TAS Research Report:
Procuring ICT Products from Retail Stores vs. Transversal Contracts

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Executive Summary

In support of Government's cost containment measures, Departments are mandated to deploy the most cost-effective solutions for their ICT requirements. Trying to act in the best interest of Government, officials often attempt to save money by procuring "cheaper" products from retail stores, based on the perception that products on transversal contracts are too expensive. This is the result of a misplaced focus on **up-front price** instead of **total cost** as mandated by the Constitution.

Contrary to this "cheapness" focus, the cost-effectiveness mandate of Section 217 of the SA Constitution requires that Government make purchasing decisions based on **long-term cost** and **not** on initial price.

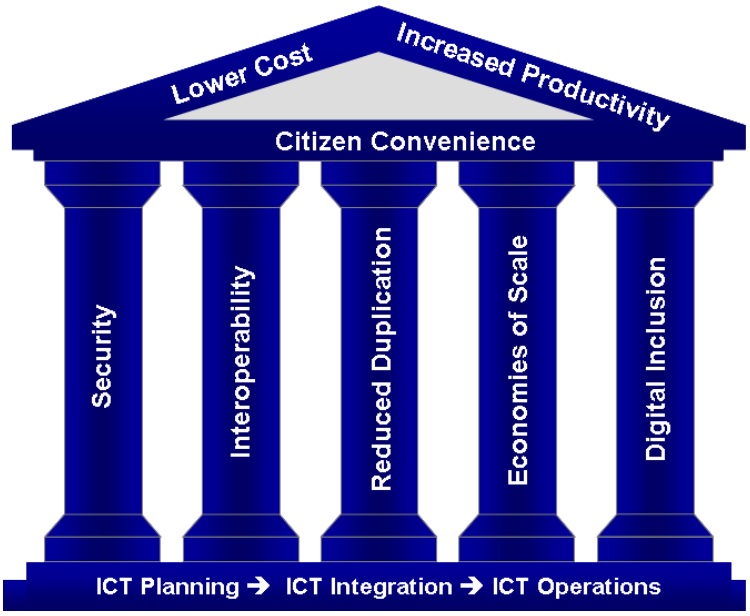

Figure 1: ICT House of Value

When considering ICT cost elements, Departments need to take into account the fact that transversal contracts are designed to address the following strategic Government requirements:

- The **ICT House of Value**, including security, interoperability, economies of scale, reduction of duplication, lower cost and BEE.
- **Enterprise ICT requirements** such as security, compatibility and business continuity.
- **Lower total cost of ownership – TCO** (as per the Constitution) through value-added features, accessories and services to provide a complete, cost-effective solution to Government. This includes on-site support, dedicated and security-cleared service personnel, and integration of solutions into existing ICT environments.

By contrast, **retail stores do not cater for TCO or enterprise requirements**, with no or very limited provision for any of the factors listed above. In fact, the types of systems specified for Government or enterprise are usually not even stocked in retail stores.

This means that any price comparison between retail systems and those available on transversal contracts is **fundamentally flawed**, since the enterprise requirements and value-adds that the contracts mandate are not addressed by retail products. The infographic below summarises a comparison of enterprise features between products from retail stores and transversal contracts.

As noted above, **total cost of ownership** (TCO) must be a major factor in ICT decisionmaking. Gartner's TCO studies show that **systems without enterprise-class management and security features are significantly more expensive** (up to 40%) to operate over the standard product lifespan, and TCO would therefore be increased, not decreased, if Government were to deploy consumer-focussed systems.

To address the pricing concern, SITA has done periodic comparative price studies since 2006, comparing pricing on an "apples-to-apples" basis. These studies found that transversal contract pricing is generally **in line** or **lower** than comparable retail and enterprise pricing. A price comparison done for this report fully supports these earlier findings: the study below shows that, with a few exceptions, the systems are significantly lower-priced via transversal contract. Details on the price comparison can be found in Annex A.

Figure 2: Infographic – Laptop from Contract 2005 vs. Retail shop

Conclusion

Retail- and home-focussed product lines are **not appropriate** for enterprise and Government due to inherent functionality, security and service limitations. Therefore, **price comparisons between contract and retail products are misleading**. Specifications of CPU, RAM and storage do not determine whether systems are the same or even comparable. Products on Government transversal contracts are designed to deliver lower long-term TCO, and Government Departments should focus on optimising their internal standards in terms of actual business requirements (i.e. purchasing contract systems that best suit the user requirement), rather than considering consumer products.

Notice

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TAS Research Report: Retail vs. Contract
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Approval

The signatories hereof, being duly authorised thereto, by their signatures, hereto authorise the execution of the work detailed herein, or confirm their acceptance of the contents hereof and authorise the implementation/adoption thereof, as the case may be, for and on behalf of the parties represented by them.

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HOD: ICT Governance — Date
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Consultant: Technology Advisory Services — Date

Foreword

This research report compares the value to Government when procuring equipment from retail stores vs. transversal contracts. The report establishes that it is not in Government's best interest to procure from retail stores, demonstrating in fact that it is not even possible to do a legitimate price comparison between the two channels in terms of enterprise ICT requirements. Apples-to-apples price studies show that transversal contract pricing is typically lower, while providing significantly more value to Government in terms of its critical business drivers, such as BEE, service delivery, business continuity and security.

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1. Introduction

In support of the Public Finance Management Act, Government Departments are mandated to deploy the most cost-effective solutions for their ICT challenges. Acting in the best interest of Government, officials often take note of newspaper advertisements for specials on the latest laptops, PCs, printers and cameras. At first glance, the prices advertised in these leaflets often compare very favourably with what is available on SITA transversal contracts, and the question naturally arises why Government does not take advantage of these specials.

Unfortunately, **total cost of ownership** (TCO) is never mentioned in these advertisements, and in most cases a fair comparison is not possible between what Government typically procures and what is offered by retail stores. Government requires secure, enterprise-focussed systems with low operating costs, long lifecycles and guaranteed business continuity. Retail stores, on the other hand, focus on the lowest price, very short product replacement cycles and little regard for support or compatibility.

In addition to the TCO and enterprise requirements, the SITA Act mandates that Government must procure **certified ICT goods and services**. Given that retail products typically do not meet Government requirements, very few of these products are certified by SITA.

To dispel the confusion and address the misconceptions around this issue within Government, SITA was tasked by DPSA and GITOC to produce a Research Report addressing all the relevant issues. This report discusses the differences between retail and enterprise purchasing, highlights the risks and pitfalls associated with procuring from retail, and **refutes the perception** that cheaper retail products are better by demonstrating retail's lack of support for vital enterprise cost services and functionality.

1.1 References

- The Constitution of R.S.A., 1996
- Public Finance Management Act (PFMA), Act 1 of 1999
- SITA Act, no. 88 of 1998 as amended
- National Treasury Practice Note 5 of 2009
- *Benchmark Report: Computer Equipment — PCs*, Purchasing Index, October 2006
  - This independent study, commissioned by SITA in 2006, compared pricing no transversal contracts to market-related offerings, and found that contract pricing was indeed competitive and in line with market pricing.
- Latest information on Government transversal contracts: www.sita.co.za/contracts
- SITA Product Certification website: www.sita.co.za/prodcert.htm
  - Technology Certification Process (TCP), eNSQS-00144, v3.3
  - OEM Memorandum of Agreement, eIRPL-00002, v1.8
  - Technical Specifications and Deployment Guides for PCs & Peripherals, Servers & Storage, Audiovisual Communications Technologies and Networking
  - Certified product database
- Research material:
  - Network Alliance: *Understanding Technology Costs* www.networkalliance.com/your-advantage/understanding-technology-costs
  - GartnerGroup: *Effective Management Can Cut Total Cost of Ownership PCs by 42%* www.gartner.com/newsroom/id/636308

- Andrew W. Loniak: *Never Buy the $299 Laptop for Your Business* www.linkedin.com/pulse/never-buy-299-laptop-andrew-w-loniak
- Infoworld: *Microsoft Windows Automatic Update meltdowns* www.infoworld.com/article/2889295/microsoft-windows/20-epic-microsoft-windows-auto-update-meltdowns.html

2. Retail vs. Enterprise Channels

This section compares the two types of resellers or channels under discussion. The first channel is the typical retail store, which sells computer products in shopping malls or on-line. The second channel is an enterprise-focussed organisation with trained staff, dedicated services and distributed infrastructure well-suited to support Government ICT systems. The table below compares these two channels in terms of 4 major criteria.

	Retail store	Corporate reseller
	 	 
Target market and focus	Consumers, families, gamers, casual and impulse buyers with "special price" focus.	Enterprise sector: Government and corporates, mission-critical business requirements with cost-effectiveness focus.
Business model	Lowest possible price, special-driven, dumping of older products. Very limited service infrastructure or support capabilities. Carry-in service offering, no SLA.	Business continuity focus, relationship-driven organisation with experienced staff. Extensive service and support capabilities. On-site service offering with next business day SLA.
Product types	Home-focussed, low duty-cycle products with limited capabilities. Short lifespan (1–2 years), very short model cycle (typically 3–6 months)	High-duty cycle products with extensive enterprise capabilities, including security, reliability, manageability and durability. Long lifespan (Government systems run for 5 years or more), models available for 12–24 months
Product lines	Consumer range from major brands (e.g. Acer, Dell, HP, Lenovo) 	Business range from major brands (e.g. Acer, Dell, HP, Lenovo) 

Table 1: Retail vs. Enterprise channels

Given retail stores' lack of focus on enterprise capabilities, cost-effectiveness and service, and the inherent design deficiencies of consumer-focussed products, SITA **strongly recommends** that Government not consider purchasing or deploying products from discount stores.

Annex I: has a detail analysis of the drawbacks and benefits of the respective channels.

3. TCO Considerations

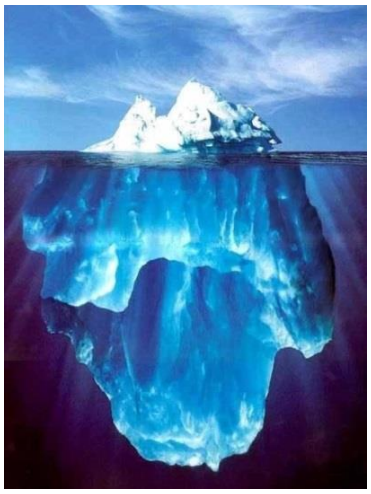

Figure 3: Hidden long-term costs dwarf up-front price

Section 217 of the SA Constitution states that procurement must be fair, equitable, transparent, competitive and **cost-effective**. Cost-effectiveness is measured by total cost of ownership (TCO), not purchase price. Like the iceberg pictured here, there is more to ICT costs than meets the eye – the **hidden, on-going costs are usually by far the largest component**. To give Government the best value for money, transversal contracts focus on the entire TCO iceberg, not just the part that is visible above the water. This section discusses important TCO factors that are not addressed by retail products.

The Gartner research group[1] defines TCO as the total cost of acquiring, using and maintaining an ICT investment over time. TCO includes direct costs (hardware, software, operations and administration) and indirect costs (end-user operations and downtime). When TCO is overlooked and not budgeted for, ICT cost calculations are inaccurate, and purchasing decisions are misinformed.

Whereas transversal contracts address a wide range of TCO considerations (in line with National Treasury guidelines), retail sales focus only on the "sticker price", i.e. the up-front price. Research from GartnerGroup has shown[2] that the **purchase price is typically less than 30% of the total cost**. Business continuity, labour and running costs make up the bulk of the other 70%. Therefore, lifecycle costs are much more important than price — and this is where enterprise products outclass retail products. Government should not be focussing on the purchase price of systems, but on lowering long-term costs.

The findings of the various studies and analyses done for this report clearly show that there is no real competition between transversal contracts and retail stores, and that **transversals are the most competitive and cost-effective** channel (from a TCO perspective) for ICT goods. In contrast with retail products, the following benefits are offered by systems on transversal contracts:

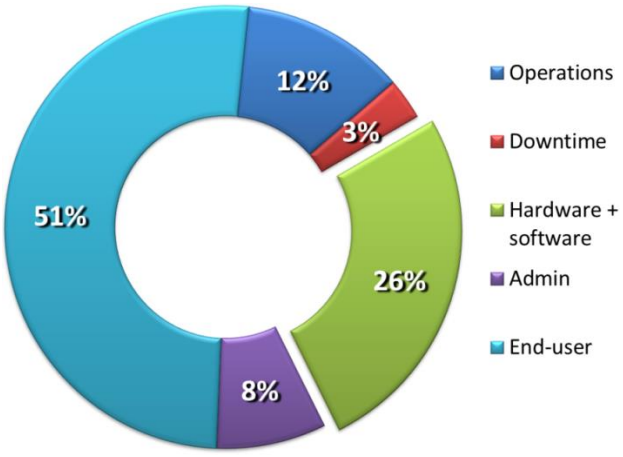

Figure 4: Gartner TCO model

- A complete packaged solution focussed on and designed for Government requirements
- Secure, compatible and certified as per SITA Act
- On-site service and support with guaranteed next business day SLA
- Dedicated, enterprise-focussed sales and support resources

These service elements and value-adds may increase the initial price, but **lower the TCO** of the total solution. They are usually completely absent from retail product offerings.

3.1 TCO and Enterprise Requirements

Any ICT product designed for an enterprise environment, whether it's a laptop, printer or UPS, has to conform to a set of standards and functionality that is vastly different from those important in a consumer or home environment. None of the following enterprise requirements are adequately addressed by consumer-

[1] www.gartner.com
[2] www.networkalliance.com/your-advantage/understanding-technology-costs
www.gartner.com/newsroom/id/636308

level systems. Government officials should take note of this when making purchasing decisions, since all of these factors have a major impact on TCO.

- Enterprise security (including theft and data loss prevention, e.g. remote wipe)
- Enterprise manageability (including remote troubleshooting and asset tracking)
- Guaranteed compatibility
- Business continuity via product stability, quality, reliability and longevity
- On-site delivery, installation and support
- Lowest possible TCO
- Economies of scale
- Stable and predictable transitions to new models (12–18 month cycle)
- Customisable configurations and volume supply of the required configuration
- Scalability and expandability
- Choice of business operating systems (Windows Pro, Linux)
- Component stability
- Commonality of components
- Form factor flexibility
- Ruggedised mobile platforms
- Direct relationships with OEMs
- Stable pricing

These enterprise TCO factors are discussed in more detail in Annex A:.

3.2 TCO and the Impact of Failures on Productivity

A serious risk for Government when purchasing from retail is the typical absence of any type of **on-site support**, and the lack of guaranteed service turnaround time.

Almost everyone has been through the following scenario: the TV or DVD player breaks, so it has to be taken to the store to be repaired. This requires waiting in a queue to hand in the broken device. Usually the device needs to be sent back to the workshop for repairs, which often takes at least **six weeks**. In retail there is no swap-out product or any other service to ensure continuity of the television viewing experience.

Purchasing ICT products from retail exposes Government to this same scenario, except that when it's a PC or laptop, it probably contains **valuable data** that could not be backed up or encrypted before the failure. Business continuity for Government has a service delivery impact much more serious than a broken television. Can Government Departments afford six weeks of downtime?

The typical failure scenarios below show that downtime costs (**lost productivity**) are significantly more for the retail product due to the lack of an SLA. In addition to this, since the retail product has to be taken off-site for repairs, data could be lost or stolen, which constitutes a serious risk for Government. Retail stores have no processes in place to protect customer data. Due to the lack of on-site service, Government has no guarantee that confidential data will not be lost or compromised while being repaired at the store.

3.2.1 Failure scenario 1: Product purchased from Contract

Figure 5: Scenario 1 – Contract laptop is repaired within 1 day, no data loss or leaks

3.2.2 Failure scenario 2: Product purchased from retail shop

Figure 6: Scenario 2 – Retail laptop causes weeks of lost productivity, lost or compromised data

Important questions to consider:

- How much productivity is lost when a Government end-user has to return a broken product to the store for repairs, and wait until it comes back?
- How much **more** productivity is lost when the laptop is repaired, but the customer has to recreate lost data?
- What is the risk to Government when confidential data is leaked or stolen due to the unavailability of on-site support?
- Can Government afford to deploy consumer-class products when considering TCO, productivity and security?

- Transferring the risk to the user via a bring your own device (BYOD) programme still exposes Government to risk, since the poor service level will still affect users who bring consumer-class systems. Some costs are just better hidden with BYOD, meaning that cost-effectiveness is more difficult to achieve.

3.2.3 Failure scenario 3: Retail product out of warranty

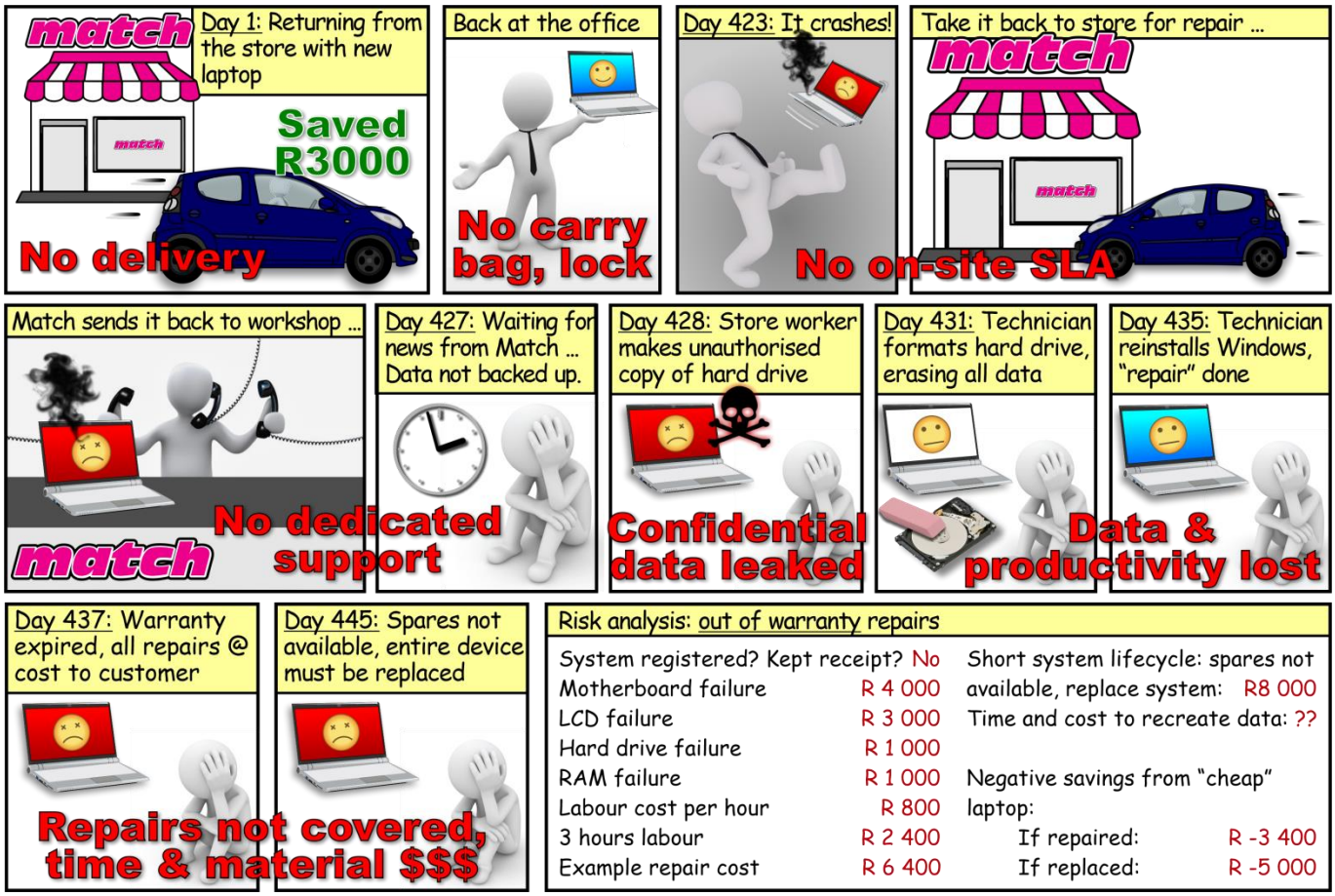

Figure 7: Scenario 3 – Retail laptop fails out of warranty, no repair possible

This scenario is the worst-case failure, where the retail product is out of warranty, and not only is there no SLA or guaranteed turnaround, but spares for the product are no longer available. In addition to the risk of lost data, the device has to be completely replaced at the cost of Government. The final TCO calculation is a bad outcome for the end-user Department, since not only are the data lost and time wasted, but a second laptop has to be procured for which no funds may be available.

3.3 TCO and Printing Costs

TCO must be calculated over the useful life of a product or system (could be 5 years or longer in Government), and must also take into account a significant duty cycle. For example, printers will print larger volumes in an enterprise environment, and this should be reflected in the cost model. A cost comparison between different printing systems shows that, even though consumer devices are cheaper to purchase, they are inappropriate for enterprise or Government use, being much more expensive to own and operate over time.

The hidden costs associated with poor quality, performance or compatibility are much larger than the up-front savings for a cheaper product. The iceberg illustration highlights the hidden dangers in trying to save money by deploying consumer-grade products. Procurement decisions must be made on the basis of

standards, security, quality and TCO, which takes into account all costs involved in procuring, operating and maintaining the system.

The table compares the TCO of a typical home printer available from retail with a printer designed for a work environment. **Green text** indicates benefits, while **red** indicates disadvantages. Once the analysis moves beyond the most superficial factor (up-front price), the enterprise product is clearly superior. "Cheap" can become very expensive in the long run.

Even though the office product is 4X more expensive up front, it is almost **2X cheaper** to own after 3 years. The higher the print volumes, the worse the consumer product looks: printing 1000 pages per month, the office product costs **>2.4X less**.

In addition to the cost difference, the speed of the consumer printer is less than half that of the enterprise product, its duty cycle and performance are unacceptably low for business use, and the number of interventions required will be much higher due to smaller ink cartridges and paper trays.

The graph shows conceptual TCO curves for different types of printers. Consumer printers are very cheap up front, but become prohibitively expensive to run over time.

This again demonstrates that products should **not** be purchased just based on the purchase price, as the apparent benefit is deceptive. Government Departments that purchase "cheap" products from retail stores risk crashing into an invisible TCO iceberg.

	Retail	Office
		
Price	**R909**	**R 3 799**
Ink prices	Black: **R257** Colour: **R303**	Black: **R790** Colour: **R649**
Ink yield (pages)	Black: **190** Colour: **165**	Black: **3 000** Colour: **2 000**
Monthly volume	**250** pages	**2 000** pages
Print speed	6 pg/min	20 pg/min
Cost / page	**R3.19**	**R1.24**
3-year TCO (200 pages/month)	**R23 439**	**R11 838**
3-year TCO (1000 pages/month)	**R115 282**	**R48 325**

Table 2: Printer total costs (TCO)

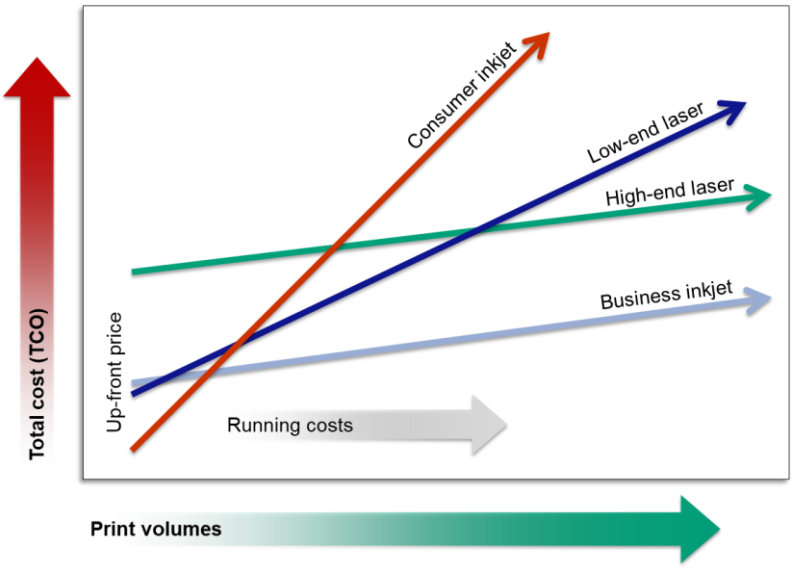

Figure 8: Running costs of different printer types

4. Comparing Retail offerings with Transversal contracts

This section highlights the differences between what is offered by default on Government transversal contracts, versus what can typically be expected from a shopping mall store.

Component / Value-add	Retail	Contract
Cheap, special-based prices for limited time (often dumping of older models)	✓	✗
System designed for enterprise use (work focus vs. home focus): secure, stable and reliable	✗	✓
Fully secure product with hardware TPM, data encryption, asset tracking & remote wipe, cable lock (e.g. Kensington lock)	✗	✓
Enterprise OS (Windows Pro/Enterprise) — not retail Windows Home/Basic	✗	✓
Enterprise directory integration (AD domain support)	✗	✓
Downgrade rights and alternative OS options (e.g. Linux)	✗	✓
Stable platform: 12–18 months model change cycle with no component changes (retail products change in 3–6 months)	✗	✓
Designed product lifespan >= 3 years: more cost-effective, less wastage	✗	✓
Enterprise-grade, high-quality, durable construction (e.g. laptop hinges, MIL-STD)	✗	✓
Support for enterprise system management (e.g. DASH, Wake on LAN)	✗	✓
Support for drive imaging to save deployment time and labour	✗	✓
Fully-specified, configured and certified system (no missing components such as monitors, bags or software)	✗	✓
High-contrast, anti-glare monitors for office environments	✗	✓
Enterprise-level accessories: docks, WWAN, fast chargers, upgrade components, various high-quality carry bags, advanced locks	✗	✓
No trialware, demoware, adware or nagware	✗	✓
Included services: On-site delivery, installation and 3-year on-site support SLA	✗	✓
Environment-friendly with support for Green ICT	✗	✓
Flexible, customisable configuration: Government can purchase a device that meets their requirements exactly (retail stores often have a single configuration)	✗	✓
SITA certification	✗	✓
Support for SA economy (BEE, PPPFA)	✗	✓

Table 3: Guaranteed value-adds on transversal contract

It is evident that a typical retail product does not offer **nearly** the same benefits, functionality or capabilities as a baseline contract product. While there are cases of some overlap of functionality, the contract **mandates** the minimum configuration and included accessories. Therefore Government Departments are **certain** that they will get what is specified on contract, which includes a fully-configured, enterprise-oriented solution. This is not true of retail products, where stores often advertise low-priced but incomplete solutions (e.g. a PC without monitor or OS).

For more information, **Annex C:** has a detailed comparison between retail and contract laptops, while **Annex G:** examines the typical overall differences in design and build quality. **Annex F:** and **Annex H:** provide more detail on transversal value-adds and the shortcomings of retail products.

5. Reducing costs via Transversal contracts

To ensure cost-effective ICT solutions, it is vital that the **business requirement** drive the procurement process. Nice-to-have features such as bright colours should not be primary deciding factors. For example, the type of applications to be used on a laptop determines which system to buy, and not the person's job level or how cool the device looks.

The diagram below illustrates the relationship between features and price of the current specification for laptops on transversal contract. The usage profile, performance and mobility required by the user must determine which laptop to buy, taking into account that price increases with functionality—to the extent that a Note5 product can be as much as 3–4 times more expensive than a Note2 product. The diagram makes an analogy between different types of well-known cars to illustrate the price/performance relationship. The principle is that very few users need a Ferrari-type laptop, and therefore most purchases should focus on the **Note2** and **Note4** categories, while avoiding high-end ultrabooks as well as low-quality retail products.

Note1	Note2	Note3	Note4	Note5	Retail
Chromebook / Thin client	**Value**	**Ultrabook**	**Midrange business**	**Advanced business**	**JUST CHEAP**
1GHz AMD / ARM / Intel	Last-gen Celeron/Athlon dual-core	Latest i5 / Ry5	Latest i3 / Ry3	Latest i5 / Ry5	Various CPUs, Low-cost, low-featured, low-quality
SLA: 3-year on-site, Next Business Day repair					?
Bundle: Windows 10 Pro, Cable lock + Carry bag, Delivery					?

Figure 9: Ensure that the device suits the user requirement

6. Price comparison

SITA did an informal price comparison in April and May 2020 using information from popular retail stores (configurations, product availability, etc.) and up-to-date pricing for Contract 2005. Configurations were kept identical as far as possible (given the limited flexibility of retail stores) to ensure a fair apples-to-apples comparison. The infographic below shows that pricing on transversal contract 2005 is **significantly** lower than that available from retail stores, and the retail offerings do not bundle the standard contract value-adds such as on-site service, carry bag, cable lock, etc. Detail comparison data for this infographic has been included in **Annex A:**

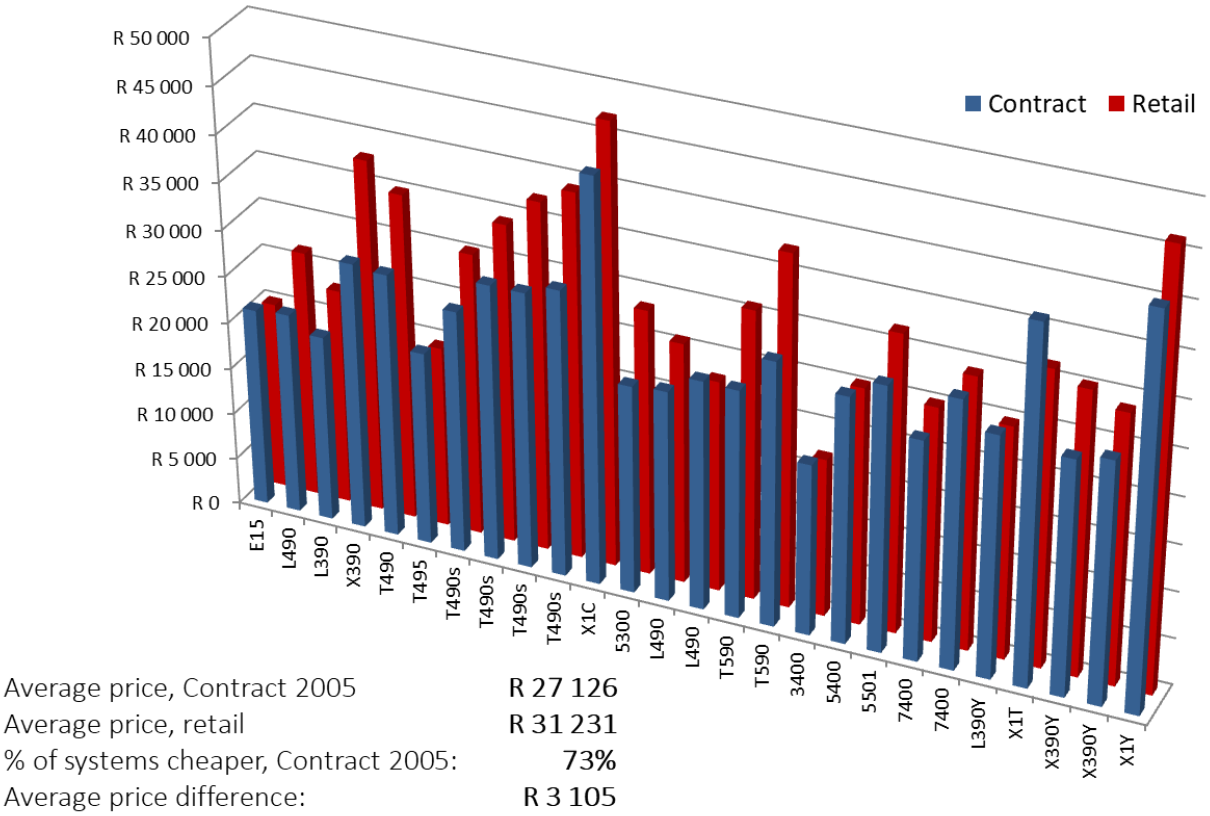

Figure 10: Summary of 2020 price comparison

7. Conclusion

As demonstrated above (and corroborated by independent studies over the history of transversal contracts) **retail prices are not lower** when truly comparing apples to apples. Most of the enterprise solutions required by Government are not even available from retail stores. Apart from that, the enormous **risk** associated with using retail systems in an enterprise environment more than offsets any falsely perceived lower price.

GITOs and CIOs should consider that, just as they wouldn't dream of buying a cheap Chinese car to drive across the Kalahari desert, a consumer product may not be the best system to run **mission-critical Government applications**. Consumer systems cannot handle the workloads that enterprise systems are designed for. When these cheap systems inevitably fail, weeks of productivity is lost, and the systems may even need to be replaced earlier than planned, resulting in **fruitless expenditure**.

Two final important considerations are that (1) the SITA Act does not allow Departments to purchase ICT equipment via alternative channels (a regulation which is regularly referred to by the Auditor General), and (2) that retailers do not support Government's **BEE and SMME mandates**. Therefore the retail channel is not an option for Government wherever a contract exists for that type of equipment (e.g. PCs and Peripherals).

Figure 11: Compromises

Departments must realise that the basic specifications of CPU, RAM and storage do not determine whether systems are the same, but rather more important enterprise requirements such as quality and reliability. Something is always lost when price becomes the sole deciding factor. The natural balance between the main factors (performance, quality and price) means that there is always a compromise, as the diagram shows.

This report has demonstrated that there is no real competition or comparison between transversal contracts and retail stores, and that transversals are the most competitive and cost-effective Government vehicle for procuring ICT goods, enabling Departments to support their Constitutional mandate while enabling service delivery with good-quality, productive systems.

Contact details and additional information

Any questions or queries regarding this report can be directed to the TAS team:

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Table 4: TAS contact details

The latest technical information, specifications, forms, and the latest version of this and other documents can be downloaded from the SITA Product Certification web page:

www.sita.co.za/prodcert.htm

SITA's Technology Certification Process supports the SITA Act in ensuring that ICT goods and services are certified for use by Government. Only solutions that comply with all 3 requirements below are allowed to be deployed in Government.

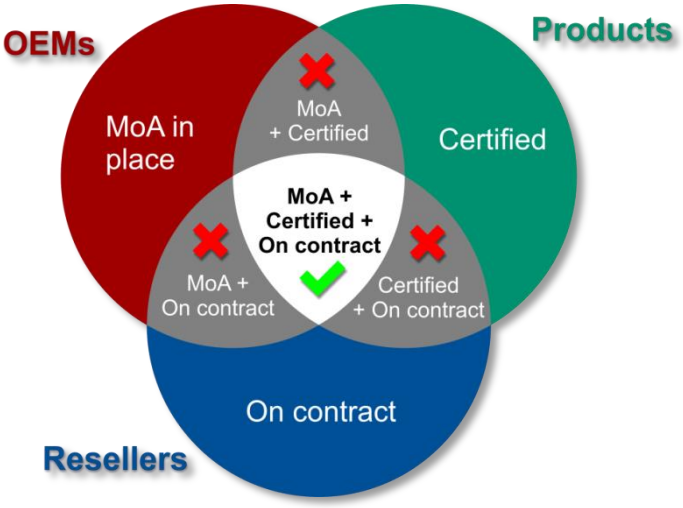

Figure 12: Requirements for ICT procurement

GITOC forum participation

Departments are encouraged to take part in the ongoing specification definition process by participating in the GITOC forum that is tasked with these matters: the **Technical Task Team** is a sub-committee of the IT Service Management standing committee. The TTT meets monthly to discuss and recommend new specifications and other technical and technology matters.

Annex A: Laptop price comparison: Retail vs. Contract

SITA did an informal pricing comparison in April and May 2020 using laptops available on Transversal Contract 2005, and comparing pricing available for similar configurations from several retail outlets. As can be seen from the table, contract pricing is lower in general, but even where higher, it provides a more complete bundle, including value-added components and on-site service. Red percentages indicate the margin by which retail prices are more expensive.

Item	Product	Config	Contract 2005	STOPSHOP.co.za		loot.co.za	
Note2	ThinkPad E14	14" i5 8GB 512GB	R 19 999			R 17 951	90%
Note2	ThinkPad E15	15" i7 8GB 512GB	R 21 320	R 20 139	94%		
Note2	ThinkPad L490	14" i5 8GB 512GB LTE	R 21 633	R 26 499	122%		
Note3	ThinkPad L390	13" i5 8GB 256GB	R 20 023	R 23 199	116%		
Note3	ThinkPad X390	13" i7 8GB 512GB LTE Touch	R 28 716	R 37 849	132%		
Note3	ThinkPad T490	14" i7 8GB 512GB LTE	R 28 355	R 35 029	124%		
Note3	ThinkPad T495	14" Ry5 8GB 256GB	R 20 769			R 19 461	94%
Note3	ThinkPad T490s	14" i5 8GB 512GB LTE	R 26 067	R 30 329	116%	R 32 999	127%
Note3	ThinkPad T490s	14" i7 8GB 512GB	R 29 679	R 34 219	115%		
Note3	ThinkPad T490s	14" i7 8GB 512GB LTE	R 29 679	R 37 349	126%		
Note3	ThinkPad T490s	14" i7 8GB 512GB LTE Touch	R 30 763	R 39 109	127%		
Note3	ThinkPad X1 Carbon	14" i7 16GB 1TB LTE	R 43 284	R 47 099	109%		
Note3	Latitude 5300	13" i5 8GB 256GB	R 22 334			R 28 457	127%
Note4	ThinkPad L490	14" i5 8GB 512GB	R 22 628	R 25 799	114%		
Note4	ThinkPad L490	14" i7 8GB 512GB LTE	R 24 583	R 22 629	92%		
Note4	ThinkPad T590	15" i5 8GB 512GB	R 24 474			R 30 935	126%
Note4	ThinkPad T590	17" i5 8GB 512GB LTE	R 28 327	R 37 599	133%		
Note4	Latitude 3400	14" i5 8GB 256GB	R 18 380			R 16 950	92%
Note4	Latitude 5400	14" i7 8GB 256GB	R 26 400			R 25 361	96%
Note4	Latitude 5501	14" i7 16GB 512GB LTE	R 28 396	R 31 839	112%	R 25 361	89%
Note4	Latitude 7400	14" i7 8GB 256GB	R 23 603	R 25 069	106%	R 23 764	101%
Note4	Latitude 7400	14" i7 8GB 512GB	R 28 708	R 29 129	101%	R 27 762	97%
Note_Tab1	ThinkPad L390 Yoga	13" i5 8GB 512GB	R 25 903	R 24 839	96%		
Note_Tab1	ThinkPad X1 Tablet	13" i5 8GB 256GB LTE	R 38 176	R 31 579	83%		
Note_Tab1	ThinkPad X390 Yoga	13" i5 8GB 512GB LTE	R 25 177	R 30 329	120%		
Note_Tab1	ThinkPad X390 Yoga	13" i7 8GB 512GB LTE	R 25 958	R 28 829	111%		
Note_Tab1	ThinkPad X1 Yoga	14" i7 16GB 512GB LTE	R 41 932	R 46 379	111%		

Table 5: Detail price comparison, retail vs. contract

Notes:

- Comparative pricing was only received from 2 OEMs (Dell and Lenovo) by the time the report was finalised.
- An exchange rate of R18.50 to the US$ was used for contract pricing, adjusted where necessary.
- The retail prices do not include mandatory contract items such as a 3-year on-site SLA, good-quality carry bag or cable lock. Most stores offer delivery for an extra fee, but installation or other services are not available.
- The business-class products used in the comparison were not available from most retail stores, including Takealot, Incredible Connection and Game, and therefore these stores do not appear in the table. Game's focus is purely on the lowest-price home laptops, while on-line stores have a range of premium gaming and prosumer laptops, with prices up to R80 000.

Annex B: Device and product types – Retail vs. Enterprise

This Annex compares the product offerings available from consumer-focussed and enterprise-focussed suppliers.

	Retail store	Enterprise reseller
PCs and Laptops	Consumer- or gamer-focussed: lowest price or multimedia features for gaming or social networking; either very high-end or very low-end, consumer OS, configuration is fixed. 	Enterprise-focussed: TCO, compatibility, manageability. Professional OS, configuration can be specified by customer. Full support for enterprise requirements such as management, security and stability. 
Printers	Low-end, cheap printers for home printing (photos, school projects, etc.). Typically small printers with very expensive ink. "Disposable" printers. 	Wide range of enterprise printers with security, manageability, compatibility and low running costs. Long lifecycles with reliable operation over the product lifespan. 
Scanners	Photo and low-end image scanners. Scan volumes do not exceed a few scans per day on average. Focussed on home and personal use. 	Entry-level to high-end document scanners for enterprise content management applications. Scan volumes can range from hundreds or thousands of pages per day to millions of pages per week. 
Servers and storage	Low-end, home-focussed systems, sharing of media files. Desktop form factor. 	Enterprise-focussed systems for mission-critical applications, with extensive manageability, quality, support and compatibility. Rack-mount or blade form factor. 

	Retail store	Enterprise reseller
UPS	Low-end, cheap products focussed on the home market, very small load support: typically only a single PC or other small device. 	High-end enterprise power solutions with guaranteed reliability, system management support, and expandability. Large loads (entire racks of ICT equipment) 
Network equipment	Low-end, unmanaged, limited number of ports. ADSL, wireless networking and media sharing focus. Desktop form factor. 	High-end, enterprise networking with full enterprise system management. TCO and reliability focus. Rack-mount form factor. 
Audiovisual displays	TV set designed for home use with no business features or manageability. These are unable to handle the duty cycles required in a business environment, requiring costly repairs, replacement and reinstallation. 	True enterprise-quality AV monitor with high duty cycles and system management built-in. Products are designed for continuous operation, and will not fail in extreme use cases (e.g. hot and dusty environments). Can be integrated into AV solutions such as video walls. Extensive connectivity ensures a complete and compatible solution. 

Table 6: Different product types available via retail and enterprise channels

High-end gaming and prosumer products

On the topic of the assertion that “retail stores are cheaper”, here is a sample of the most expensive laptops available from the stores in the comparison. Only Game has a cheap laptop as their most expensive device, due to their total low-price focus.

There may be configuration overlap for some of these units with those found on contract (i.e. similar CPU, RAM or storage), but nobody would argue that this means the products are “the same” as on contract!

The important point here is that the products available from retail channels are typically not designed or suited for a business environment such as Government. Just using the CPU, RAM and storage as indicators that the products are the same is misguided.

Store	Product		Price
WOOTWARE	MSI GT76 Titan DT Core i9, 17" UHD, 32GB, 2TB SSD, Nvidia RTX GPU, Win10 Home		R 79 354
STOPSHOP	MSI WT72 6QM Xeon, 17" FHD, 32GB, 256GB SSD + 1TB HDD, Nvidia Quadro GPU, Win10 Pro		R 75 209
takealot.com	ASUS ROG Strix Core i7, 17" FHD, 32GB, 512GB SSD, ATI Radeon GPU		R 62 065
STOPSHOP	Microsoft Surface Pro 4 Core i7, 12" UHD, 16GB, 1TB SSD, Win10 Pro		R 61 419
STOPSHOP	Acer Predator Helios 700 Core i9, 17" FHD, 16GB, 512GB SSD + 2TB HDD, Nvidia RTX GPU, Win10 Home		R 57 669
takealot.com	ASUS Zenbook Pro Duo 15 Core i7, 15" FHD, 16GB, 512GB SSD, Nvidia GPU		R 56 999
loot.co.za	Acer Predator Helios 700 Core i7, 17" FHD, 16GB, 512GB SSD + 2TB HDD, Nvidia RTX GPU, Win10 Home		R 44 103
Incredible Connection	Alienware A51 Core i7, 17" FHD, 16GB, 1TB SSD, Nvidia RTX GPU, Win10 Pro		R 42 999
makro	Lenovo Yoga S940 Core i7, 14" UHD, 16GB, 1TB SSD, Win10 Pro		R 39 399
takealot.com	Acer Predator Helios 500 Core i7, 17" UHD, 16GB, 512GB SSD, Nvidia GTX GPU		R 38 999
takealot.com	MSI Prestige 15 Core i7, 15", 16GB, 1TB SSD, Nvidia GTX GPU		R 33 999
takealot.com	ASUS TUF Gaming 15 Core i7, 15", 8GB, 1TB HDD, Nvidia GTX GPU		R 17 999
game	Dell Inspiron 3580 Core i5, 15" FHD, 8GB, 1TB, Win10 Home, 3yr warranty		R 8 999

Table 7: Some high-end products in retail stores

Annex C: Comparison Between Contract and Retail Laptop

At first glance, systems built with the same or similar CPU, storage and RAM appear to be "the same", in that they should provide a similar level of performance and quality. But appearances can be deceptive, since there are many more factors that determine performance and quality – and, more importantly, TCO.

Green blocks signify better functionality, red blocks worse. It is no accident that the enterprise-class systems outperform the retail products in almost all metrics except for price. In a like-for-like system, OEMs indicate a ~R6000 difference in additional components, product quality and value-adds for enterprise-class over consumer systems.

		
Configuration	Core i5 CPU, 8GB RAM, 240GB SSD Identical basic system configuration – but this is not important in terms of TCO and long-term use	
Storage	240GB SSD	240GB SSD
Display	Low-resolution, glossy coating TN Low definition, best suited to dark environments where reflections do not distract, poor viewing angles	High-resolution, anti-glare IPS High definition, good viewing quality in all environments (specifically office with bright lights), good viewing angles
Physical size and weight	Average: 2.5kg, 2.17dm^3 Relatively large and heavy due to consumer design and non-optimised materials, DVD drive	Excellent: 1.35kg, 1.16dm^3 Best-in-class size and weight for enterprise: almost half the size and weight of the retail system
Mobility and battery life	Mediocre Mobility is not a primary mandate	Good System design and components optimised for mobility
Product focus	Up-front price – short-term Lure the buyer with a "CHEAP!" sticker	TCO – long-term Lower cost with fewer failures over long-term use
Operating system	Windows 10 Home Unmanaged consumer OS, no domain integration or enterprise features.	Windows 10 Pro Managed and domain-integrated, enterprise OS. Allows deferment of updates until tested.
Security	No specific provision Limited built-in security capabilities; cable lock not bundled, TPM, encryption not available	TPM, AD login, Encryption, Fingerprint, Tracking, Cable lock Secure storage of crypto keys, Departmental login, support for encryption, asset tracking built-in, remote wipe, physical cable lock
Data security in case of failure	Data is at the mercy of retail store No guarantee of breach or data loss	Data does not leave office Cannot be lost or compromised
SSA guidelines for data security	No provision for hard drive security Hard drive with data has to be returned to OEM	Keep your drive OEM allows hard drive to remain at client, or securely wiped in line with SSA guidelines
Installed software	No control – OEM marketing Several types of scareware, trialware and ransomware – even spyware	Full control – Gov software image Built by Department, loaded @ factory
Additional optional features	None	Support for SLA upgrades, Backlit keyboard, Biometrics, Docking station, WWAN (LTE)

Certified build quality & reliability	**None** Built from cheapest, low-end parts	**MIL-STD 810G** Tested for ruggedness for day-to-day use
On-site delivery and installation	**User responsibility** User has to fetch the product and install it	**Included in price** Delivered and installed in office by reseller
Support and warranty	**1-year carry-in** No on-site service, user must return to store, typical 6-week turn-around time, no 3-year SLA. Other repairs will be on a time-and-material basis, which is slow, costly and difficult to manage.	**3-year on-site** Guaranteed 8x5, next business day repair SLA.
Standard accessories	**Only charger** All accessories are extra	**Charger, Carry bag, K-lock** No additional standard accessories needed
System management	**None** Cannot be remotely managed	**DMTF DASH** Fully manageable by Dept ICT staff
Anti-theft	**No provision** No support for third-party anti-theft/tracking tools	**Anti-theft support built in** Tracking tools included in firmware (not removable)
Hardware design	**Retail, low duty cycle** Lower-quality components and accessories built to sit on a desk at home for 80% of the time	**Enterprise, high duty cycle** System and accessories designed and built to withstand 3 or more years of harsh daily use
Product life cycle	**3-month cycle** High churn rate of components, including motherboard. No possibility of standardisation	**12-month+ cycle** Stable components selected for long life cycle. Standardisation is easy and manageable
SITA-certified	**No** Retail products do not meet Gov specifications. Not tested or vetted for quality or performance.	**Yes** Meets all Government requirements, fully tested and vetted by SITA Tech Lab, including performance, compatibility and quality tests.
PPPFA support	**None**	**BEE-rated supplier** Full support for empowerment
Recourse in case of product or service failure	**None** If the product or service is not up to standard, Government has no recourse.	**NT and SITA processes** Full recourse including blacklisting of supplier or OEM in case of service failure or contract breach.

Table 8: Features and quality differences: retail vs. enterprise laptop

Annex D: Windows Home vs. Windows Pro

All the core Windows functionality is typically available in all versions. However, for enterprise use there are some critical differences between the Windows versions. The following table is Microsoft's summary of the differences between Windows 10 Home and Professional.

Security features	Home	Pro
Device Encryption	✗	✓
Domain Join and Azure Domain Join	✗	✓
Group Policy Management	✗	✓
BitLocker and Encrypting File System	✗	✓
AppLocker	✗	✓
Device Guard	✗	✓
Business Store	✗	✓
Enterprise Mode IE (EMIE)	✗	✓
Remote Desktop	✗	✓
Client Hyper-V	✗	✓
Direct Access	✗	✓
Microsoft Passport	✓	✓
Enterprise Data Protection	✗	✓
Windows Update for Business	✗	✓
Windows To Go	✗	✓
Management and Deployment	**Home**	**Pro**
Side-loading of line of enterprise apps	✓	✓
Mobile device management	✓	✓
Azure AD Join	✗	✓
Business Store for Windows 10	✗	✓
Delivering Windows as a service	**Home**	**Pro**
Windows Update	✓	✓
Windows Update for Business	✗	✓
Current Branch for Business	✗	✓

Table 9: Windows 10 desktop editions

One of the most important differences between Windows 10 Home and Pro is probably the ability to defer automatic updates until they have been vetted by the enterprise. Given Microsoft's propensity to deliver unstable and poor-quality updates over the last several years (many service packs caused major problems worldwide), this constitutes a significant risk for Government. To highlight this issue, publications such as InfoWorld have published several articles detailing some of the more recent major failures of Windows Update[3].

[3] www.infoworld.com/article/2889295/microsoft-windows/20-epic-microsoft-windows-auto-update-meltdowns.html

Annex E: TCO factors in the Enterprise

Any ICT product designed for an enterprise environment, whether it's a laptop, printer or UPS, has to conform to a set of standards and functionality that is vastly different from those important in a consumer or home environment. None of the following enterprise requirements are adequately addressed by consumer-level systems. Government officials should take note of this when making purchasing decisions, since all of these factors have a major impact on TCO.

- Enterprise security: Intel's Trusted Platform Module (TPM), encryption with a public key infrastructure (PKI), fingerprint and smartcard readers, anti-theft technologies, software suites to integrate into enterprise management databases.
- Enterprise manageability: systems must be able to be remotely provisioned, deployed, managed and updated. Tools and utilities must be included to allow enterprises to manage and secure large numbers of systems.
- Guaranteed compatibility: systems must be certified by OEM, OS and application vendors.
- Stability, quality, reliability and longevity: the system must function in often harsh environments for long periods of time. Product component and build quality must support this requirement. Replacement cycles must be planned and predictable. Enterprise products are typically designed with long lifecycles in mind, whereas consumer systems are designed and tested to last no more than 18 months. Some Government Departments are replacing systems in a 7-year cycle, during which retail systems will break down several times.
- Business continuity: enterprise products must support organisations in keeping their business operational at all times, regardless of hardware or software failures. This includes eliminating the risk of data loss via a secure service channel.
- Lowest possible TCO: with labour costs at a premium, enterprise systems must automate as much as possible to economise on scarce ICT resources. Running costs are also very important, including power and cooling costs, as well as consumables such as toner and ink. Retail products typically do not focus on running costs.
- Economies of scale: Government must be able to plan, procure and roll out systems in large quantities at significant discounts with on-site delivery and installation. Only enterprise-focussed suppliers support this requirement.
- Managed and predictable transitions to new models: retail systems change very often, and without warning. Enterprise products guarantee a lifecycle of at least 12–18 months, and overlap old and new models by a few months, giving enterprises time to transition and integrate the new model into the ICT infrastructure.
- Customisable configurations and volume supply: enterprises want to specify a standard system for suppliers to deliver in large quantities. For example, Departments may want to specify fingerprint readers for some part of the user base. This is typically not possible at retail: you can buy what is available, but not specify any configurations. Also, the same components must be available for periods of several quarters (12–18 months) to allow enterprises to properly plan and roll out the systems. By contrast, retail systems have no model stability: when the product line runs out, the next model will be different.
- Scalability and expandability are prime considerations for enterprises, since this has an impact on TCO and the value that can be derived from a product. Retail systems are typically not expandable at all.
- Choice of operating systems, applications and accessories. Enterprise accessories such as docking options, shared components (batteries, power supplies), internal WWAN support, etc. are important from a TCO perspective.

- Component stability: parts and subsystems must kept identical for the entire life of a product, improving supportability and stability. Enterprises roll out large numbers of PCs using hard drive imaging, making deployment and management easier and cheaper. Predictability in terms of the hardware platform is vital for this to work. No consumer-level system can support this requirement.
- Commonality of components: enterprise systems (specifically laptops) share common interfaces, devices, docking options and other accessories, making the entire environment easier to roll out and manage. Docking options are typically not even available for retail systems.
- Form factor flexibility: enterprises require system form factors that take up as little floor or desk space as possible: most enterprise products are rack-mountable, with a move towards even more dense blade and converged systems. Retail systems typically have a desktop form factor, which does not work in an enterprise rack-mount environment.
- Ruggedised mobile platforms: due to the fact that enterprise systems are sometimes used in more extreme environments outside the office, having ruggedised options available is important. This is even more important for Government entities such as Defence and Police. Several systems on contract are tested and certified to the MIL-STD 810G standard.
- Direct relationships with OEMs allow clients to provide input and feedback into OEM design and QA processes. This enables enterprises to influence future product direction to derive more business value from platforms.
- Stable pricing: pricing is difficult to standardise for retail products, since components and models change continuously. Enterprise products allow for customisation and price stability over long periods.
- Enterprises require on-site delivery, installation and support. On-line or retail stores require the user to carry the product from the store, or otherwise deliver it by courier, and require the user to install and set it up themselves.

Annex F: Value-adds of transversal contracts

- Support for system hard drive imaging: a single standard image provided by a Department can be automatically rolled out over thousands of systems. The image typically has all of a Department's applications, drivers and other software pre-installed, with no trailware or other unwanted software.
- Fully-specified, configured and certified system. Government does not have to add anything to the base price for a working configuration.
- Full support for enterprise system management where appropriate.
- High-quality and durable components covered by a 3-year warranty. For example, power supplies for enterprise products are tested to accept power spikes of up to 300V, while enterprise laptops are built from magnesium alloy instead of plastic.
- Mandatory support for manufacturing and product quality (e.g. ISO 9000), environmental standards (e.g. ISO 14000, ROHS) and SA statutory requirements.
- Green ICT is fully addressed, with energy efficiency and low resource use a mandatory part of the specification.
- Transversal contracts have a "best price" clause, which mandates suppliers to offer the best price available in SA to Government. SITA therefore has a basis to act against suppliers who do not offer the best pricing to Departments.
- Parastatal organisations and other SITA "may" clients such as Eskom have acknowledged that they save money when procuring from Government transversal contracts.
- Since contract products are thoroughly evaluated and tested by TAS, SITA can offer Departments advice on deployment, optimal usage and cost considerations.
- The choice of operating systems available on contract is important for Government, since it enables them to switch to a different platform (e.g. Linux) in future without fear of incompatibilities. Contract systems are therefore less locked into a single OS vendor.

Annex G: Laptop quality comparison

There are significant build quality and design differences between enterprise-class and consumer-class products. The following points compare these differences, based on an article by Andrew Loniak[4], an American technology consultant.

- Metal hinges and reinforcement: the screen hinges feel strong and stiff, with no wobbles. Screen back and laptop sides are aluminium for extra protection.
- Tighter fit and finish, less flex on the case, and a reinforced/aluminium top cover to prevent accidental screen damage.
- Extended warranties and next day on-site service.
- Professional version of the Operating System, with enterprise features not available to a Home version.
- Current, up-to-date hardware that will not be too slow to run new applications over time.
- No "trialware" that bombards the user at boot-up time.
- Advanced features like backlit keyboard, biometric reader, ruggedised design and touch options.
- Matte LCD coating, which prevents glare and reflection. Consumer models typically have very shiny screens, which look good in optimal lighting, but can be difficult to use in bright environments.
- Screen glare and viewing angle: the cheaper the product, the more direct the viewing angle needs to be for a good viewing experience. Enterprise-class laptops usually have anti-glare screens which can be used in typical office lighting conditions without distracting reflections. Better quality LCD panels are usually an upgrade option, e.g. higher resolutions with IPS technology, instead of low-resolution TN panels.
- Higher quality fans: more bearings in the fans allowing faster speeds, longer life & less noise
- Multiple fans: many entry level laptops have a single cooling fan blowing out the bottom, or side. Block that one vent, and you will cause serious damage
- Reinforced standoffs on the mainboard: enterprise-class machines have more pins holding connectors to the mainboard. After a few good tugs on the charger cable, a consumer-quality laptop will need a DC jack repair.
- Repair time is very important to a technician and ultimately to your repair cost. Enterprise-class machines can typically be disassembled in logical order with just a few screws, where Consumer grade laptops typically need to go to a depot to repair due to the complexity of reassembling it correctly.
- Parts availability is something that is rarely considered, but consumer products typically have a one year parts availability before the model is retired, where enterprise models are typically three years, coinciding with your three-year warranty
- Consumer-class laptops typically have low end processors, and non-upgradable RAM or limited options preventing you from installing add on cards. When purchasing an enterprise machine, you are usually presented with many options to customize to your needs. You can add RAM at the build time to save money as well. Some other considerations to think about when selecting a desktop:
- Enterprise-class laptops typically have dual-monitor capability where consumer models will need a better video card
- Consumer laptops are physically lighter, using more aluminium and less steel and copper. Copper is used to dissipate heat, and aluminium is very ineffective at dissipating heat, but is much cheaper.
- To drive prices down, OEMs allow trialware and even spyware to be installed, such as 60 day antivirus trials.

[4] www.linkedin.com/pulse/never-buy-299-laptop-andrew-w-loniak

- Enterprise or business-class laptops often have fast-charge capability, as well as support for multiple, replaceable or alternative-size batteries. In some cases additional batteries can be inserted into media bays for extended battery life.
- Consumer laptops have a product update cycle of 3–6 weeks, while enterprise laptops remain stable for 15–18 months. Following the retail cycle adds unacceptable overhead on administration and management, increasing TCO significantly.
- Many enterprise-class laptops are MIL-STD certified, which means they are tested to a high level of harsh-environment protection and protection against shock. This includes drop-proofing, dust- and liquid-proofing, and tolerance of extreme temperature variations. These tests add significant cost to the product development process, but have real value in terms of protecting the client's investment and data against day-to-day rough handling and mishaps.

Annex H: Shortcomings of retail products

Many risks and issues associated with retail products have been covered elsewhere in the document, but the following is a comprehensive list of typical shortcomings that will argue against Government purchasing retail products.

- Most retail systems do not meet the minimum requirements of transversal contracts. This includes service options, certification and compatibility, and even configuration in some cases. Even high-end products from well-known brands are unable to meet the specifications. This shows the difference between consumer-focussed and enterprise-focussed products.
- No extended or on-site warranty included in price: users have to take a failed unit in, stand in the queue at the store, and wait up to 6 weeks for repair. This has a cost impact, since Departments will have to pay time and material to maintain the system during its lifecycle. To make matters worse, retailers often charge extra for "DoA insurance" so that users are covered if a system fails out of the box. This is completely unacceptable for Government, where DoA (dead on arrival) systems are replaced under warranty.
- Lower-quality components and build, designed for short replacement cycle and lowest possible price. Components built into contract systems are of higher quality, since they need to be bundled with a 3-year warranty. Annex G: compares specific build quality factors in favour of enterprise-class products.
- Low prices are often only available for a very limited time, and for limited volumes. Specials are often advertised for a few days only, "while stocks last". No enterprise can effectively take advantage of such pricing.
- Limited OS or application certification, meaning that compatibility and quality is not guaranteed. Consumer systems are typically only certified for home operating systems, meaning they will not function properly in an enterprise environment.
- Short replacement lifecycles: products are replaced very quickly, while enterprises need to standardise to ensure that large numbers of systems can be operated and supported in a cost-effective way. The next model of a retail system looks and works differently, and uses different components and drivers.
- Limited OS options:
  - Downgrade rights: when an unsuitable new version of the standard OS is released (e.g. Windows 8, which was not accepted by industry worldwide), commercial PCs allow you to downgrade to the previous version (Windows 7). By contrast, a consumer OS cannot legally be downgraded. With retail PCs, Government would have been forced to use Windows 8 despite its shortcomings.
  - Cheap, low-end systems usually come with an edition of Windows designed for the home, while Government requires enterprise or professional versions of Windows. Windows Home cannot log into an enterprise domain, hence cannot be integrated within enterprise or Government network environments. There is also no support for system management or hard drive encryption. Annex D: provides a detailed comparison between Windows editions.
  - Price difference between Home and Pro OS: to licence an enterprise-class OS for a retail PC, you have to buy an additional Windows Pro licence at around R 2 000. Therefore, any retail PC's price needs to be increased by R2500 in order to do a fair comparison just for the OS. However, the retail product is typically not supported with a Pro OS, so this is not possible to do.
  - No Linux option is available on consumer-class PCs, while enterprise-class PCs give Government a choice.
- Consumer design, focussed on home use, entertainment and games: low-contrast glossy screens, trialware, demoware, ransomware installed by default.

- No enterprise focus:
  - Not geared for bulk sales/shipments, but for one-off retail sales. Stores cannot image PCs on customer demand. What is loaded at the factory is all that is available to clients.
  - Certification, stability, build quality are not addressed.
  - Information security is not addressed: government service providers have security-cleared personnel. No guarantee of data security can be given by a retail store, especially if the unit is taken off site for repairs over an extended period.
  - No system management capability or hardware security components (TPM).
  - No enterprise-level accessories such as docking options, interchangeable accessories, internal 3G cards.
  - No ruggedised models available (several laptops on contract are MIL-STD certified).
  - No high-end systems (e.g. engineering workstations) with ISV certification.
  - Cannot cater for large volume requirements such as special builds or corporate branding.
- Often the same model component is not available as on contract: retail has cheaper, lower-performance CPUs, especially out-of-date or very low-end parts, or parts that do not support system management.
  - Retail PCs often don't include monitors in the base price, which makes the system look artificially cheap. This unscrupulous advertising misleads naïve buyers.
  - System chipsets are consumer- or media-focussed with no support for system management (DMTF DASH) or embedded security (Trusted Platform Module).
  - Parts can have downgraded specifications (e.g. slower RAM or storage) to offer the lowest possible price.
- Most types of devices and classes of equipment required by Government are not offered by retail stores.

Annex I: Supplier channels – Retail vs. Enterprise

This Annex compares the business models of consumer-focussed and enterprise-focussed suppliers.

Target market and focus

	Retail store	Corporate reseller
	 	 
Customer	Consumers, families, gamers, casual and impulse buyers	Enterprise sector: Government and corporates, mission-critical business requirements
Pricing vs. cost	Lowest possible price, special-driven, dumping of older products	TCO focus: volume sales and lowest long-term costs
System design	Configuration and features, product appearance	Compatibility, quality, stability
Product lifespan and replacement cycles	Short lifespan (1–2 years), very short model change cycle (typically 3–6 months)	Long lifespan (Government systems run for 5 years or more), models available for 12–24 months
Primary sales drivers	Entertainment, games, social networking, home use	Enterprise applications and systems, security, reliability, quality
Business focus	Sales and consumer-focussed	Government- or enterprise-focussed: staff security clearances, country-wide support footprint, dedicated sales staff, on-staff support, product certifications
Orientation	Immediate sales, no integration or customer consultation	Solution-focussed, integration into customer business, with training as part of solution
Infrastructure	Storefront only, no support infrastructure	On-site customer representatives and distributed support infrastructure

Table 10: Comparing the focus of retail and enterprise channels

Business model

	Retail store	Enterprise reseller
Pricing	Buy large volumes, sell quickly before new models arrive. Focus on up-front purchase price, not long-term costs. Products are often cross-subsidised via rentals or connectivity deals.	Cost and customer focus determines TCO-balanced product line. Focus on long-term costs, not up-front purchase price.
Product introduction	Short lifecycles, dump old products at low prices	Managed, predictable, long lifecycles
Marketing	High-visibility retail	No or little visibility to consumers
Price comparison	Comparison impossible between products from different stores due to custom builds and special deals with OEMs.	Price comparison is simple due to standardised configurations.

	Retail store	Enterprise reseller
Staff	Low-end, high-turnover salespeople to man store counters. Very little product knowledge.	High-end, long-term staff with good knowledge of client environment, product capabilities, integration possibilities, etc. Extensive knowledge and training
Infrastructure	Storefront operation with outsourced service and support. Client brings faulty equipment in for repair. No on-site support.	Extensive footprint (often countrywide) with trained staff in key locations. Sends technicians to client's office to repair faulty equipment.
Support type	Carry-in, no SLA	On-site, guaranteed SLA
Service offering	Geared for retail-level support with no trained staff on-board; service is available only when customers bring product to the store.	Geared to provide on-site support for large numbers of systems at large organisations such as Government or enterprises. Service is provided at the customer site, usually with a specific turn-around time.
Security	No regard for product or data security.	Fully cognisant of and geared for Government security needs. Security-cleared staff are available. Security processes in place.
Product expertise	Low: sales are incentive-based. Customer has to fix problems.	High: sales are solution-based, supplier is mandated by contract to fix any problems.
OEM relationships	Focussed on low-price buying, incentives from OEMs preclude best solution for customer. No direct OEM/client relationship.	Certification programme for staff to enable quality OEM solutions for Government. Direct relationship between OEM and client. SITA MoA requires service delivery and quality at OEM level.

Table 11: Comparing the business model of retail and enterprise channels

Devices and product types offered

The retail and enterprise channel offer vastly different types of products because of the vastly differing requirements of their target markets. **Annex B:** compares the various types of products available from the two channels and details the main differences.

A major difference between the two classes of product is that **retail products will usually be cheaper**. However, the difference in quality and functionality is apparent when the solutions are directly compared, as this report does. More importantly, cost-effectiveness (TCO) and solution quality will be much better for the enterprise product.

Figure 13: PCs and laptops for home and gaming (left) vs. enterprise (right)

Enterprise vs. retail product lines

Government officials without a technical background are often under the impression that any product that can be purchased for the home can be deployed in an office environment as well. Unfortunately nothing could be further from the truth, since consumer-oriented products differ in design and performance from enterprise-oriented products. This is why most computer OEMs have several distinct lines of products that overlap in the core computing components (CPUs, RAM, storage), but differ in most other respects, including support for enterprise features such as stability and security. Retail products usually lack any functionality that assist enterprises in managing TCO.

The table below lists the consumer and retail brands from a few well-known PC OEMs. Enterprise brands will typically not be available from retail stores.

OEM	Retail brands	Enterprise brands
Acer	Aspire, Swift	Veriton, TravelMate, Swift Pro
Apple	iMac, MacBook	Mac Pro, MacBook Pro
Dell	XPS, Inspiron, Vostro, Alienware	Optiplex, Latitude, Precision
Dynabook	Satellite, Qosmio	Tecra, Portegé
Fujitsu	-	Esprimo, LifeBook, Celsius
HP	Pavilion, Presario	ProDesk, ProBook, EliteBook, ZBook, Z Workstation
Lenovo	IdeaCentre, IdeaPad	ThinkCentre, ThinkPad, ThinkStation

Table 12: Retail vs. enterprise product brands

When SITA investigated the availability of the above brands and product lines it was found that retail stores (e.g. Game, Makro, Incredible Connection and on-line stores such as Takealot, 1stop.co.za, Loot.co.za, etc.) focus primarily or exclusively on consumer instead of enterprise product lines. Therefore many of the products available on contract cannot be purchased from retail stores.

Conclusion

Given the lack of focus by retail stores on cost-effectiveness and service, and the products' lack of enterprise capabilities, it would be inappropriate for Government to procure consumer-focussed ICT products.

The key point is that consumer-focussed product lines are **not appropriate** for enterprise and Government use due to inherent deficiencies in design and differences in the target market.

Annex J: Abbreviations, Terms and Definitions

Abbreviations

AD	Active Directory, Microsoft's enterprise domain directory service
BEE	Black Economic Empowerment
CPU	Central Processing Unit
DoA	Dead on arrival
DASH	Desktop and mobile Architecture for System Hardware
DMTF	Distributed Management Task Fore
DPSA	Department of Public Service and Administration
GB	Gigabyte
GITOC	Government IT Officers Council
HDD	Hard disk drive (rotating magnetic media)
ICT	Information and Communications Technology
ISO	International Organization for Standardisation
ISV	Independent Software Vendor
IT	Information Technology
LAN	Local Area Network
Linux	A free/open source operating system
MIL-STD	US DoD military specifications for ruggedness. Current version is MIL-STD 810G.
MIOS	Minimum Interoperability Standards
MISS	Minimum Information Security Standards
MoA	Memorandum of Agreement between SITA and OEMs to ensure minimum levels of quality, service and empowerment of local industry.
NT	National Treasury
OEM	Original equipment manufacturer
OS	Operating system
PC	Personal Computer, including desktop and mobile systems
PFMA	Public Finance Management Act
PPPFA	Preferential Procurement Policy Framework Act
QA	Quality Assurance
RAM	Random Access Memory
ROHS	Reduction of Hazardous Substances
ROI	Return on Investment
RSA	Republic of South Africa
SABS	South African Bureau of Standards
SITA	State IT Agency
SLA	Service Level Agreement
SSA	State Security Agency
SSD	Solid-state disk (flash-based media)
TAS	Technology Advisory Services

TCO	Total Cost of Ownership
TCP	Technology Certification Process
TPM	Trusted Platform Module
TTT	Technical Task Team, a sub-committee of the GITOC SCProc.
UPS	Uninterruptable power supply
USB	Universal Serial Bus
WAN	Wide Area Network
WWAN	Wireless WAN (e.g. 3G, LTE)

Terms and Definitions

Term	Definition
Add-on	Component or product that complement or increase the capability of the offered product.
Channel partners	All enterprises that operate in the market as small and medium sized enterprises. An example of a channel partner is a value-added supplier that provides industry-specific software solutions and services.
Distributor	Official channel warehousing and distribution, logistics partner appointed by the brand owner.
Installation charge	The price charged by the OEM's partner to install the product in the client environment. This includes unpacking, connecting cables, power-up and user acceptance. May be required as part of the base solution price, depending on solution category or end-user requirement.
Integrator	A skilled and experienced supplier who is able to integrate the new solution into existing infrastructure or make the solution work with other solutions.
Required	What the Client needs as a complete, working solution. Due to the transversal nature of the technical specification, detailed requirements cannot be addressed fully, but must be defined based on end-user requirements on a per-project basis.
Supplier	Final value-added step in the channel before the end user.
TCO	Total Cost of Ownership: all costs associated with an ICT solution, including capital, labour, services, running costs, etc. The total cost of using and maintaining an ICT investment over time.
Technical support	A technical service rendered for out-of-warranty work, or work related to, but not covered by, the services specified as included with offered products.
Transversal Contract	A term or period contract established for more than one Government department or public body, with one or more approved suppliers for the supply of information technology goods or services. The purpose of a transversal Contract generally can be stated as addressing 80–90% of Government requirements, reducing the need for *ad hoc* tenders. Transversal Contracts exclude niche or special requirements by definition, and there will consequently always be a need for some *ad hoc* Contracts.