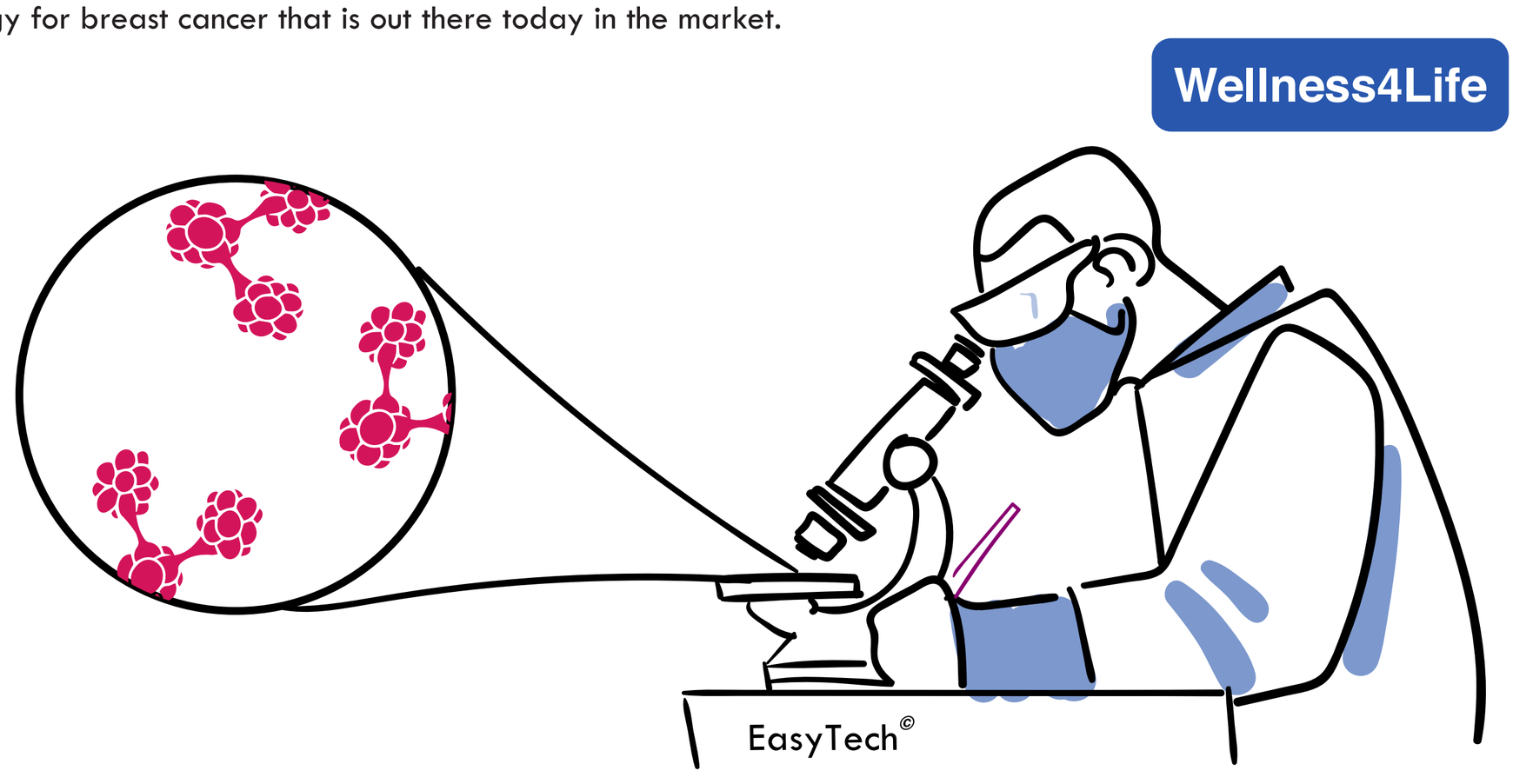
DESIGN THINKING CASE STUDY

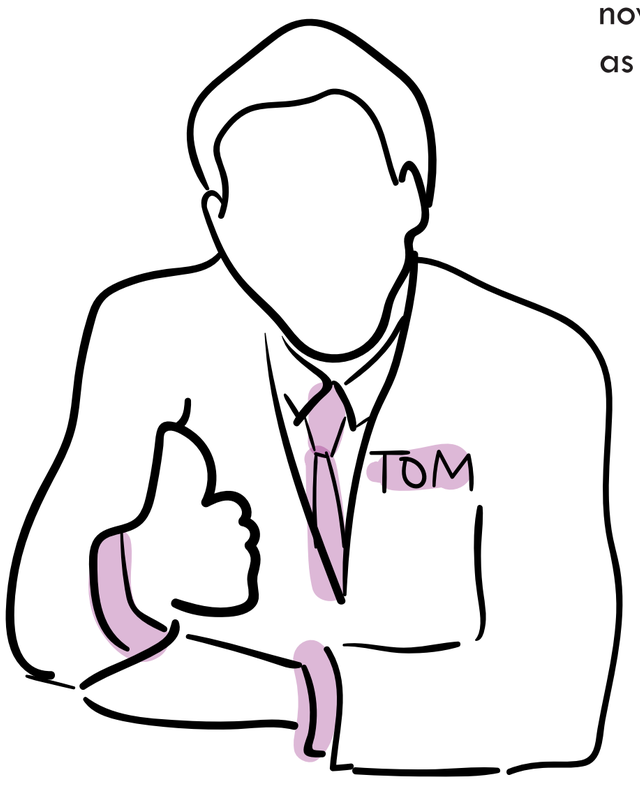
You are a researcher in a diagnostic imaging device manufacturing, Wellness4Life, and have developed a new technology called EasyTech that detects breast cancer at a very early stage in 2018.

This technology is going to be the fastest and most accurate detection technology for breast cancer that is out there today in the market.

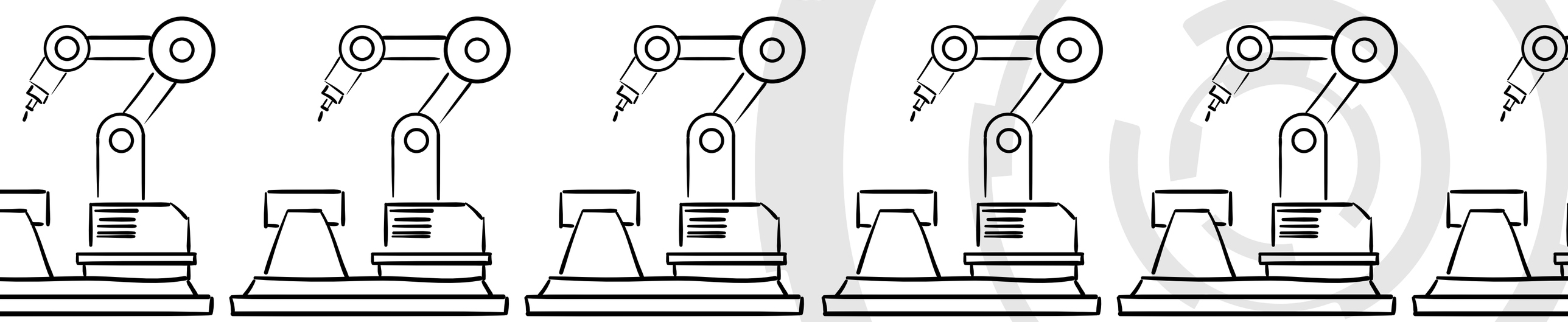


Currently in 2019, you are also working on upgrading this technology to be able to detect other forms of cancer. You plan to name it EasyTechX.

You have been approached by your manager, Tom, about EasyTechX and he is excited about this revolution and wants to implement it straight away.



However, it would require an initial investment of $15,000,000 now to develop a machine and implement system and technology as well as securing intellectual property (IP) for EasyTech.



EasyTech is expected to generate cash flow of $2,000,000 per year from Year 2020 until the end of Year 2029 (10 Years).

$4,000,000 + $10,000,000

For EasyTechX, it requires an investment of $4,000,000 in research and development cost now and additional $10,000,000 to develop a machine and implement system and technology as well as securing intellectual property (IP) in Year 2023. The patent on these technologies will last for 10 years before other companies can copy it.

$2,500,000

EasyTechX is expected to generate cash flow of $2,500,000 per year from Year 2024 until the end of Year 2033 (10 Years).

Wellness4Life's Cost of Funding

5%

Rate of Return on all Investments

30%

Payback Period of maximum

10 years

Before Tom pitches this project (EasyTech and EasyTechX) to the board of directors to request funding for investment, he wants you to evaluate whether these projects are worth the company investing in.

(a) Using four evaluation tools that you have learnt, evaluate whether this project is worth investing in.

(Hint: Remember that you must discount all future values to its present value)

Net Present Value (NPV)

Future Value ($):

Discount/Inflation Rate (%):

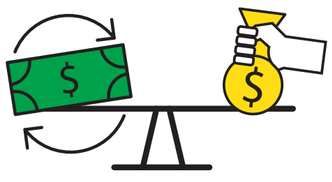
Number of Years:

Compound Interval:

Calculate | Reset

Internal Rate of Return (IRR)

Profitability Index (PI)



Payback Period (PP) (Equal Cash Flow)

Investment Required:

Cash Flow Per Period:

Calculate | Reset

Payback Period (PP) (Non-Equal Cash Flow)

Period before Full Recovery of Investment:

Unrecovered Investment at Start of Period:

Cash Flow for the Period:

Calculate | Reset

(b) Assume that Tom managed to get funding for investments in both EasyTech and EasyTechX, and both technologies can generate returns as shown below

What are Accounting Rates of Returns (ARR) of both projects?

Average Annual Earnings:

Initial Investment in Project:

Calculate | Reset

Average Annual Earnings:

Average Book Value of Project:

Calculate | Reset