthetic biology company which ‘programs’ cells to help make everything from fragrances, fossil-free fertilisers to vegan ‘meat’. Ginkgo charges customers to help re-design cells for specific purposes and takes a royalty on the resulting product once it has been commercialised.

Why we own it

- Advances in computing power and DNA engineering technology is converging to enable the re-programming of cells to produce products and capabilities at scale. This presents an almost unbounded set of potential applications.
- Ginkgo’s two sided horizontal platform of its ‘foundry’, a vast automated cell engineering lab, and its ‘codebase’, the valuable data generated from it, gets three times faster and 50 per cent cheaper each year. With the ability to produce ten times the output of scientists working by hand, there are significant potential cost and efficiency gains for companies that outsource research and development to Ginkgo.
- Due to the company’s royalty revenue model, as an increasing proportion of Ginkgo’s programs bear fruit in the form of useful products, returns have the potential to compound over time.
- The diverse set of visionary founders who believe biology to be the ultimate programming challenge and have a simple vision to ‘make biology easier to engineer’.

How it could be worth many times more

- Improving efficiency results in the number of ‘foundry’ programs increasing roughly 10x in the next 5-10 years. Efficiency gains are passed on in the form of cheaper programs to customers. At a 40% gross margin this covers the company’s increasing fixed cost base.
- Ginkgo improves the success rate of its programs to every two in three over the next 5-10 years. With a five-year lead time from starting a foundry program to downstream royalty, estimated \$5-10m annual profit achievable per program, that means potential pre-tax profits of c.\$4bn in ten years.

Where we might be wrong

- Ginkgo’s foundry and codebase fails to solve the biological programming problem of re-designing cells that can produce products at industrial scale.
- With the breadth of potential applications, the company’s lack of focus leads to a resultant lack of demand from companies.

Short 10 Questions

Can sales double in the next five years?

1

Yes. Foundry output improvements fuel revenue growth.

Ten years and beyond?

2

Applications proliferate from small volume to mass industrial providing significant royalty revenue flow.

Competitive advantage?

3

The efficient automated foundry and extensive codebase provide an application agnostic platform and building blocks to manufacture at scale.

Is the business culture different?

4

Synthetic biology expertise, an inspiring vision and a culture of problem solving.

Customers like you? Contribute to society?

5

Cost savings for customers and the potential to help solve societal issues through efficient production.

Are returns worthwhile?

6

Not yet but potentially significant.

Will they rise or fall?

7

Returns rise with output efficiency gains, program numbers and program success.

How is capital allocated?

8

Improving its platform, buying high value DNA intellectual property and incubating users of their technology.

Could it be worth 5x as much?

9

Revenue model results in outlier potential.

What doesn’t the market understand?

10

The array of potential applications, and the complex revenue model.

Risk factors

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