One to Watch

LBT Innovations

Cash flow positive in FY26

19th September 2024

Venn Brown sat down with Brent Barnes, CEO and Managing Director of LBT Innovations, to discuss the company's pivot into environment monitoring in the pharmaceutical manufacturing space, the launch of their new instrument, the AstraZeneca purchase, market size, the outlook of the pipeline, and the path to being cash flow positive.

AI-powered environment monitoring: LBT Innovations is the maker of the Automated Plate Assessment System (APAS), an AI-powered machine that automates the examination of culture plates used to monitor the clean room environments of pharmaceutical manufacturing facilities. APAS replaces a manual process involving two-person teams who physically examine up to 1,000 plates a day for signs of bacterial growth.

Market size: LBT estimates a total addressable market worth around $2.8 billion. More than 14,000 laboratories and manufacturing facilities globally are mandated to use culture plates for environmental monitoring. The market is highly fragmented, with the 20 largest pharmaceutical companies and contract drug manufacturers operating approximately 600 facilities.

Competition: Two competitors in the market are currently installed in an estimated 150 facilities. LBT's APAS technology offers greater scalability than existing solutions, with the APAS Independence able to process 1,600 plates a day compared to <150 plates a day from the competitor machines. APAS is either the same price or cheaper, takes up less space and aligns better with customers' existing workflow.

Traction: In 2023, AstraZeneca gave LBT $1.2 million to accelerate APAS development. AstraZeneca has just purchased five devices worth approximately $5 million over five years. Two other top 10 pharma companies are currently evaluating the technology.

Outlook: LBT aims to be cash flow positive by FY26. Having only launched APAS in March, the company is just starting to build a footprint in the industry. The response has been positive, with AstraZeneca evangelising the system at various conferences and through published papers. The company reports a solid two-year pipeline of potential sales, including another 5 – 10 devices for AstraZeneca.

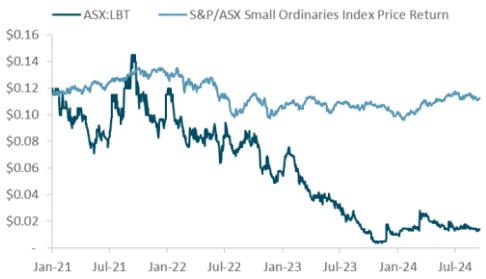
LBT Innovations

ASX:LBT

Sector	Health Care Equipment
Date	18-Sep-24
Share price	$0.014
52-week range	$0.004 / $0.014
Market cap	$24.2m
Free float	46.8%
Dividend	-
Yield	-

Year-end 30 June	FY21	FY22	FY23	FY24
Revenue	$1.1m	$2.1m	$2.1m	$1.3m
EBITDA	-$6.6m	-$7.8m	-$7.1m	-$4.7m
EBIT	-$6.7m	-$7.9m	-$7.1m	-$4.7m
Net profit	-$7.3m	-$6.6m	-$22.5m	-$3.7m
Earnings per share	-$0.03	-$0.02	-$0.07	-$0.00
Operating cash flow	-$2.7m	-$4.9m	-$1.4m	-$3.7m
Free cash flow	-$2.6m	-$4.3m	$1.5m	-$4.5m
Cash & equiv	$9.6m	$2.8m	$2.0m	$2.3m
Net debt	-$4.8m	$1.5m	$1.4m	$0.8m
Net debt / EBITDA	0.7x	-0.2x	-0.2x	-0.2x

3-year Price Chart



Analysts

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Thanks for being with us here today, Brent. First, can you give us a brief overview of LBT Innovations?

LBT Innovations is a medical technology company. We make the APAS, which is the Automated Plate Assessment System. It's an AI-powered culture pate reader that examines culture plates (similar to the Petri dishes you use at school or university) to check them for bacteria growth.

Plate reading is a mandatory process in every pharmaceutical manufacturing facility in the world, of which there are more than 14,000. These facilities manufacture pharmaceuticals, vaccines and injectables. They're all made in a highly sterile environment, and the culture plates are used to perform ongoing testing to ensure the environment is sterile.

Currently, the vast majority of plates are examined manually, with industry standards requiring each plate be viewed independently by two people, with the results then recorded against the batch of pharmaceuticals being made.

Figure 1: APAS automates a mandatory process for all pharmaceutical manufacturing

Source: LBT Innovations

What are culture plates used for?

All sterile pharmaceuticals must be manufactured in an aseptic environment, requiring control and checks. Workers must wear fully protective clothing; they enter and exit via a separate decontamination room; the whole room, all surfaces and even the air pumped into the rooms are sterilised.

Manufacturers test whether the environment is clean by arranging culture plates around the room. The plates contain a substance called agar, which encourages bacteria to grow. If bacteria is present in the room, it will most likely grow in the dishes. The dishes are rotated continuously every four hours. Once a dish has been collected, they're left to incubate for five days before being examined.

The examination is currently performed by two trained microbiologists looking at the dishes to see if they can see bacteria growing. We've automated this examination, so rather than having two scientists stuck looking at hundreds or thousands of plates each day, the plates are put through the APAS, which can analyse and record the results of 200 plates an hour.

Figure 2: Culture plates are currently read manually, with each reading recorded

Source: LBT Innovations

So, your target market is pharmaceutical companies?

Yes, we're focusing on the biggest pharmaceutical companies and the contract drug manufacturing organisations. Regulators mandate this testing in all manufacturing facilities. The regulators will conduct audits to check that all records are available for the uninterrupted period they've been manufacturing. This is the risk our customers are trying to manage. If any records are lost or incomplete, they can halt production, issue warning letters, or, in the worst case, require a recall, which can easily cost tens of millions of dollars and could reach one hundred million.

And you've recently announced AstraZeneca as a customer?

AstraZeneca is our cornerstone customer. We've just secured an order for five instruments to be delivered by the end of the year. AstraZeneca has been a strong and early supporter of ours.

In 2023, they gave us $1.2 million to help accelerate our R&D because they saw the value of what we were doing. To give you an idea of scale, AstraZeneca's larger sites process 30,000 plates a month. AstraZeneca has 30 sites, which we estimate could lead to the sale of around 10-15 units.

That doesn't sound like a lot

Each single instrument sale is worth approximately $1 million over five years, with the majority recognised in the first year of sale. A single customer like AstraZeneca is a $10-$15 million account, which becomes meaningful when considering our commercial focus is on large pharmaceutical manufacturing companies like AZ. We still err on the conservative side with our estimates.

How does the rest of the sales pipeline look?

We're currently being evaluated by two of the other top 10 big pharma companies. The sales cycle is typically nine to twelve months, including a three or four month evaluation period during which they'll run the APAS instruments parallel to their existing system.

What might surprise many people is that pharmaceutical companies can be quite collaborative when it comes to manufacturing. We've benefited from AstraZeneca presenting

at various conferences about APAS. From an industry and regulatory perspective, it's better for them if other people also use APAS, so the papers they've written and presentations provide great validation for us and APAS and help raise our profile.

What are the motivating factors for customers to use APAS?

The pharma industry is incredibly conservative when it comes to change. Changing any existing process introduces some risk, so the benefit has to outweigh this risk. Their priorities are:

1. Quality
2. traceability and
3. efficiency.

In that order. They know that if they have two people looking at the plates, some positive samples will slip through, and there are recorded cases of that happening. In fact, while AstraZeneca was trialling APAS, a plate slipped through their two workers that we picked up. They've written a paper on it and presented it at conferences, which is fantastic for us.

Figure 3: APAS processes 200 plates an hour with higher accuracy than manual reviews

Source: LBT Innovations

No system is guaranteed 100%, but we've tested APAS extensively, and it's been shown to be at least as accurate as current methods, which regulators require. Plus, it's automated, so it's consistent and doesn't tire or get bored. We also keep a timestamped copy of the image taken from the test, which improves traceability. The current processes don't do this. APAS automatically records the results in the laboratory's transformation management system without requiring manual keyboard entry, which, again, helps with quality as it removes a point of error. Finally, APAS is three times faster than the existing methods. Two hundred plates are bulk loaded into the instrument, you press a button, and an hour later, the plates are processed, with any positive ones separated for inspection.

So, it's not about cost savings through headcount reduction?

No, it's not about reducing headcount but better allocating resources. The people doing the manual examination are highly skilled, highly trained microbiologists. The world doesn't have enough microbiologists. Approximately 10% of all microbiology roles are vacant at any one time. AstraZeneca isn't planning on firing anyone; they want to free resources up to do more valuable work. I don't think anyone enjoys examining clean room culture plates, but it's

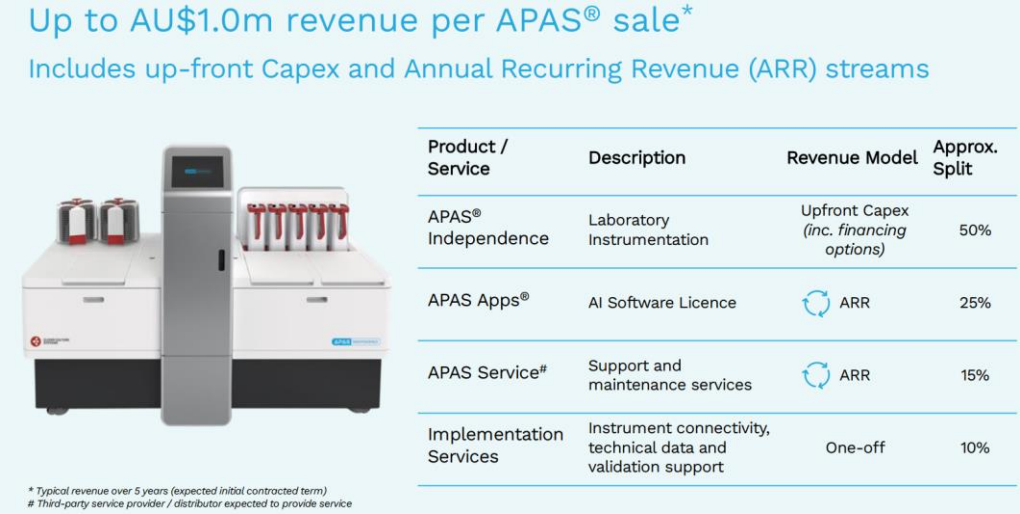
necessary. And we've found a way to automate it in a highly efficient and cost-effective manner.

What is your revenue model?

The APAS instrument costs US$325,000 upfront, with an annual licencing fee of US$50,000, which covers the software and hardware. We expect each sale to provide around $1 million over five years.

For context, one of our competitors charges US$500,000 for their instruments.

Figure 4: Each sale generates around $1 million over five years



Source: LBT Innovations

What is the payback period for APAS?

It comes down to how many plates you use, but if you're processing 500 plates a day, which is typical of a mid-sized lab, it's around two and a half years. A small lab may only use 100 plates a day so our current instrument might not be appropriate.

What are your competitive advantages compared to your competitors?

We have a few:

1. **Throughput:** Other units have an integrated incubator, which severely limits their throughput. Their instruments can hold 300-660 plates, which is only 60-132 plates a day because each plate must incubate for five days.
2. **Single images:** Competitors also use a different kind of analysis. Rather than looking for endpoint bacterial growth in the plates after five days, they take a series of photos over the five days and compare the before, during and after images, looking for change. This is why they have inbuilt incubators.
3. **No custom plates:** Their identification process also requires the use of their custom proprietary plates, which are more than double the price of standard plates and provide a single point of supply chain risk, which pharmaceutical companies don't

like. Pharma companies want supplier redundancy, and the APAS allows them to maintain their current supply chain by using their existing culture plates.

Figure 5: APAS has higher throughput and integrates within existing workflows

Source: LBT Innovations

4. **Price:** APAS is either a similar price or much cheaper than competitors. As mentioned above, APAS uses the industry standard plates, and because of the throughput, you need fewer instruments per lab than our competitors. The large customers we're targeting already have large incubators, so while the built-in incubator might be useful for small labs, it's not for the labs processing thousands of plates.
5. **Floor space:** The APAS is about the size of an office table. It's about 2m long and 80cm wide. Some competitor instruments are much larger. Plus, customers need multiple instruments to process that same volume because of the lower throughput, meaning customers may require 8-18m of wall space to achieve the same level of automation as APAS.

Figure 6: APAS is more affordable, has higher throughput and requires less space

	APAS Independence	BioMérieux – 3P system	Growth Direct
Instruments	1 instrument	9 instruments *(500 plates / 60)*	4 instruments *(500 plates / 132)*
Incubator capacity	1,600 plates per day No incubator	60 plates per day 5 day incubation = 300 plate capacity	132 plates per day 5 day incubation = 660 plate capacity
Upfront capex	$0.3m	$2.7m	$2.4m
Floor space	2m x 0.8m	18m wall space	8m wall space

Source: LBT Innovations

Do you own all the IP?

Yes. We designed the instrument and the algorithm. We're a small company of 18 scientists, software engineers and AI people. We outsource the manufacturing of the instruments, but we own the IP.

How easily could competitors develop a similar system of analysis and solve the limitations you listed?

Their system is entirely different, so they'd have to start from scratch. Our algorithm was designed to identify bacterial growth from images taken at the endpoint of incubation. Competitors take multiple images and compare them, so they would need to start from the beginning and develop a whole new system and technical approach.

To be clear, though, having the inbuilt incubator could be beneficial for a small lab. If you're only processing 100 plates, then you don't need the throughput, and it might be convenient not to buy a separate incubator. We're targeting the medium-large facilities that process hundreds of plates and will already have large incubators.

Optical recognition has been around for a long time, why has it taken so long for this technology to come to market?

It's a fair question. It's because it's difficult and partly because it's a non-uniform environment with a large amount of variability in laboratory practices. Bacteria can be black, grey or transparent. Scientists put bar codes, stickers, and marker pen scrawls on the plates. We had a situation where a stack of plates had been secured with sticky tape, leaving a clear residue on the plate when removed. We had to read that and differentiate the clear residue from transparent bacteria.

We're not the first group to try to do this. Many have tried and failed, and that's part of the reason for the slow uptake. We speak to potential customers and they're sceptical because they've heard about this before and it hasn't worked.

Figure 7: The inconsistency of the environment makes recognition challenging

Source: LBT Innovation

How large is the market?

There are over 14,000 manufacturing labs globally. Our two existing competitors are in approximately 150 of these, so the market is huge, and we're effectively competing against

humans doing the task. Now, different sites will have different volumes, and the instruments aren't cheap, so maybe if you're a site that only processes 100 plates a day, then perhaps the economics doesn't work, but we estimate our total current market of just our existing product to be around $2.8 billion.

In the near and medium term, we're going to focus on the top 20 biggest pharmaceutical companies and large contract drug manufacturers. That's where our strength lies. Our throughput makes sense for large labs.

Where do you see the business in three to five years?

First, we need to be cash flow positive. We expect to reach breakeven by 1H26, with FY26 being our first cash flow-positive year.

We only launched APAS in March, and AstraZeneca is a good start, but we're still proving the technology to the industry. In the next two years, we'll establish a market footprint. Beyond that, we want to start rolling out a new product and technology pipeline. We have some new technology and some modifications, perhaps making the unit small for the smaller labs. There are also new applications for the technology, like water testing, but first, we want to establish the footprint, reach positive cash flow, and use that as a base from which to build.

What do you see as the biggest risks to achieving these goals?

At this point, it's probably the sales cycle. As I mentioned, it's currently 9-12 months. We have a good pipeline and engagement with some customers, and we feel pretty comfortable with the line of sight for the next two years to get us to positive cash flow. Beyond that, it's less clear. We expect the pipeline to double or triple at some point, but it's about managing the cost base relative to the time we expect to establish ourselves in the market.

We know the technology works. The tech risk has gone; it's now commercialisation risk. We're very lean and efficient. And we're very focused. We know who our customers are, so now it's about engaging them in a cost-efficient manner.

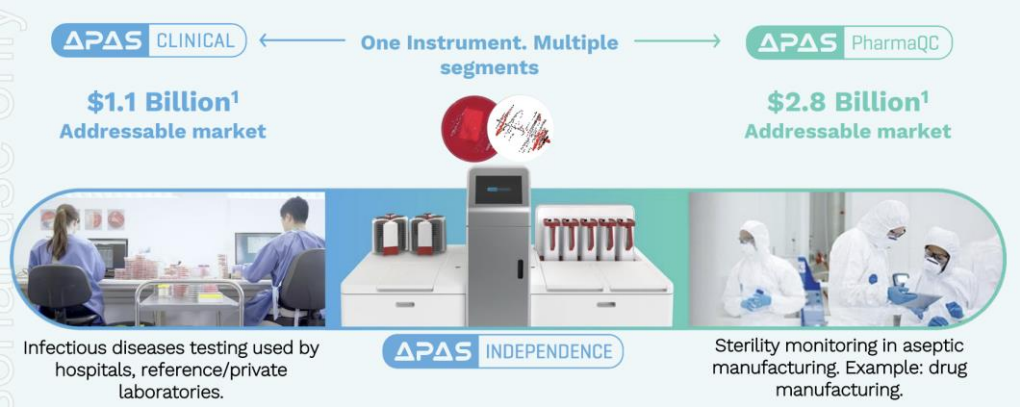
What's the most misunderstood part of the business?

LBT Innovations has had a challenging few years. In late 2023, after realising the market demand wasn't there in diagnostics, we recapitalised the business[1] and pivoted from diagnostics to environment monitoring for pharmaceutical manufacturing. The shift required some modifications to the instrument and the new algorithm and detection system, which we launched in March. We're still in the early stages, but the signs are good. The support and subsequent sales to AstraZeneca are a great reference. We'll ship seven new instruments between now and the end of the year. It's more than we've done in diagnostics over several years.

So, the last few years have been transformational. A lot of new investors aren't aware of clinical, but some longer-standing investors have had a rough few years. We're now a new company. We're recapitalised, we're pushing hard to reach cash flow positive, we've gone through the pain and don't expect to need more capital.

[1] In November 2023, LBT raised $4.5 million through an entitlement rights offer.

Figure 8: In 2023 LBT pivoted from infectious disease testing to sterility monitoring



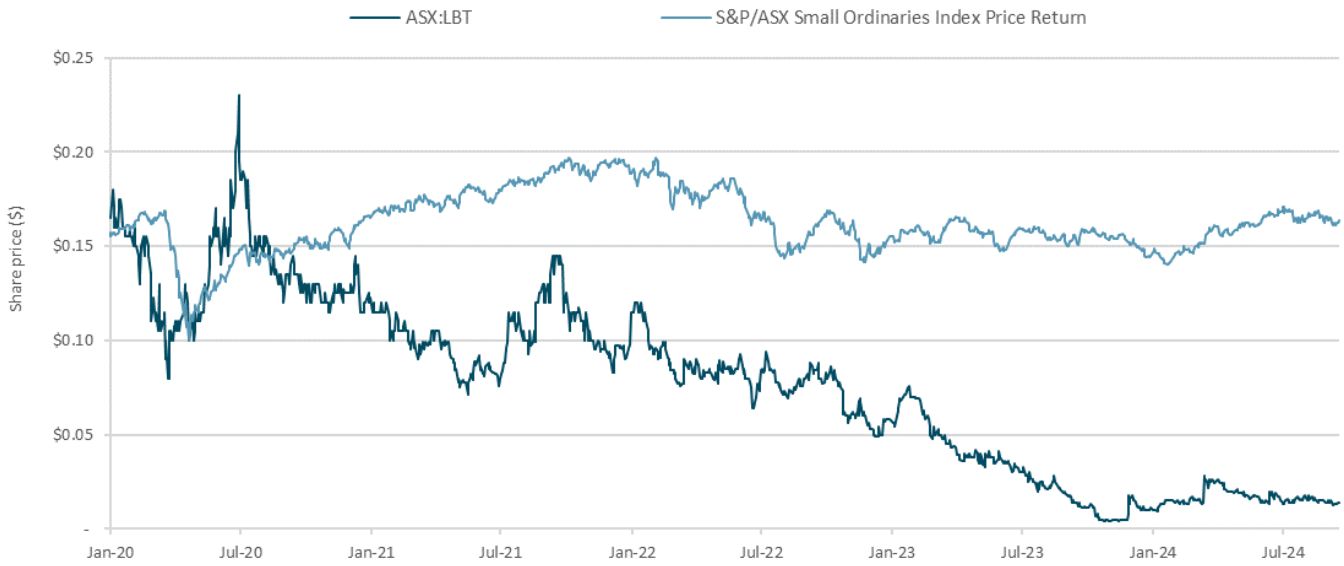
Source: LBT Innovations

What do you wish more investors understood about LBT Innovations?

There are two things. Firstly, the size of the opportunity. We solve a fundamental problem in pharmaceutical manufacturing today. As I said, they'll process 30,000 plates a month in a single AstraZeneca facility. The culture plates have been around for 120 years. We're not looking to invent a new technology but to optimise something currently being done manually everywhere.

Second, we're only at the beginning. We're looking up at Everest but we're not even at base camp. We need to establish ourselves and prove to the industry that the technology works and that we, as a company, are here to stay, and then we truly believe there will be a snowball effect. Our goal is to become the new standard in environment monitoring and we don't see any reason why that can't happen.

Share price performance



Source: S&P Global

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