Tristel Open Day – Shareholder Q&A

Following the Virtual Tour of Tristel's Business www.tristelopenday.com shareholders were asked to send in their questions via email. The Q&A is detailed below.

Question 1

I have watched your Open Day virtual presentation and was somewhat concerned over the amount of plastic used, which is completely natural these days. It was said that the plastic thrown away was not buried in landfill, so, where does it go?

I was introduced to making plastic bottle bricks and have made a few and am constantly amazed at how much plastic we do use without thinking about it. There seemed to be quite a lot of 'solid' plastic used in the Cache collection presentation. Would it be possible to disinfect some things and re-use them, or would no-one really believe you.

Yes we do rely on plastic within the Cache Collection.

That plastic is specifically polypropylene, a recyclable material. The only plastic components that are 'single-use' within the TANK and SHOT Systems are the small and large capsules, holding the concentrate chemistry. These have been reduced in size as far as possible, and can be sent to recyclable waste after they have been burst.

Every other system component (bottles and storage containers) are designed and constructed to be RE-USED for a long time. The re-use life of the components is expected to be almost infinite, subject to normal breakages that will be experienced. At that point in time, the item would be sent to recycling. Bypassing landfill altogether.

Question 2

(A) Byotrol collaboration

*** Is the chemistry for what you intend to market as Tristel 8 now fully developed and where do things stand in relation to securing necessary regulatory approvals and key endorsements (e.g. for NHS use) within the UK and Ireland?**

*** Linked to that, when do you expect to start selling this product?**

*** I gather that the collaboration is only exclusive for the UK and Ireland. Are there any plans to extend it to other jurisdictions?**

*** Are the intermediate level disinfectant products that Byotrol is licensing to you being sold currently and are they an interim solution until Tristel 8 (which I guess is superior and also more expensive?) can be marketed or will they be marketed in parallel on an ongoing basis?**

*** The advantages of Tristel 8 are pretty clear, but what do the other biocidal product give you that you do not have already?**

*** How material are the payments that I understand you have committed to pay each year to Byotrol (I appreciate that some will depend upon sales levels)?**

*** Generally, how significant do you think that this deal with Byotrol is for Tristel? Is it just one of several technical advances being progressed or a potential game changer?**

The technical work required to manufacture and introduce the product to market (which we shall refer to here as "Tristel 8" as a project codename – it will not be the product brand name) has been largely completed. The selection of the products within the Cache Collection which will be combined with the Byotrol technology and presented to the market as a separate SKU has been made. One will be our Jet product which is featured in the Cache Collection presentation. There will be a standard Jet which is solely a CLO2 formulation, and there will be a Jet with the Byotrol residual action technology incorporated into the CLO2 formulation: two SKU's.

In the UK and Ireland we do not require any approvals to market Tristel 8 incorporated into one of our existing products; we only need to have a complete set of micro efficacy and safety data as required by the European Legal Framework for disinfectants. This framework is a combination of the European Medical Device Regulations and the Biocidal Products Regulations. It is unclear at the moment what happens within the UK with respect to the creation of our national regulatory framework.

Key endorsements are earned over long periods of time. We have what can be considered as key endorsements for standard Jet. Jet sales in the UK in our FY2020 were approximately £500,000 and grew 800% in the year. We would not expect to receive new key endorsements for Tristel 8 unless empirical evidence emerges over the long term that a user achieved lower hospital-acquired infection rates from using Jet with Byotrol technology than using standard Jet. We think that is very unlikely because there are so many variables involved that such definitive evidence would likely be impossible to generate.

We expect to make the combinatorial Jet/Byotrol product available to UK hospitals from September this year. The other combinatorial SKUs within the Cache Collection will follow later in 2020.

The challenge we face with our partner Byotrol is essentially one of marketing communication: messaging. Today, UK hospitals use Jet because it is a high-performance, fast-acting biocide, effective against bacterial spores and compliant with every European legal requirement for disinfectants within one standard contact time of 1 minute, that is easy and convenient to use, and priced competitively to pre-wetted wipes incorporating far less effective disinfectant chemistries.

The residual action claim is akin to a "supplemental add-on feature". Ours will be a novel combination of fastest known complete kill, followed up by continuing biocidal activity that will be limited, and subject to what happens to a surface after first treatment, but supported with sound scientific evidence. As stated, our challenge will be whether infection prevention specialists accept this supplemental claim, or indeed require it. It will be a marketing challenge.

The exclusive arrangement with Byotrol is restricted to the UK and Ireland. We are hopeful that we will be able to present these combinatorial Cache/Byotrol products to other markets by mutual agreement with our partner.

The intermediate level disinfectant formulation that has also been licensed from Byotrol will sit in one or more of the Cache Collection SKU's, alongside other formulation offers that come from our own stable of non-CLO2 chemistries. The Byotrol intermediate level formulation is very well-documented and supported by their technical team.

The minimum royalties payable under the license agreement are not material to Tristel plc.

We are enthusiastic for the combinatorial proposition – but it is important that we set expectations sensibly (we follow with interest the excitable dialogue on the share chat rooms): this is not a game-changing technological advance for Tristel plc. The grounded truth is that with our partner Byotrol we have created something unique from a chemistry perspective – an oxidising agent product (CLO2), with all the biocidal performance that only an oxidising agent can achieve, with residual action attributable to Byotrol's polymer technology. The commercial success of that proposition will take a long time to determine.

(B) <u>Surface disinfectants markets</u>

COVID-19 is not going away anytime soon and everyone is now aware that there are going to be other nasty viruses in the future which have the potential to cause global pandemics. So, the market for surface disinfectants - and also the number of companies competing for market share - seems to me to likely to increase significantly. With that in mind:-

*** Are you thinking about expanding your product offerings into the consumer/industrial markets, presumably with a larger partner in order to scale up and cover launch costs?**

*** Is the view still that you need FDA approval (to be able to make mycobacterial claims for the products) before marketing surface disinfectants for which you have EPA approvals in the US?, and if the answer to the above is yes, is there any revised plan to seek FDA approval for surface disinfectant products now - or is the decision to focus on Duo Ultrasound unchanged?**

*** Are you in the process of making (or waiting for determinations) any significant applications for surface disinfectant products in any jurisdictions?**

*** Surface disinfectant sales are still a relatively low percentage of total sales and I guess that the margin that you achieve on those products is lower as well. Over time, do you think that the share of Tristel's total sales for surface disinfectants could reach 50% or more - or is the availability of other cheaper intermediate level disinfectants from competitors always likely to focus more on medical device disinfectants?**

The consumer market would be a new area for Tristel plc, but it is certainly within our sights. The Cache Collection is focused on hospital surface disinfection as a first step, and will then be rolled out into new markets as opportunities emerge. This may well involve partnerships with larger players in these markets.

With respect to your questions regarding the USA, FDA approval is not required for a surface disinfectant to make a mycobactericidal claim. The jurisdictional divide between EPA and FDA is driven by the intended use of the disinfectant.

High level disinfectants for medical devices require FDA pre-market authorisation.

Our disinfectants for surfaces are regulated by the EPA. EPA disinfectant claims include the full scope of efficacy claims, including sporicidal and mycobactericidal.

EPA and FDA have different requirements for the test standards used to substantiate efficacy claims.

We have performed testing for a mycobactericidal claim in accordance with EPA requirements and are preparing to submit a request to the EPA for the addition of this claim to our existing EPA approval for Duo for Surfaces.

We have not progressed with commercialisation of Duo for Surfaces under our EPA approval because the product pack available to us at the time of the approval by the EPA is the same as we use for Duo ULT high-level disinfectant for which we are seeking FDA clearance. The price we would command for the instrument disinfectant is significantly higher than for the surface disinfectant. We decided to postpone marketing of the surface disinfectant to avoid potential erosion of our market opportunity in the instrument disinfection market.

We have developed another pack option that is more suitable for surface disinfection and distinct from the Duo pack. This is the pack which we refer to above – Jet. The new pack works with the same EPA approved formulation. This enables us to revisit our commercial strategy for the EPA approved surface disinfectant and within the FY20-21 we intend to implement required changes withing our existing EPA approval to facilitate this option.

With regard to other jurisdictions, we have a regulatory business development plan that systematically seeks regulatory approvals for our surface disinfectants in multiple markets. In many of our key markets Fuse for Surfaces and Jet are already approved and currently marketed. New products from the Cache Collection will be registered as we complete product design and validation.

We were also able to react promptly to the increased demand for hospital surface disinfectants due to Covid-19. We procured registrations for surface disinfectants in China, several European countries (Poland, Ireland, Portugal, Austria, France, Belgium), and in the Middle East (Bahrain, Kuwait, Jordan).

To enable the continuing expansion of the Cache portfolio we are recruiting into our regulatory team additional expertise in biocidal products regulation. Surface disinfectants are regulated differently from our instrument disinfectants, which are classified as medical devices.

The market for global hospital surface cleaning and disinfection products is far larger than the medical device decontamination market. We have market research data that values the global market in the US$ billion range. These market research studies have to be taken with a pinch of salt and we have no ambition to participate in all facets of the market, but we certainly see huge potential for growth.

We have set our own ambitious target for sales over the next five years. We believe that we can be a global market leader in the high-performance sporicidal disinfectant niche within the hospital surface cleaning and disinfection market. If your question is whether our Cache portfolio could match in sales terms our Tristel portfolio in sales terms in say five years, that would be a target that we should aspire to achieve.

(C) <u>New jurisdictions</u>

*** What persuaded you to make the application for Duo OPH in Canada, as I thought that the plan was to wait until you had an approval from the USA? Further, did you decide on a single application as a pathfinder (as with the FDA), with others to follow on? And, Finncap say in their note that the approval time could be relatively quick, as the data that you have to generate is much less extensive. What have your advisors indicated as typical approval times?**

*** How many submissions and for what range of products have you made in India? And What progress have you made in identifying and agreeing terms with distributors in India? Specifically do you expect to be ready to start selling product in the current financial year?**

Health Canada conducts an independent review of products, although it has requirements similar to the FDA. The key difference is that, unlike US FDA, Health Canada accepts data from studies conducted in accordance with the European Norm (EN) test standards. We were able to complete the dossier using a combination of EN data and new data generated in testing for the FDA programme.

We are submitting Duo OPH product as a pathfinder for our other Duo variants – Duo ULT and Duo ORL.

In 2018, Health Canada changed the classification and approval process for the disinfectants of medical devices. Previously, all disinfectants were regulated by the Food and Drug Regulations (FDR). Medical device disinfectants and sterilants are now subject to the requirements of the Medical Devices Regulations (MDR). Manufacturers, consultants and advisors have little experience at the moment of timelines for obtaining approval of new disinfectants under the MDR.

In India, we have applied for approval for Duo ULT, Duo OPH, and Duo EVE disinfectants for medical devices. In India, these products are regulated under the provisions of the Drugs and Cosmetics Act.

Tristel Wipes for cleaning and rinsing of devices are already approved for import to India on the basis of the No-objection Certificate (NOC) which applies to products that do not fall under the provisions of the Drugs and Cosmetics Act.

We have several expressions of interest from potential distributors that we are interviewing and evaluating and are confident we will have a distribution network in place by the time we have product approval. We expect to start selling in the current financial year.

We have incorporated Tristel India Pvt. Ltd. as a wholly-owned subsidiary licensed to sell, stock, exhibit and distribute within the country.

<u>Question 3</u>

Can you give a bit of colour on your expected revised timelines to get US approval and is this starting to ease?

Our timeline for the US FDA approval is temporarily out of our control for two very understandable reasons.

There are two essential data requirements that are most impacted by the Covid-19 and associated restrictions on travel and hospital access by our staff:

1. *Human Factors/Usability Engineering data which demonstrates that our Duo ULT is designed in a way that supports safe and effective use by the intended users, for intended uses and use environments. The study design involves recruitment of volunteer healthcare professionals for observed use of our Duo and subsequent interviews by the study moderator.*
2. *Clinical use data on the ultrasound devices, which Duo ULT is intended to high level disinfect. The study is conducted in 'live' clinical conditions at the hospital. Tristel staff and microbiologists access ultrasound devices after their use and disinfect them using Duo ULT.*

Microbial samples are collected from the disinfected devices and sent to the laboratory for incubation and analysis.

Both studies demand the presence of our team in the US, which is made impossible by the present travel ban.

Whilst we wait for travel restrictions to be lifted, laboratory based studies, associated data analysis, reporting and dossier collation are progressing satisfactorily. We continue to execute all tasks possible to facilitate prompt submission of the dossier as soon as we have been able to complete user related and clinical studies at the US hospitals.

Question 4

Who makes the containers used for the product, and how do you price the various components? What sort of orders are a normal size? And what is the life expectancy of the product before it gets used?

The containers are produced by injection moulding companies and blow moulding companies in various countries. The tool design for these components was undertaken by our product design team located in New Zealand. We work with a number of excellent injection and blow moulders and have no concentrated exposure to any one company or any one geography, and have no exposure to suppliers in countries where there might be political sensitivity.

The pricing model for Cache breaks away from the traditional pricing models used by 1) cleaning and disinfectant pre-wetted wipe manufacturers/vendors and 2) bottled liquid cleaning and disinfectant manufacturers/vendors. The former typically price their products on a per wipe basis, ie a pack of 200 pre-wetted wipes cost 4 pence each and the pack costs £8. The latter typically price their products based on a per litre of diluted solution basis, ie a 1 litre bottle of concentrate that can be diluted with water to make 100 litres of working strength disinfectant costing 5 pence per litre, would be sold as a pack with a price of £5.

As explained in our Cache Collection presentation we are not engaging in selling pre-wetted wipes. We have separated the liquids used to clean and disinfect from the wiper, or spreader, which the user purchases separately to disperse the liquid. This gives the purchaser the freedom to choose the wiper/spreader of its choice – a choice that might be driven by: a) cost considerations (ie use the lowest cost spreader: a paper towel which is fine for the purpose because the paper is only in very short contact with the liquid so there are no issues with the paper disintegrating); b) environmental considerations, for example a dry wipe substrate made from renewable sources – pulp, bamboo and the plethora of other materials that are being developed; or c) efficacy reasons, for example the infection prevention team might select a dry launderable microfibre cloth because it is well-known that microfibre can enhance the cleaning and disinfection process.

All the Cache componentry is re-usable and is not to be thrown away after use. The only disposable elements of the system are the small plastic capsules that are recyclable. The Cache componentry is, therefore, akin to a fixed asset, or the permanent hardware, of the Cache system and the only consumable element is the concentrate chemistry. The applicators for our chemistries are also re-usable, not to be thrown away. They include a 5ml liquid doser, a foamer, and a sprayer.

Our pricing model is based on the unit of a 5ml liquid dose, and is the same for all the Cache chemistries: detergent, intermediate level disinfectant, or chlorine dioxide sporicidal disinfectant. We have no

intention to ration the use of the highest performing chemistry through price, which is what the incumbent suppliers to hospitals do.

To your question, how will we price the components: whether the user purchases the Cache componentry, or whether Cache provides the hardware to the user on different terms, will be established on a client-by-client basis.

There is a range for a "normal" size order. At one extreme it would be for a pallet load which might be 1,000 capsules; at the other end it would be a single capsule.

Until the capsule is burst into water in either Tank or a Cache bottle, the shelf-life of the capsule irrespective of the chemistry inside, will be two years. Once the capsule is burst into Tank or a bottle, the use life of the liquid is determined by the chemistry concerned.

Question 5

What stops competitors launching their own ClO2 products? What are the barriers to entry? And how much of the ClO2 delivery at the site of use is now in some form of branded or trademarked "system"?

We cannot, of course, state that a competitor or newcomer to our marketplace will not launch its own CLO2 product(s) to be used for the same purposes as our CLO2 products are. For clarity, the purposes our products are used for are: a) medical device decontamination, and b) hospital surface cleaning and disinfection. The unique method that we have created for medical device decontamination is manual application of CLO2 as a high-level disinfectant.

The straightforward way to produce chlorine dioxide is to acidify sodium chlorite with a strong acid, for example hydrochloric acid. This is well-known chemistry and typically how CLO2 is generated for industrial use and in the water treatment industry. It would not be considered an acceptable method for use on a delicate medical instrument like an endoscope, and nursing staff would baulk at handling hydrochloric acid. It is not the method for CLO2 generation that we use.

So, a would-be competitor would have to develop a safe and acceptable acidification process. Some clever technology would be required and we presume that this is a barrier.

Other barriers that have been erected by us are:

- *Hospitals will not use a medical device disinfectant unless it has been extensively validated by medical device manufacturers. We have multiple approvals from manufacturers of endoscopes and ultrasound probes. A newcomer would have to put these approvals in place before introducing its product to our market. Our approvals have been amassed over many years, with great effort and dedication of people resource, and at considerable cost.*
- *We have registered multiple patents relating to the delivery and application of CLO2. These would have to be circumnavigated.*
- *Tristel has been cited in multiple peer-reviewed published scientific papers which have taken over a decade to be compiled. A new market entrant would have to compete with this body of published science and it is inconceivable that it could come to market with such a body of evidence already in place.*
- *As with peer-reviewed science, Tristel is cited in multiple guidelines published by hospital authorities and clinical groups and these citations have taken many years to accumulate. These would be unavailable to a new market entrant to rely upon.*

All our medical device disinfectant products are branded "Tristel". There are no own-label versions of our products anywhere in the world.

Question 6

Referring to the virucidal trial in the US. Why was the complex method of growing virus in cells chosen to demonstrate the effectiveness of virus killing? Why wasn't some form of genetic testing/PCR used? Is the growth of HPV in cells demonstrably consistent or does it introduce another unknown variable (ie the transferability of virus to cells) to the experiment?

Using a host cell to demonstrate a disinfectant'' efficacy is the how virucidal testing is performed.

Viruses are referred to as intracellular obligate parasites, and need a host cell in order to replicate and reproduce progeny viruses. Therefore, the host cells are not present during the disinfection processes and will have no bearing on the level of virus killed. The host cells are used solely as a growth medium to obtain the necessary quantity of virus and to grow any viable virus post disinfection.

Once the disinfectant has been applied to the virus and the contact time is complete, the disinfectant is neutralized, and the remaining fluid is incubated with host cells.

After incubation is complete, the solution is then analysed for any infectious virus that has not been destroyed by the disinfectant via reverse transcription polymerase chain reaction (RT-qPCR). It looks for a specific transcript (E1^E4).

If the disinfectant has been successful in destroying the virus, there will be no viral infectivity picked up by the RT-qPCR in the host cells.

The method which has been used by Dr Craig Meyers to grow virus titres, demonstrating its reproducibility between assays has been published in numerous scientific journals.

Question 7

Regarding the sales and marketing process. Does Tristel use a CRM system to log sales contacts with hospital professionals? And who are the decision makers in the hospital? Is this a financial sell (less need for machinery etc) or a comparative efficacy sell (Cl02 kills more bugs than other systems)? How long is the typical selling cycle from first call to first order? And do you have to keep calling to encourage pull through of the product from store room to product surface? Which product is the easiest to sell? Cache? Does this then open doors to upselling the range?

Our Company uses a CRM system that is standardised across all subsidiaries.

The principal decision-makers in hospitals are the infection prevention teams. All hospitals in all countries have an infection prevention team.

As our medical device disinfectant products are highly specialised and there is no alternative high-level disinfectant that is applied manually, the product selection process is largely determined by efficacy and safety considerations.

For our Cache surface disinfection products, we expect procurement and finance to be an important influence in the decision-making process. Our Cache presentation set out the four principles that have

guided our product development process, one of which is that we will deliver transformational cost savings for hospitals.

There really is no "typical sales cycle" from first call to first order. Ours is a knowledge-based sales proposition and the persuasion cycle can take years; it can also be almost immediate.
However, it is undeniably the case that the cycle has shortened as recognition of the Tristel brand name, the Tristel technology and our products' integrity has grown.

Once a hospital has taken the decision to use our products, the process to full implementation is i) order ii) supply iii) orchestrate training for users which we increasingly perform using our 3T digital tools (see the video presentation by Esther Jansen) iv) re-supply v) periodic updated training vi) continuous relationship management including the provision of new micro test data and new published science and guidelines (see Florence Rowe's video presentation introducing Dr Craig Meyer's work with our products and their effectiveness against Human Papilloma Virus).

Our medical device disinfection products are used every time a medical instrument is used on a patient. So patient procedure number drive our revenues in our Tristel brand.

In our Cache brand, the implementation process will be the same. The pattern of use is different. It is not patient driven. Use of our products and, therefore, demand will be driven by the frequency of cleaning and disinfection events, in other words how often and how intensely wards will be cleaned and disinfected throughout each day. Training will be an important contributor to Cache's expected future success, and our digital training and data management tools will be attractive to hospital managements everywhere.

In answering the question, which product is easiest to sell? Cache? We remind all shareholders that your Company's business has historically been focussed on the Tristel medical device disinfection product range. We have increased sales at a CAGR of 17% over a fifteen year period – we think this consistent sales growth indicates we have been successful at selling the medical device disinfectant products. We are not sure any of us can say it has been easy.

Cache is a new product range and a completely different conceptual proposition. We have not yet been actively selling all of the Cache Collection which is showcased in Elanor Dixon's presentation. But those products that have been available to sell accounted for £5m sales in FY 2020, an increase of 139% on the previous year.

Upselling – Tristel and Cache are two completely different product propositions – one is for medical device disinfection and one for hospital surface cleaning and disinfection. It is really important for our shareholders to note that – apart from our CLO2 chemistry – there are no products used in hospitals that are used for the high-level disinfection of semi-critical medical devices AND ALSO for surface disinfection. The significant advantage we enjoy over all competitors is the widespread recognition of CLO2 as a superb high-performance disinfecting chemistry suitable for instruments that go inside the body, and that its ability to be used on medical instruments most definitely marks it out as surely the highest performance chemistry for the disinfection of surfaces like bed mattresses and door knobs. The pedigree of CLO2 and our stronghold in medical device decontamination provides us with an important beachhead from which to invade the hospital surface disinfection market. This is probably best described as a cross-selling opportunity.

Question 8

Tank, Shot etc . It was suggested that plastic components don't have to end up in landfill but the plastic containers of chemicals (different coloured liquids) looked like fairly standard hard plastics. Are they recycled or compostable? What did the comment refer to?

Cache is a new product range and a completely different conceptual proposition. We have not yet been actively selling all of the Cache Collection which is showcased in Elanor Dixon's presentation. But those products that have been available to sell accounted for £5m sales in FY 2020, an increase of 139% on the previous year.

It is useful to refer back to the Four Principles stated in our Cache presentation. We have reduced the size, and therefore the plastic content, of our capsules as far as possible whilst ensuring each capsule can deliver a significant amount of solution (one 200ml capsule can create enough solution for 2,000 surface wipes).

Question 9

Is Cache of similar profitability to the other products? Or does product mix impact gross profit much?

We believe that our Cache business model can achieve gross profit margins that will be in line with the historic margins that the Company has achieved.

Question 10

Finally, is there a thorough piece of research that might address most of these issues and others that may have access to?

You can access equity markets research via our website: https://www.tristel.com/uk/investor-centre/equity-research . You can see previous investor presentations at https://www.tristel.com/uk/investor-centre/investor-presentations.

Question 11

What is the likelihood of microbes developing resistance to Chlorine dioxide based products?

Resistance of microbes is a topical question of the moment, especially considering the problems we are facing in the modern world with drug/antibiotic resistance. It is important to note that microbial resistance to disinfectants can also develop.

Chlorine dioxide's mode of action in destroying microbes is referred to as 'oxidising'. Chlorine dioxide (or CLO2) reacts with biological thiols which play a vital role in microbes, and by reacting with these, it is not possible for resistance to develop.

To date there is no data showing the possibility of resistance from microbes to oxidising disinfectants.

Be assured we stay abreast with all of the latest findings within the scientific community by attending microbial conferences with specialists in the field, and researching within our science department the latest released information.

Question 12

Is there much difference between the margins (gross and net) for the machine and surface disinfection products?

In our model we believe that we will be able to achieve gross margins on the Cache Collection systems – Tank and Shot which are showcased in session #5 in our Open Day presentation – that are comparable to the corporate gross margins that we have attained for the past five years. This current and historic corporate gross margin level has been driven by the medical device disinfectant products which we manufacture and sell as these account for approximately 80% of all revenues.

What is less certain is the level of customer support that we will have to provide to adopters of the Cache system. In a far more primitive form than the version of Tank shown in the presentation, we have two years' experience with a number of hospitals in the UK and a few overseas using this storage, dispensing and distribution concept.

The concept separates the liquid from the wiper – eliminating the use of pre-wetted wipes – and involves a change in practice by the user. Our experience with our early adopters is that this involves a very significant change management process for the hospital organisation. Supporting that change management process with smart, user friendly training tools and providing important data for management is a large part of the rationale behind our investments in digital train, track and trace methods.

In summary, we have yet to discover how the sales and sales support teams will have to be grown to serve an expanding user base, and the impact that investment might make on net margins. The perfect scenario would be the one in which our sales teams are sizeable enough to meet the users' needs without investment in additional headcount. If we achieve this, we should benefit from significant positive operational leverage. But the jury has to remain out on this possibility until the sales campaign is in full flight.

Question 13

Professor Meyers says Tristel is 1 of 3 companies in the world with a disinfectant effective against HPV. Who are the other two and what method do they employ?

The other two companies and their products are: i) Nanosonics, Australia, and their nebulised hydrogen peroxide-based high-level disinfectant process for intra-cavity ultrasound probes (www.nanosonics.com.au) – product name Trophon; and ii) Germitec, France, and their UV-C light-based high-level disinfection process for intra-cavity ultrasound probes (www.germitec.com) – product name Antigermix. Both products are equipment-based, capital items. They are not complete decontamination processes (see below), but disinfection methods only.

Question 14

What is your estimate of the size of market opportunity in HPV deactivation and how much of it do you currently supply?

There is a need for disinfection products that are proven effective against Human Papillomavirus (HPV) wherever medical instruments are used that can potentially be the route of transmission of viral infection from one patient to another. Medical instruments are fomites that can harbour pathogens and be a vector of transmission. Fomites can be a vector of transmission for both viruses and bacteria. This is why the choice of appropriate disinfectants to disinfect medical devices is so important.

You will note that sometimes we use the word "decontamination" and sometimes "disinfection". These terms are actually not inter-changeable. In infection prevention parlance, we use the term decontamination to mean a combination of processes to eliminate potential sources of infection: the conventional wisdom is that an instrument needs to be thoroughly cleaned before it is exposed to the disinfection method. The reason is that if the device is soiled, the effectiveness of the disinfection method could be impaired. For example, with UV light, the soil would shield the organism from the light and prevent the killing action. With a chemical disinfection process, the soil might impair the effectiveness of the chemical. All infection prevention guidance, therefore, refers to the need to clean and then disinfect: the decontamination process.

Disinfection is one stage in the decontamination process.

HPV is the cause of 99% of all cervical cancers worldwide (see session #2 in our Open Day presentation). We can, therefore, clearly define a marketplace that are the clinical areas that address women's health and the types of invasive diagnostic instruments that are used in those areas. There are two main diagnostic modalities – ultrasound and endoscopy. We can, therefore, segment the market opportunity further to: i) endoscopic instruments used in women's health, ii) ultrasound instruments used in women's health, and iii) other diagnostic instruments that may or may not be invasive but which present a risk of transmission of HPV.

Our products – Trio (which is a complete decontamination process) and Duo (which is a disinfection process only, but can be combined with other Tristel products that clean the medical device) – are, therefore, very relevant to medical devices used in gynaecology. Our products can equally be used on endoscopic and ultrasound devices because the shape and design of the instrument does not affect the ability of a human hand to cover the external surface of the instrument with our Trio and Duo products. The products of Nanosonics and Germitec are machines and have been designed to physically accommodate specific medical instruments – the chambers of these machines are designed and contoured for only certain instrument types. In the case of these two products, they are designed for ultrasound probes only.

A market segment in which we actively participate worldwide is the decontamination/disinfection of invasive ultrasound probes, many of which are designed for vaginal examinations. The other use for these probes is examination of the rectum. We have read our competitor's estimates that as many as one billion ultrasound probe procedures are undertaken globally each year. Each procedure represents a revenue opportunity.

In the markets we address directly, we believe that we are one of the two leading suppliers to this segment, and in many of them we will be the leading supplier. Nanosonics' Trophon is the market leader in the USA as it has obtained FDA approval. We do not yet have that approval.

It is important to note that around the world not all procedures involving an invasive ultrasound probe are currently addressed by a high-level disinfection product. China is an example of such a market. As infection prevention standards rise in countries where they lag behind those we enjoy in the UK, our market will grow in size.

Within women's health, a second segment that we are actively engaged in is hysteroscopy. A hysteroscope is an endoscopic instrument that is used for the inspection of the uterine cavity with access through the cervix. In this field, our Trio ad Duo products are joined also by our Stella soak system which uses our Tristel chlorine dioxide chemistry, and which enables liquid to be pumped through the internal lumen of the instrument.

A third segment, which is in an early stage of development, is the disinfection of colposcopes. A colposcope is used to view and capture an image of the cervix, and whilst not used invasively, it is being handled by the person inserting the speculum and performing the examination. A colposcope is very susceptible to contamination with HPV. One of the reasons why we made a strategic investment in the Israeli company, Mobile ODT, which manufactures and sells a mobile colposcope ideal for low-resource countries, is to break new ground and create awareness of the need for a disinfectant for these instruments that is effective against HPV. We have branded a version of Duo for this specific purpose: Duo EVE.

Finally, HPV is a cause of a fast-growing group of cancers in the head and neck region. 90% of oropharyngeal cancers are caused by HPV. This condition would be treated by a different clinical specialty – the Ear, Nose and Throat (ENT) doctor. ENT doctors would use an endoscope – the nasendoscope – to examine this part of the anatomy. A nasendoscope is an invasive instrument requiring high-level disinfection which should be chosen for its proven effectiveness against HPV.

ENT is a very significant market segment for Tristel. In this arena, our competitors are not Trophon and Antigermix, but endoscope washing machines that typically use the disinfectant chemistry Peracetic Acid. We consider that Trio is the market-leading product in all our markets.

As we hope we have explained, Tristel's addressable market in the clinical areas of a hospital where HPV infection is a potential concern is far greater than that of any other infection prevention company because we are a high-level decontamination process capable of addressing both ultrasound devices and endoscopic devices.

There are four relevant papers that can be accessed from the Tristel Science section of our website. They are:

- *What you need to know about HPV*
- *Cervical cancer – what you need to know*
- *Human Papillomavirus (HPV) in ENT*
- *A brief overview on Human Papillomavirus – Biology, Devices and Decontamination*
