

Coherent Policy, Planning, and Performance for Delivering the SDGs



Posted by David Fellows [\[1\]](#)

This is an extraordinarily important time for coherent policy, planning, and performance – the “3 Ps” – for delivering the SDGs and other core public policy objectives.

The SDGs present an extensive range of essential service improvements that are applicable across the world. The threat posed by climate change has become a major international issue with immensely ambitious remedial targets and huge spending requirements. Governments are also under pressure to introduce gender responsive budgeting and digitalize their public finances, reforms that offer huge benefits but also challenges and costs in the short to medium-term. At the same time, the

Covid-19 pandemic has devastated many economies and produced huge fiscal burdens, increasing the challenge of delivering the SDGs and better environmental outcomes.

A coherent delivery framework

It is important that governments take decisions within a strategic framework that represents an appropriate timeframe and deals clearly with policy goals, service responses, resources deployed, and outcomes achieved. The various elements of this framework include:

1. A vision having a 10-year perspective expressed in terms of outcomes.
2. Objectives set with a 3-5 year delivery time frame, consistent with achieving the vision.
3. Delivery targets for each of the next 3-5 years in terms of service outputs relevant to the performance outcomes.
4. 3-5 year budgets for agencies or programs that reflect the delivery outcomes and performance targets that each budget represents.
5. Annual accounts that set out executive responsibilities, annual performance outcome and delivery targets and the actual performance achieved.
6. Training and recruitment plans that enable public agencies to operate the systems and deliver the services that have been approved.

Delivering change

Successful reform is an elusive concept. Any initiative worth

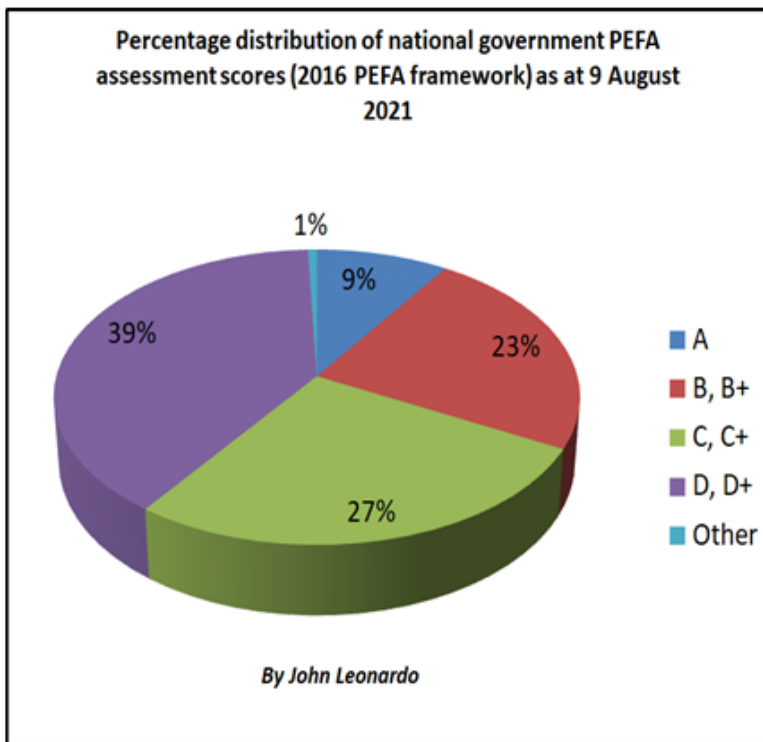
doing must have a benefits realisation plan specifying the steps necessary to ensure that progress is being made and that the end results are achieved.

Services and changes to service provision should be protected by risk management strategies that seek to mitigate internal or external events and shocks that may otherwise hamper delivery or destroy valuable assets.

Review and accountability

The various elements of the framework must be consistent with each other. When major new commitments are proposed, or it becomes obvious that major targets are no longer achievable then a review of the framework should be undertaken. In addition, there should be an annual review of the framework as part of the annual budget preparation process, perhaps as part of a wider spending review. Policies, plans, performance, and the results of review processes should be made public. There is no aspect of the planning and delivery process that cannot benefit from public scrutiny and comment. It is the responsibility of all public institutions in a democratic country to make themselves open and responsive to such a dialogue.

The PFM challenge for developing countries



A = High level of performance that meets international practice

B = Sound performance in line with many elements of good international practice

C = Basic level of performance

D = Less than basic level of performance or insufficient information to score

The chart relates to 58 countries: 52 developing countries and 6 countries in transition

The relatively poor condition of PFM in developing countries shown in the chart suggests the difficulties that developing countries face in planning, managing, and maintaining their existing budget systems. The SDGs and other global pressures to increase spending represent additional challenges for PFM systems to face. Multilateral decisions on the SDGs and climate change must therefore take account of the consequences for developing nations given the likely dependence of successful outcomes on their cooperation.

Conclusion

The immense pressures on governments worldwide to fulfil the global obligations and pressures described above often require concerted action. If governments are to succeed without making over-extended commitments, wasting time and money on impractical solutions, they must make decisions within the rigours of a fully operational policy, planning, and performance framework. Multilateral agreements, economic,

social and technological considerations will all feed into framework construction but the integrity of the framework is key.

Framework development will inevitably present hard choices but that is a strength of the process. It should also provide a coherent basis for democratic accountability if, as a result, drastic life changes are required, freedoms are curtailed, and personal costs are increased.

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**Levelling-up opportunity for
future generations**

(addressing four decades of institutional discrimination)



Posted by David Fellows

ABSTRACT This paper updates an earlier paper ‘Levelling-up through economic growth (a business strategy for the regions)’ published in April this year that examined the nature of the Prime Minister’s levelling-up commitment. This paper suggests that for the past four decades most UK regions have experienced deliberate and destructive economic neglect of the regions at the hands of successive Governments. This has provided the fiscal and organisational space for colossal public sector investment in London, the South East and East of England, the physical and spiritual home of the political, media, financial and academic elite.

The paper argues that this reprehensible situation should be addressed through a process of regionally-based business-centred development grounded in a clearly defined UK growth model derived from innovation and growth theory. The paper exemplifies a series of policies that could be deployed to redress the current situation arguing that Government vision and leadership are essential to success. It notes that

arguments are already being mounted in favour of maintaining the status quo.

1. Introduction

In his speech to the Conservative Party conference last year the PM affirmed his intention 'to spread opportunity more widely and fairly' and this was reiterated in the Conservative manifesto that referred to 'levelling-up every part of the UK, investing in our great towns and cities, as well as rural and coastal areas'.

Since the general election the PM has repeatedly acknowledged his commitment to levelling-up the regions with particular reference to Brexit and Covid-19. Under the heading 'Levelling up' the March 2020 Budget asserts the need to 'raise productivity and growth in all nations and regions for everyone, addressing disparities in economic and social outcomes'. The Integrated Review prioritises 'levelling up opportunity and doing more to share the benefits of economic growth across the UK', so too the white paper 'Build Back Better: our plan for growth'. The freeport bidding process also references levelling-up although it is not specifically targeted at areas outside London and the South East.

This is a hugely challenging time politically and economically, importantly, it is also a time of cultural change when values are being challenged. It is a time when an inclusive vision for the regions could be seriously addressed. If levelling-up is to become a reality it has to be more than a tag applied to any initiative applicable to the regions. A properly articulated strategy is urgently required for

consultation or the moment will have past.

This short paper examines the traditional bias against public sector investment in the regions, rehearses the case for levelling-up and suggests some of the key features required in any serious programme of reform.

2. The challenge of levelling-up

Revisiting an established settlement will always pose severe difficulties in the face of opposition from those who may regard themselves as being on the losing side and it would be delusional to assume that some will not always see themselves in this light whatever the circumstances. It is important therefore to be clear about the purpose, viability and the fairness of any new settlement. A process of consultation would inform public views on these issues, help refine Government vision and improve the means of delivery.

It is worth considering the concept of levelling-up in terms of current socio-economic challenges facing the country and the regions: the narrowing of employment opportunities in the regions that often fail to fit the skill sets, interests and monetary ambitions of regional communities compared to London and the South East; the consequent exodus of talent from the regions leaving behind increasingly vulnerable communities; and the resulting cycle of regional economic decline making public and private investment an increasingly improbable option.

As UK manufacturing halved in the late twentieth and early

twenty first centuries (GVA) the UK's strong economic performance relative to other European countries lay with the financial services industry located mainly in London and the South East (Gudgin & Coutts 2015[1]). In terms of the current distribution of national prosperity, a recent [House of Commons briefing paper\[2\]](#) presents the GDP per head for the devolved administrations and English regions. The astonishing fact emerges that London's value is £54,700; the South East £34,100; and the remainder are all below the national average, mainly in the range £30,100 to £25,900 with the exception of the North East £23,600 & Wales £23,900. It is a crude but interesting comparison.

Apart from the extremely wealthy, London too presents immense problems for many of its inhabitants. The housing crisis is borne of a concentration of employment driving intense demand for accommodation compounded by the shortage of viable sites, planning system failings and political inertia. It is also worth considering the cost and risks of continuing to develop the already congested and expensive London infrastructure.

The City, media presence, plethora of major cultural venues, senior law courts, a host of vastly resourced academic institutions, Whitehall and Parliament together constitute a vast centralised and powerful lobby for the status quo. Demands for improvements in quality of life for ordinary people find their way into the margins of political agendas but the real answer requires a full scale rebalancing of economic and social realities within the country.

In his thought-provoking paper '[Brexit and the British growth model](#)' [3] Christopher Bickerton traces the breakdown of the British socio-economic compact and asserts the need for a new social settlement in Britain. The current Government could be

seen to adopt a similar view.

The March 2021 budget makes reference to levelling-up when it itemises infrastructure spending of £650bn up to 2024-5 for roads, railways, communications, schools, hospitals and power networks across the UK. Other recent announcements suggest further use of existing grant funding mechanisms. A close-ended capital expenditure commitment could suit Treasury spending controls but a clear diagnosis and well-articulated recovery path is surely needed before scarce resources are deployed in a rush to limit the analysis and identify the feasible.

Levelling-up may be an urgent project but this does not mean that the manner of its creation is unimportant, quite the opposite.

3. The aggressive discrimination of previous Governments

In this section the charge of regional neglect is explored in greater detail by reference to a set of papers produced by the Onward group composed of Conservative MPs and centre-right thinkers who are seeking to inform the development of the Prime Minister's levelling-up agenda.

The Onward papers form a hugely creditable piece of work that illuminates the way in which governments of all stripes have deliberately deployed vast national resources to energise the economy and academic life of London and surrounding areas

entailing the negation of the life chances for a majority of the population in outlying regions. The papers clearly identify institutional discrimination within Governments, the civil service and amongst the great and good who have occupied the bodies responsible for franking the decisions that have guided the country's progress. Extracts from this work are set out below.

The London preference[\[4\]](#) London is the only English region to consistently receive higher per capita spending across all of the growth-enhancing categories of: transport (nearly three times the average for the rest of England); research and development (nearly twice the national average); affordable housing (five times the national average); culture (five times the national average).

In 2013 the National Audit Office reported a tendency to prioritise London even at the expense of projects with better returns elsewhere in the UK.

The Treasury Green Book that determines the criteria for spending approvals gives higher weighting to areas that are already highly productive, reinforcing their advantage. The discretion allowed in recent times for less productive regions is vague and has not had a significant impact on the distribution of funding approvals. It is also unclear how the dramatic improvement on well-being derived from gaining employment is taken into account by the Green Book process.

Half of UK university funding is devoted to London Universities, Oxford and Cambridge (the repeated area of preference throughout the papers).

Balancing life chances and prosperity[\[5\]](#) In the past twenty years the London economy has grown by 25%, accompanied by a significant Southern shift in population. In contrast, deindustrialisation of the North and Midlands in the late twentieth century led to a relative decline in GDP that has never been reversed. In London 45% of pupils on free school meals progressed to higher education in 2018-19 which exceeded the proportion of pupils not eligible for free schools meals that progress to higher education in eighty local authorities outside London.

In Germany only 2% of the population live in areas where incomes are at least 20% below the national average whereas in the UK 24% of the population live in such areas.

The innovation scandal[\[6\]](#) The UK has the highest interregional productivity gap of the developed world. Outside London 80% of the subregions have a GDP lower than the EU average.

The UK has fewer R&D intensive areas than the OECD average. All the higher subregions are located in London, the South East and the East of England (London, Oxford, Cambridge). The gap between the UK's most and least R&D intensive quartiles is more than twice that of Germany, Italy or Spain. The UK's lagging regions are more dependent on private sector R&D than comparable countries.

Between 2017 and 2020 £264m in grants were awarded to Artificial Intelligence and Data Economy projects of which 79% was awarded to projects in Inner London, East Anglia, Berkshire, Buckinghamshire and Oxford. No other region got more than 2%. The Satellite Application Catapult in Oxfordshire accounts for 26% of this budget alone.

London has received 60% of the funding from the Small Business Research Initiative since 2009. London received 25% of the pandemic small business funding. All this despite just 7.6% of business-funded R&D expenditure being incurred in the London area. London received approximately half the funding (£3.4bn) from the Enterprise Initiative scheme and the Seed Enterprise investment scheme, five times the entire funding for the three regions of the North of England while the South East received an additional £1.36bn.

72% of R&D intensive jobs over the past decade were in London, Oxford and Cambridge (having only 20% of the national population). The increase in employment in R&D is largely confined to this area and it received 61% of tax credits, enjoying a higher proportion of tax credits relative to private sector investment than other parts of the country.

The UK shows an advantage internationally in pure research but others are better at translating R&D into patents. UK funding is more heavily weighted to (pure) research than industrial development compared to the USA and Asia. Only 13% of funding goes to later phase development compared to 45% in the USA. 55% of R&D funding is allocated to UK universities compared to 33% in USA, 43% in Japan and 33% in Asia. The UK's share of patents worldwide is falling. The rate of patent growth in the UK is higher in the less R&D intensive regions⁴. It is interesting to note that, as Andy Haldane mentioned recently, Northumberland University is currently the UK university leader in patent development[\[4\]](#).

International studies find positive correlations between R&D spending and business productivity but this does not apply to the UK unless the treatment of London is excluded from

consideration. Coastal areas in the UK do not tend to have R&D intensive industries.

Inward investment options[\[5\]](#) The UK has traditionally been a major target for foreign investors and is regarded as a relatively easy place to do business. It offers City of London services, effective legal processes, a relatively efficient bureaucracy, a tendency toward lighter regulation, rule of law and an excellent academic infrastructure. Despite the current freeport initiative the UK does not have a formal inward investment incentive package although incentives are offered occasionally. This compares poorly to other G20 countries that provide direct grants, tax incentives (personal and corporate), regulation exemptions and investment promotion agencies.

Singapore offers tax deductions and subsidies for international investment. Japan offers funding to support reshoring. Sweden offers tax relief for international experts. USA encourages inward investment with 250 Foreign Trade Zones and 500 sub-zones offering tax credits, loans and guarantees at state level; federal SME, rural and general purpose agencies offer loans and loan guarantees; there are also federal sector-specific incentives (eg tax credits for semiconductor production). This is a field that is becoming increasingly competitive and the UK's status as a primary location for foreign investors is clearly under threat.

4. Innovation, productivity and growth

Innovation and growth theory has a history stretching back for more than 70 years although it has not yet had a particularly significant impact on UK public policy despite the revolutionary effects of technological change on all forms of business over that period. Nevertheless the levelling up agenda, coupled with the current drive for renewable energy and a reduced carbon footprint provides an opportunity for further consideration.

As major new businesses have emerged in the USA over the past two decades, particularly in the digital technology and bio-engineering sectors, Europe has seen a less revolutionary experience with Germany successfully doubling down on engineering while the UK, having produced a multitude of innovative start-ups, has seen them quickly sold off, often to companies in the USA. In effect, the USA's pro-business culture has been the stand-out innovative winner with hardly a shot being fired by its business rivals.

In her thesis[\[9\]](#) for the Adam Smith Business School of Glasgow University Nasira Bradley reviews the literature and starts to subject innovation and growth theory to rigorous statistical analysis. This raises the prospect of a more consolidated theory of business development and productivity and offers a potentially pivotal contribution to UK Government business development policy in the context of the levelling-up commitment and the UK's post-Covid economic recovery.

General drivers of innovation Bradley tests the various theoretical drivers of innovation for efficacy against business turnover using the EU Community Innovation Survey (based on the OECD Oslo Manual definitions[\[10\]](#)). This leads to some interesting distinctions between primary and secondary drivers and firms of various sizes, maturity and ownership.

Primary drivers related to firm size are identified: (i) small firms gain from skilled human capital and university contact; (ii) medium sized firms gain from the factors in (i) and contact with government research establishments (see comments on Germany below); and (iii) larger firms gain from the factors in (i), from public funding and co-development with suppliers. Skilled labour and university contact prove effective drivers throughout these various business segments. It could be said that they provide the basics of modern business development. R&D investment is identified as a secondary driver.

Technology Gudgin & Coutts [\[11\]](#) contend that R&D spending is essential to the development of science-based sectors including pharmaceuticals, aerospace and electronics and observe that the UK has the OECD's only recorded long-term decline in business R&D as a percentage of GDP.

Jones [\[12\]](#) points to the critical role that government-led innovation investment has had on the development of major technology-based industries in the UK, USA and elsewhere. Mazzacuto [\[13\]](#) reflects on the huge impact of US Government entrepreneurship, particularly the DARPA Programme, in supporting research that brings together multi-agency personnel to research and develop innovative applications that would probably prove discouraging to the more risk averse venture capital market. She notes the tepid approach evidenced by UK Government in this field and advocates a more adventurous spirit if the UK is to gain a footing in new areas offering the prospect of commercial dominance. The recent Government Bill [\[14\]](#) to 'create a high risk, high reward research agency' (ARIA) is intended to 'push boundaries in search of new discoveries' and could be seen as response to this challenge.

Christensen[15] lays emphasis on the insights that founders bring to young innovative businesses, often using existing technologies that the firm rapidly develops once the market provides good use for the innovative offering. This could explain Bradley's finding that R&D is a secondary driver of innovation, placing the entrepreneur as the instigator with R&D investment improving the potential of innovative commercial applications.

Perhaps Christensen offers the more common case whereas innovation based on advanced science should be seen as a special case that applies in some fields on some occasions. Electronics and digital technology are certainly represented in both approaches.

A recent Policy Exchange paper[16] reflects on the Government's intention to bring forward the ARIAL programme. The paper offers a contribution by David Willetts that ends: 'Britain's problem is that we need to do better at turning science into innovation ... to do that we need to be clear about what exactly is the problem we are trying to solve. And I think that is the challenge of promoting the development and application of key technologies.' This could be seen as a call to establish earlier relationships between relevant industries and scientists working in universities and Government institutions engaged in the development of key technologies. Perhaps this should also be viewed in reverse, whereby greater efforts should be made to identify early stage industrial innovations and expose them to relevant emerging technologies.

Research institutes Bradley's review of the literature on German industry suggests that government research institutes provide knowledge transfer and research benefits to medium sized firms that they could not otherwise afford and that

public funding often appears to bridge the gap between the cost of borrowing and the internal rate of return required for viable investment. Industry-wide linkages aid the diffusion of knowledge within Germany.

Agtmael and Bakker's review of innovation[\[17\]](#) in the US and EU also suggests that a great strength of the German (*Fraunhofer*) technology institute system is the way in which it brings together academics and businesses working side by side on a variety of projects. This close working offers opportunities for shared learning and interdisciplinary collaboration that does not trespass on commercial advantage, indeed it may lead to new commercial partnerships.

Independent firms Christensen is a strong advocate of independent firms that are small enough to bring an appropriate cost base and culture required for the development of new products in an emerging marketplace. Mayer[\[18\]](#) supports this claiming that 'the decline of the UK as a major economic power in the 20th century (compared to) the rise of Germany, Japan and the USA (was) associated with the persistence of family block holdings'.

Bradley's work confirms that independence is a major factor in the growth of innovative firms, the longer they remain independent the more innovative they become and the more they grow. Independent here means that the firm remains largely in the hands of its initial owners with external parties holding no more than a 25% stake. The early sale of independent innovative firms is, therefore, detrimental to their transformation into major modern enterprises. Interestingly, Bradley finds that independent innovative firms benefit from lower rates of corporation tax although the tax does not seem

to inhibit the growth of other firms.

Despite the growth benefits of independence, Bradley notes how few UK independent firms have grown into major corporations, having sold out at an early stage of development. This reflects poorly on UK practice where early sale is commonplace.

Larger firms – productivity and regulation Bradley asserts that larger firms have higher productivity than smaller firms, possibly because of the sectors they work in or possibly because of their higher revenues relative to overheads. EU SMEs account for 70% of the workforce but only 60% of production (ECB Bulletin 2013[\[19\]](#)). A recent IMF paper on rising corporate market power[\[20\]](#) offers a caution on this finding suggesting that mergers and acquisitions by dominant firms ultimately contribute to declining business dynamism and economic growth.

The IMF paper concedes that larger firms tend to be more productive initially but as they become hard to compete with, for example, because they entrench their market positions by acquiring other firms, they ‘could become less innovative over time and also discourage their (current and potential) competitors from innovating too’. The IMF, therefore, urges Governments to enforce both merger controls and prohibitions on the abuse of dominant positions. Data portability and interoperability of systems is also becoming important for similar reasons.

Venture capital Bradley finds that both innovative and non-innovative firms benefit from venture capital although this is apparently not the case with independent firms. Agtmael and

Bakker make a potentially telling point that smaller developing firms find that venture capital providers are too risk averse to support this cohort leaving the field to the vagaries of crowd funding, successful entrepreneurs turned business 'angels' or public authorities who have the vision to establish business hubs to promote emerging businesses. The recent closure of many high street banks and, even before that, the gradual elimination of locally made bank lending decisions, has greatly reduced the UK banking system's exposure to SMEs thereby creating funding problems for small independent firms. Bradley agrees with Agtmael and Bakker that venture capitalists may not be comfortable with independent firms, effectively denying them of the means to grow, although UK entrepreneurs may simply prefer to sell rather than develop.

UK Policy development There seems to be a clear and urgent need for Government to construct an evidence-based picture of business development in the UK, identifying policies that both help revitalise the business sector and secure the levelling-up agenda. Such a review would extend across the whole of government, producing a coherent plan that employs initiatives that are effective, specific and affordable rather than broad and unsustainable over the necessary time-scale. The review would include consideration of relationships between innovation and pure research; the seeming lack of fit between investment capital providers and emerging independent innovative firms; the supportive relationships existing between emerging innovative firms, the wider business community and universities; and the more general cultural characteristics of innovative businesses in the UK.

5. The need for a British growth model

Current innovation and growth theory identifies themes that can be incorporated in British business development policy as exemplified in the next section but practices elsewhere may not always be easily incorporated precisely into the UK experience.

The German Fraunhofer Institute system, for instance, may be regarded as a difficult fit with the UK's university sector. Nevertheless, the combination of the London Bioscience Innovation Centre sponsored by the London Development Agency and the Francis Crick Institute sponsored, amongst others, by the Medical Research Council offers a British example. So do the seven High Vale Manufacturing Centres (HVMC) or 'Catapults' offering various specialisms and located in the regions that bring together academic and industry specialists working with businesses to innovative products and processes. UK trade groups, also meet to explore new industrial techniques and emerging problems and such practices could no doubt be extended.

The issues are, therefore, of relevance and ease of engagement (whether, say, with an appropriate university department or HVMC), particularly for the time-poor SME. Is there clarity about what is needed, are potential beneficiaries aware of what is already available, are the right facilities available in the right place, is the system actively inclusive? A report by the ERA Foundation [\[21\]](#) suggests that a review of local industry strategies could give answers to some of these questions. The UK has clearly started at the wrong end of the spectrum, it is now necessary to accept the scale of the task

required to achieve a more satisfactory position.

The German commitment to vocational training presents another point of variance. Agtmael and Bakker reflect on the respect for vocational development in the German manufacturing tradition. They report that postgraduate entrants to industrial environments are included in vocational training programmes and that college and firm work closely together to ensure that employees receive appropriate skill training up to a very high level throughout their careers.

The white paper Skills for Jobs [\[221\]](#) represents a commitment to improve the quality and status of vocational training in the UK. It reads as though the focus is more on training and qualifications than forging a collaboration between employer, college and employee to achieve relevance to the workplace. Can practical skills be properly acquired without emersion in the workplace environment? European working culture tends to value stability of employment and the poaching of employees is discouraged. The white paper offers transferability of employment during training as a key selling point.

The research suggests significance in the readiness of UK business founders to relinquish ownership of their businesses compared to the prevalence of longer term family ownership in Germany. The mutual support between firms within business sectors, albeit not necessarily direct competitors, is another key difference between the two systems. The latter is clearly more feasible in a stable ownership system where trust can be developed over time. Should these differences be accepted or does the UK Government have a role in at least questioning cultural practices and facilitate further consideration of business community behaviour?

The funding of emerging firms presents a challenge. In part, the German institute system helps mitigate the need for development capital. The research suggests that the availability of development capital can be a significant hurdle for emerging British firms. The UK Government has recently established the British Business Bank[\[23\]](#). This is less a bank and more a portal for various private sector business advisors and venture capital providers working within Government guidelines. A bank should learn about its clients and develop its offering accordingly but Government could lack the necessary feedback given the current model. Both Government and client will be limited by how intermediaries choose to execute their roles. This is not a development bank as one might expect, it could be seen simply as a means of disengagement by Government.

The UK's annual university R&D Research and Innovation Programme and defence R&D investment amount to almost £10bn. This dwarfs the current intentions for the ARIA programme of £220m a year. How does the UK shape these larger R&D budgets so that, working in conjunction with the R&D resources of the private sector, it may make the greatest impact on business innovation, productivity and growth? Perhaps there should be a twin track approach, part Government-identified research programme developed in close collaboration with UK businesses and part a willingness to invest behind a business or business sector that is already making demonstrable progress with some form of innovation. Whatever the chosen approaches, the firm must be front and centre not the late-comer for whom the menu choices have been pre-selected.

Every country has its unique culture and institutions necessitating a unique development path. A simple switch from one culture to another is rarely possible and few systems are ideal in themselves. The UK must learn from others but

ultimately it must find its own way of using innovation drivers to achieve growth and prosperity. This must be a collaborative process involving Government, business, specialist research institutions and academia, each element being a loose collection of constituent parts with diverse objectives. The Government's recent white paper *Build Back Better: our plan for growth*[\[24\]](#) is the traditional shopping list, subsequent discussion needs to identify the effective means by which aspiration becomes reality.

The underlying assumption of what follows in this paper is that the necessary approach to levelling-up should be a process of regionally-based business development supported by a raft of Government measures. The consequent economic growth will then support self-sustaining communities that do not require disproportionate amounts of state aid to provide the trappings of physical regeneration that belie the reality of lived experience.

Some serious modifications to UK practices are long overdue and many of them rest in Government hands. Producing the right set of measures across so many fields with so many stakeholders will be no easy matter but there can be little doubt that Government must acknowledge its pivotal responsibilities. Should the Government fail to provide the necessary vision and leadership then there will still be individual successes but the economy will seriously underperform and the levelling-up project will fail.

6. Elements of reform

The proposition set out above suggests that the most effective

way for the Government to approach its commitment to level up the regions would be for it to adopt a programme of long-term public service interventions undertaken in collaboration with the business sector and designed to stimulate regional economic development. It would be formulated with a consistent focus on business innovation leading to productivity improvements and growth. By careful and well informed programme design it is possible that the solution may rest more on insight, collaboration, reallocation of existing funding priorities and long-termism than huge public investment. Some examples are outlined below.

Personal development

One of the critical lessons from Bradley's study is that skilled human capital is one of only two drivers of innovation that are effective across all businesses. The development of skilled human capital starts in many cases with the final two years of schooling followed by a university or technical college education (see below). It is imperative however that the process does not end there. In-service training is essential. Project work can be assigned to achieve both business outcomes and personal development. Formal mentoring by an experienced colleague can provide know-how and provide internal and external contacts. Enlightened managerial oversight towards career path development, progress assessment and personal encouragement can be invaluable.

This process is clearly best suited to continued employment over a lengthy period. Both employee and employer value the learning process that delivers the capacity to recognise opportunities to innovate, leading to improved productivity and growth. Such intuitive leaps are a combination of innate ability and the history of personal development for which the

individual and the firm are equally responsible.

Higher and further education

Universities are also a driver of innovation across all businesses. They provide knowledgeable graduates equipped with key skills, in-service training, joint ventures, guidance relevant to new fields of work and research to extend chosen development pathways. University start-ups, spin-offs and IP development can all facilitate business growth. Innovative businesses need a revolving door to academic expertise and R&D programmes must be structured to encourage this. There are a whole series of relationships here that should be reviewed and probably improved.

Technical colleges must reach out to shape the training experience around the needs of local employers and training input must be life-long. Learning partnerships between college and business offer a vital contribution to the development of workforce skills to a high level. If the UK is to revive its industrial base to any significant extent then this education sector must be revisited, training must be more extensive, links with firms much closer and steps must be taken to develop a more collegiate approach between firms in industries with similar training requirements.

Universities must see themselves as key facilitators of business growth and regional development. Intensive, interdisciplinary working between universities, HVMCs and other national R&D institutions is imperative and university research funding should be skewed to business relevance with priority afforded to regional business linkage. At best, the aim should be to encourage teams working on projects in

similar fields to share experiences and expertise, and to collaborate on business ventures. Where common interests apply, established firms should be encouraged to offer emerging firms partnership working, mentoring, and financial support.

If a genuinely national approach is to be adopted then some new R&D centres must be formed in areas without substantial recent modern business development experience. Experience in South East Asia and USA suggest that this is feasible if there is the intent.

Networking

To-date there has been a tendency to establish business parks and industrial estates to help with infrastructure planning and cost-effective roll-out. Without discounting the development of business parks it is clearly important to focus more specifically on the siting of businesses in similar industries around centres of research and expertise to facilitate technology development and transfer. Locating similar emerging businesses in dedicated business hubs could be highly relevant. Research suggests that benefits could accrue from encouraging collaboration between larger firms and their suppliers.

Benefits could also be derived from experimenting with the development of standing conferences of multidisciplinary sector-specific businesses, HVMCs, universities and other research institutions to exchange knowledge and prepare for future business ventures.

A general theme in this section is that in all respects networking between commercial interests and universities must improve significantly if the UK is to recover ground lost in the many commercial applications of science and technology on which regional recovery most clearly depends. Government clearly has a major role to play in facilitating this transformation.

Ownership and capital culture

If being an independent firm and remaining independent for as long as possible is the key driver of innovative capacity then it is important that firms should be encouraged and enabled to remain independent.

A dual share system allowing initial owners to retain a degree of control while enabling a wider pool of investors to reap financial benefits should find a champion in Government. A properly constituted regional development bank could be granted powers to offer loans, equity investment, loan guarantees or interest support depending on the nature and size of company and proposed investment. An extensive network of technology development centres could help support emerging businesses and reduce their dependence on development capital.

Improved protection from foreign and hostile acquisitions and from the more subtle abuses of dominant market positions are important. Regrettably the foreign takeover provisions contained in the National Security and Investment Bill seem to have been lobbied into retreat.

New thinking on issues in this section should be informed by a

review of the cultural and institutional factors affecting the behaviour of independent firms.

Taxation, loans, guarantees, grants, regulations and inward investment agencies

Enterprise zones should be used to target special business incentives, including (some or all): exemptions from corporation tax for a range of expenses (including extensive R&D credits); shorter capital write-off periods; NI exemptions; reduced corporation tax rates; extended tax payment regimes; loans; loan guarantees and grants. Freeports should be eligible for these benefits as well as customs exemptions although there is a strong case for assigning specific purposes to freeports to enable satisfactory oversight of their activities. The effects of such measures would be monitored and shaped according to effectiveness.

In return for special tax benefits or capital support (as referred to above) the Government may wish to take a shareholding or a golden share preventing sale and relocation without permission. There is a view that such protection dissuades investment nevertheless it would seem a justifiable option in return for state support and commercial advantages.

Regulation of the business sector must be kept under serious review, be responsive to industry advice. Statutory approvals must be avoided where possible, make minimum demands, apply reasonable fee scales, be readily accessible and operate on an efficient basis.

A national foreign direct investment incentive scheme should

be developed with special provisions for enterprise zone and freeports. This should take account of the need to reshore a measure of production to improve national resilience and reduce the carbon footprint, including the agricultural sector. This should be supported by regional foreign investment agencies with strong local connections including board membership. They would seek inward investment interest, prepare incentive packages, facilitate land assembly (with others as necessary) and provide introductions to relevant regional institutions and key personnel.

A programme of reshoring must take account of the need for innovative production processes to accommodate the UK's relatively high cost economy and the possible capital provision required.

Infrastructure

Infrastructure is often discussed in terms of gigantic road, rail, power supply and infrastructure programmes but if the task is to increase business activity in the regions then the specific needs of attracting and retaining business may well involve a mix of infrastructure components facilitating linkages both within and between regions. The design and prioritisation of infrastructure development may look very different depending on the businesses involved.

The impact of Covid-19 on long-term work habits is not yet clear but changes could be quite radical. The infrastructure demands of existing regional businesses and households and the consequences of changes much further afield must be assessed: changed traffic flows could ease road and rail congestion; greater homeworking could change the locations and timing of

power supply requirements and internet bandwidth demands could be affected in many different ways. The impact of changed conditions and possible additional demands of new businesses require consideration across the utilities. More joined up and agile operational responses must be developed to accommodate the possibility of changing requirements.

A similarly responsive approach is also required from public and private sector providers of the social infrastructure consequent on regional economic development.

Government as client

It is essential that UK Government bases its own technology and manufacturing needs on UK businesses wherever possible to support the growth of a vibrant UK business culture, particularly in the regions, through a dependable nucleus of demand for innovative products.

The Government should ensure that all departments appreciate the responsibility they bear for developing and managing its British-first policy as a facet of UK business development. Government departments must be required to ensure familiarity with British suppliers, provide them with a good understanding of relevant operational circumstances and review current offerings with them identifying problematic and beneficial aspects.

All suppliers who offer evidence of good competence should have a reasonable expectation of winning bids at some level that will enable them to gain a better understanding of the Government client and provide the client with the opportunity

of making an operational assessment of the supplier's potential. Tendering processes should not contain expectations of supplier-side drafting that could only reasonably be expected from a seasoned supplier. In part, Government contracting should be seen as contributing to business development where the contractor appears capable of reaching the necessary standard.

The Government procurement policy must embrace start-ups and small companies including those in technical fields. Special effort must be made to reach out to new companies that show real intent, imagination and the capacity to develop. Additionally, Government contracts are not always seen as the most attractive position and failure to connect may constitute a lost opportunity for both parties [\[25\]](#).

Independent supplier surveys should be undertaken to explore tendering and contracting experiences and thorough reviews should be undertaken of the way departments handle suppliers both in the tendering and contracting elements of the relationship. Results of such surveys should be made public.

If it is intended to make Government a more approachable client then it is important to ensure that the rules governing the involvement of civil servants, ministers and advisors are transparent and prevent personal gain. This will not safeguard the system from poor performance by some new entrants to the Government market place. It is unacceptable, however, to minimise that risk simply by shielding client-side actors behind an exclusive club of major names.

Government as entrepreneur

The Government's role as client and facilitator is aligned to numerous innovative fields, such as: healthcare; renewable energy; digital technology and military aircraft [\[26\]](#). Other fields are moving into new phases of innovation of relevance to the UK including agriculture.

US-style multi-agency, business-linked research and development programmes such as DARPA offer major commercial opportunities and are gaining prominence in the UK. The Government has established a number of business focused research programmes, most recently the ARIA initiative. It must be accepted that there will be failures but American experience has also demonstrated success. The key shortcomings of such programmes can include being too focused on academic interests and limited in the choice of institutional partners.

Innovation is not, however, wholly or mainly prompted by research programmes. Recognition should be afforded to the many innovative developments that were based on proven technology used in new ways, then subjected to repeated cycles of product development. In normal circumstances the Government's role as entrepreneur should be alert to the R&D support needs of product development once initial products or services have gained traction rather than attempt to dictate the course of business innovation. Special care should be taken to support the needs of emerging businesses.

Where Government as client is about to embark on a major spending programme that offers product development opportunities or cannot be accommodated by existing UK suppliers then Government must be forward thinking, signal its intentions and lay the groundwork for an appropriate UK business response using the various levers discussed.

A recent review by Kundu, James and Rigley[\[27\]](#) suggests a consensus over the importance of public procurement in promoting innovation and technological development. It cautions, however, that public procurement as an innovation policy tool has only been applied in a few countries and a few contexts. Furthermore, the academic literature on the subject rarely addresses questions of impact. This emphasises the need for Government to evaluate impact and undertake continuous development of the methods used.

Government as employer

Government should devolve whole departments and major divisions of departments to the regions. This is not just a matter of exiling low skill jobs to the regions but of relocating senior management and ministers to improve Government perceptions of regional circumstances and signify the arrival of national rather than London government. In the new digitally-connected world most central decision-taking could be undertaken from regional locations. Some steps are in progress, much more is required.

7. Conclusion & Summary of Recommendations

It seems inexcusable that so much funding has been channeled into the economic and social development of a relatively small proportion of the population living in London, the South East and East of England. This has even led to perceptions by some in these highly prosperous areas that they alone are unreasonably shouldering the burden of the feckless in other

less productive and undeserving regions.

In practice the regions suffer from a high proportion of more limited, less well remunerated job opportunities resulting in unfulfilled lives and communities that are increasingly less vibrant and self-supporting given the continuous loss of talent to London and the South East.

This paper points to recent studies of innovation, productivity and growth that offer direction for the levelling-up agenda. They help identify structural and cultural challenges that must be addressed if successful outcomes are to be achieved.

Universities and technical colleges must be encouraged to forge ever stronger working relationships with local business communities. There must be effective support for emerging, rapidly developing and independent companies. Anti-competitive behaviour of all kinds must be discouraged.

The central message of this paper is that levelling-up must be business-focused to equip regional communities with the skills and resources to lead a more fulfilled lives in increasingly stimulating environments which they individually and collectively develop. To generate the necessary business response that speaks to local potential, support packages must be tailored to local circumstances. As such, they must be created in collaboration local institutions that own the local vision and are held accountable for its execution.

The primary purpose of Government funded R&D in science and technology over the next decade should be UK industrial

development devised and undertaken in a process of collaboration between Government, universities, HMVCs and, where appropriate, new specialist technology institutes. The traditional bias against regionally-based Government funded R&D must be emphatically reversed. This agenda must not be subverted into a campaign for increased funding for pure research or for the benefit of the traditionally preferred institutions.

Beyond R&D, regional location should become a prime requirement for special business incentive schemes, including those targeted at inward investment. Infrastructure improvements both between and within regions are an adjunct to this, not the primary objective.

As client, Government should engage with UK businesses at an early stage when developing its requirements for new products and services. Procurement processes should not be unreasonably exclusive by virtue of their cost and general demands. Government should make particular efforts to include emerging UK businesses and those new to the Government marketplace in its routine procurement activities.

The regional commitment should be emphasised by relocating most of Whitehall to the regions, using digital technology to make Government a modern networked operation.

Government must remain at the heart of this agenda, it cannot simply announce a string of isolated initiatives and walk away. The coherent packaging of measures, the use and development of governance arrangements and the contributions to be made by Government departments will all require the oversight and supportive power of Government at the highest

level if this immense enterprise is to succeed.

8. End Word

Levelling-up the regions is a long overdue vision. It recognises a national obligation to communities that have been left behind. The forthcoming White Paper must contain a long-term, wide-ranging and imaginative plan for levelling-up the regions based on business development. A response of this nature .

The vision requires tremendous energy and commitment in the face of vested interests that will inevitably resist. If it is to be accomplished then the PM must play a key role in ensuring that his commitment remains intact, his vision is fully developed, the Government's framework for action is fit for purpose and that implementation is relentless. It is time to move from slogan to delivery.

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[1]

https://insight.jbs.cam.ac.uk/assets/2015_cbr-report_macro-economic-impact-of-liberal-policies-in-the-uk.pdf

[2]

<https://commonslibrary.parliament.uk/research-briefings/sn06924/>

[3]

<https://policyexchange.org.uk/wp-content/uploads/2018/07/Brexit-and-the-British-Growth-Model.pdf>

[4] [Design-template-Levelling-up-1-1.pdf \(ukonward.com\)](#)

[5] [Measuring-up-for-levelling-up-2.pdf \(ukonward.com\)](#)

[6] [Microsoft Word – Levelling Up Innovation \(7\).docx \(ukonward.com\)](#)

[7] Policy Exchange webinar
<https://policyexchange.org.uk/pxevents/making-a-success-of-levelling-up/>

[8] [Microsoft Word – MG- Onward – Levelling up FDI.docx \(ukonward.com\)](#)

[9] <http://theses.gla.ac.uk/79042/1/2020BradleyPhD.pdf>

[10]

<https://www.oecd-ilibrary.org/docserver/9789264304604-en.pdf?expires=1615479892&id=id&accname=guest&checksum=50316E0BBC9A43B0F84FD7631499EE9F>

[11] Coutts, K. & Gudgin, G. [The Macroeconomic Impact of Liberal Economic Policies in the UK](#), (2015) Centre for Business Research Special Reports *quoting* Congressional Budget Office Background Paper 2005: R&D and Productivity Growth <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/64xx/doc6482/06-17-r-d.pdf>

[12]

<http://speri.dept.shef.ac.uk/wp-content/uploads/2018/11/SPERI-Paper-No.6-The-UKs-Innovation-Deficit-and-How-to-Repair-it-PDF-1131KB.pdf>

[13]

https://demosuk.wpengine.com/files/Entrepreneurial_State_-_web.pdf?1310116014

[14]

<https://www.gov.uk/government/news/bill-introduced-to-create-high-risk-high-reward-research-agency-aria>

[15] The Innovator's Dilemma (Harvard Business Review Press)

[16]

<https://policyexchange.org.uk/wp-content/uploads/Visions-of-Arpa.pdf>

[17] [The Smartest Places on Earth \(Public Affairs – HBG\)](#)

[18] [Prosperity \(Oxford University Press\)](#)

[19]

https://www.ecb.europa.eu/pub/pdf/other/mb201307_focus06.en.pdf

[20]

<file:///C:/Users/fello/Documents/Innov%20&%20Business%20Devel%20in%20UK/Academic%20&%20Think%20Tank%20papers/IMF%20Corp%20Mkt%20Power%20Mar21.pdf>

[21]

<https://www.mta.org.uk/system/files/resource/downloads/Level%20Up%20Industry.pdf>

[22]

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957856/Skills_for_jobs_lifelong_learning_for_opportunity_and_growth_web_version_.pdf

[23] <https://www.british-business-bank.co.uk/>

[24]

<https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth/build-back-better-our-plan-for-growth-html>

[25]

https://rusi.org/sites/default/files/op_202003_the_challenge_of_change_web.pdf

[26]

https://rusi.org/sites/default/files/tempest_programme_final_web_version_0.pdf

[27]

<https://academic.oup.com/spp/article-abstract/47/4/490/5903068?redirectedFrom=fulltext>

African ACAs' digital media progress



Federal Ethics and Anti-Corruption Commission of Ethiopia's very popular 29 March 2021 video (Click to view)

By John Leonardo [1]

We recently reviewed the degree of usage of digital platforms by African anti-corruption agencies (ACAs) in a [blog](#) and supporting [video](#). We also highlighted the opportunities that digital platforms offer African ACAs in pursuing their war on corruption in a [separate blog earlier this year](#). In view of the interest in these topics we are now providing an update on African ACAs' digital media progress in recent months.

1. African ACAs digital platform usage trends

1.1 Website usage

There has been no significant change in the use of websites by African ACAs since January 2021. Details of the use of websites by African ACAs as at mid-May 2021 are presented in Table 1.

Table 1: African ACAs use of websites

ACAs	Number
ACAs with stand-alone websites	27
ACAs with webpages included in government websites	1
ACAs with currently inactive websites	4
ACAs without any web presence	22
Total	54

NB. Nigeria has two recognised ACAs with websites; Uganda has two recognised ACAs but only one has a website while the other uses only social media. One Nigerian ACA and the Ugandan ACA which only uses social media are not included in Table 1 or Table 2 below.

Table 2 provides details of the use of websites by African ACAs equally divided between those with higher 2020 Corruption Perceptions Index (CPI) scores and those with lower scores.

Table 2: African ACAs use of websites by 2020 CPI scores (data as of May 2021)

ACAs	Number	Stand-alone websites	Web page on government site	Website currently inactive	No website
ACAs with higher 2020 CPI scores	27	18	1	2	6
ACAs with lower 2020 CPI scores	27	9	0	2	16
Total	54	27	1	4	22

1.2 Website visit activity

Quarterly data for website visits in the six months ended 31 March 2021 as obtained from similarweb (<https://www.similarweb.com/>) has been annualised and divided by country internet user numbers as at 31 December 2020 published by Internet World Stats (<https://www.internetworldstats.com/stats1.htm>), to provide an indication of ACA website penetration levels.

This shows a very low annualised average website penetration level for all ACAs of 0.32%, a decline of 18.70% from 411,126 in the 2020 December quarter.

The annualised average website penetration level for the 27 higher CPI scoring ACAs in the six months ended 31 March 2021 was 47% greater than the remainder.

Mauritius (5.99%) and Madagascar (1.15%) continued to record favourable overall scores in the six months ended 31 March 2021 following their favourable performance in the 2020 December quarter.

1.3 Social media activity

Social media follower information was analysed for ACAs with Facebook and Twitter pages using the data available in early May 2021, listed below:

Data	Source
Facebook subscribers as at 31 December 2021	https://www.internetworldstats.com/stats1.htm
ACA Facebook followers	ACA Facebook pages
Potential Twitter audience that marketers can reach January 2021	https://wearesocial.com/digital-2021
ACA Twitter followers	ACA Twitter pages

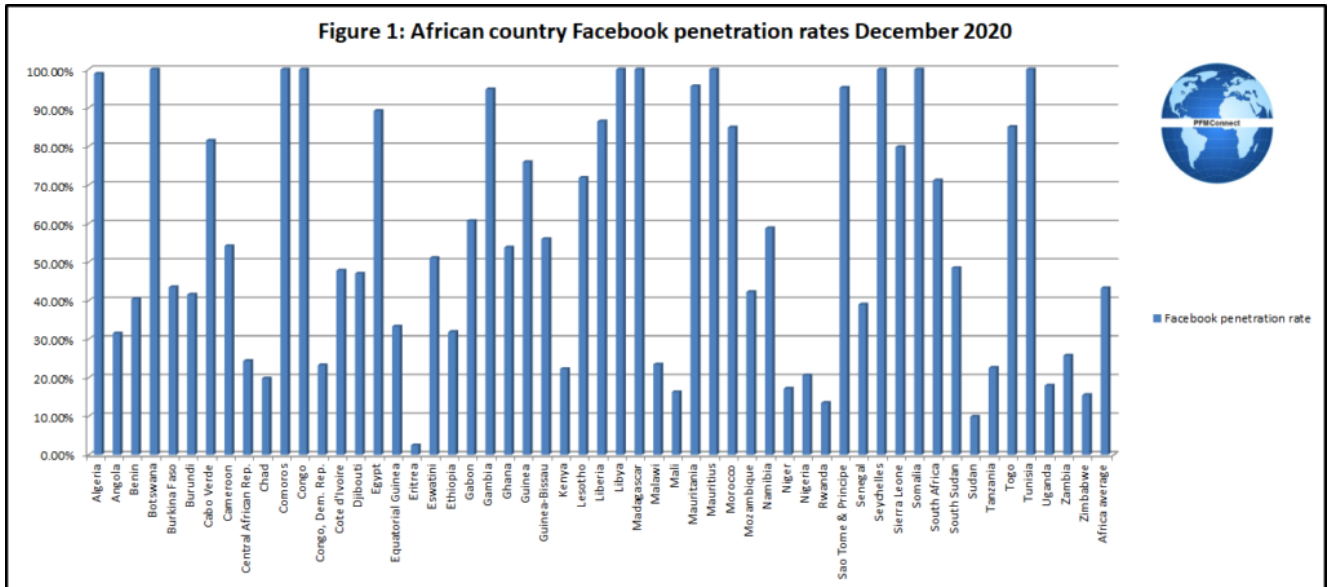
Details of current African ACA social media pages are presented in Table 3. *NB the Facebook and Twitter pages of the two Nigerian and Ugandan ACAs are included in the data presented in Table 3.*

Table 3: African ACA social media pages

ACAs	Facebook pages	Twitter pages
ACAs with stand-alone websites	17	15
ACAs with webpages included in government websites	1	0
ACAs without any website	1	1
Total	19	16

1.3.1 Facebook activity

African country Facebook penetration rates obtained by dividing Facebook subscriber numbers by the number of internet users as at 31 December 2000 are presented in Figure 1.



Currently less than one half of African ACAs have Facebook pages.

Key results

Total Facebook followers for ACAs measured on a country basis increased by 4.09% between mid-January 2021 and early May 2021.

Growth rates in African ACA Facebook follower numbers on a country basis between mid-January 2021 and early May 2021 are presented in Table 4.

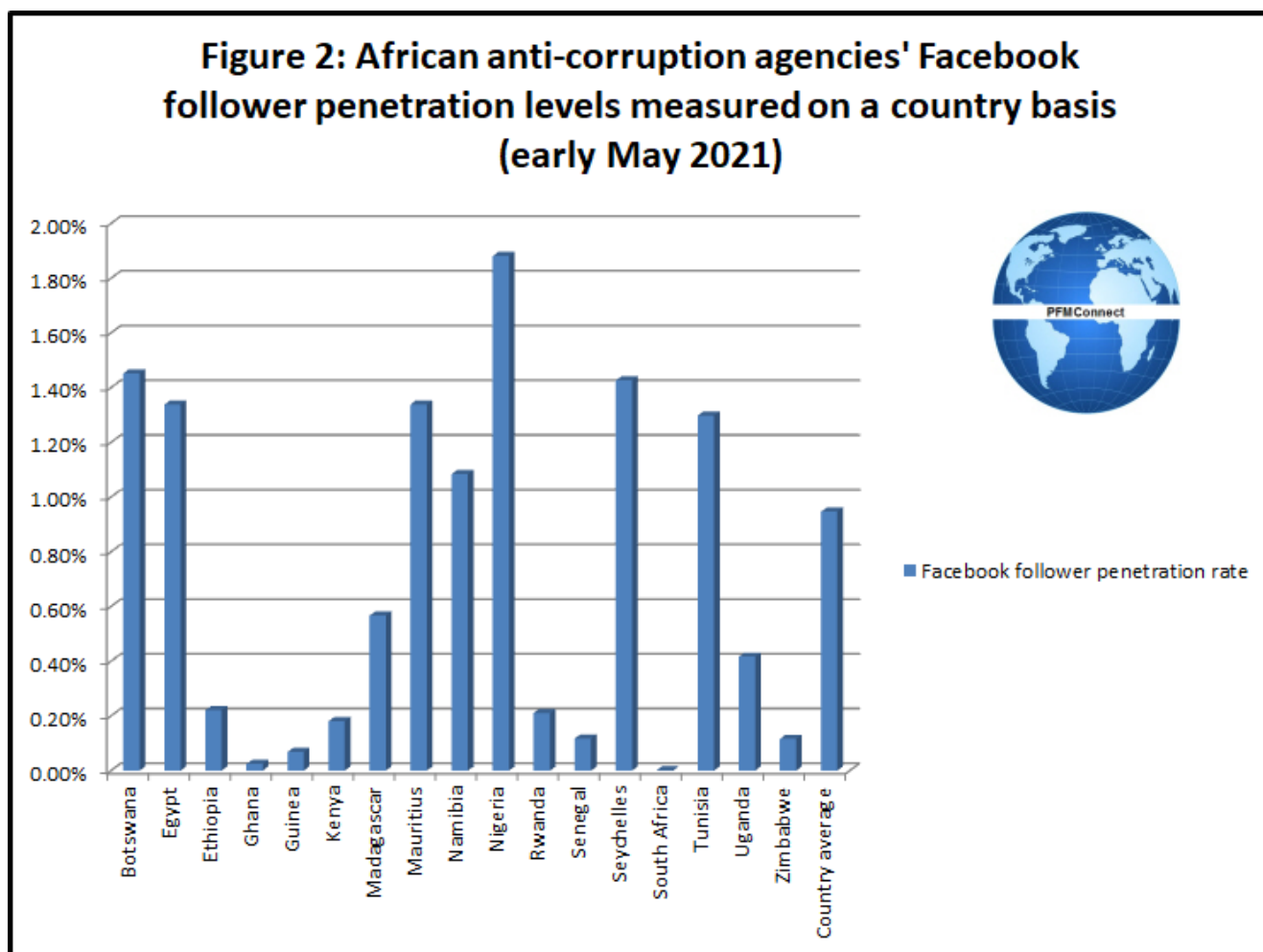
Table 4: Change in African ACA Facebook Follower numbers Mid-January 2021/Early May 2021

	% change Jan-May 2021
Botswana	4.49%
Egypt	3.58%
Ethiopia	44.07%
Ghana	19.73%
Guinea	18.17%
Kenya	2.60%
Madagascar	2.92%
Mauritius	0.15%
Namibia	87.24%
Nigeria (EFCC)	5.41%
Nigeria (ICPC)	0.67%
Rwanda	23.56%
Senegal	22.54%
Seychelles	19.65%
South Africa	2793.33%
Tunisia	-0.06%
Uganda (AntiGraft)	5.56%
Uganda (IGG)	1.50%
Zimbabwe	17.60%
Africa ACAs	4.16%

Facebook follower growth is being driven principally by increased public interest in corruption issues. For example, there was considerable Namibian media coverage about corruption in the 2021 March quarter whilst South Africa's Special Investigation Unit (SIU) has received increased media coverage this year as a result of its anti-corruption activity. Ethiopia's growth seems at least partly due to its particular posting activity discussed later in this article.

The average Facebook follower penetration level for African ACAs on a country basis (country ACA Facebook followers divided by total country Facebook subscribers) increased from 0.9% to 0.95% between mid-January 2021 and early May 2021.

Details of African ACAs' Facebook follower penetration rates on a country basis (country ACA Facebook followers divided by total country Facebook subscribers) in early May 2021 are presented in Figure 2.



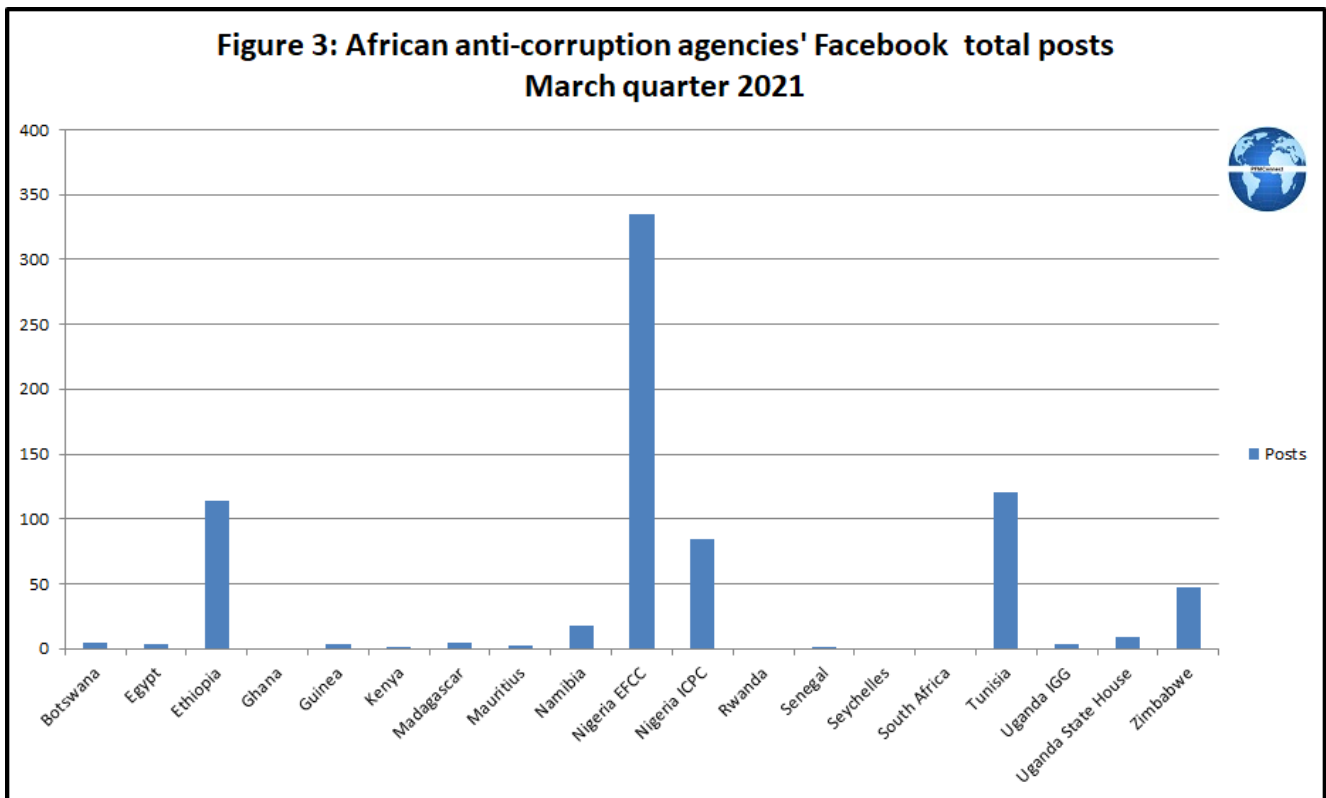
On a country basis, the average Facebook follower penetration rate for Nigeria (obtained by adding together the data for the two Nigerian ACAs) was the highest of the seventeen countries where ACAs have Facebook pages.

Facebook posting and engagement performance

Trends in Facebook posting and engagement performance for the nineteen African ACAs with Facebook pages in the 2021 March

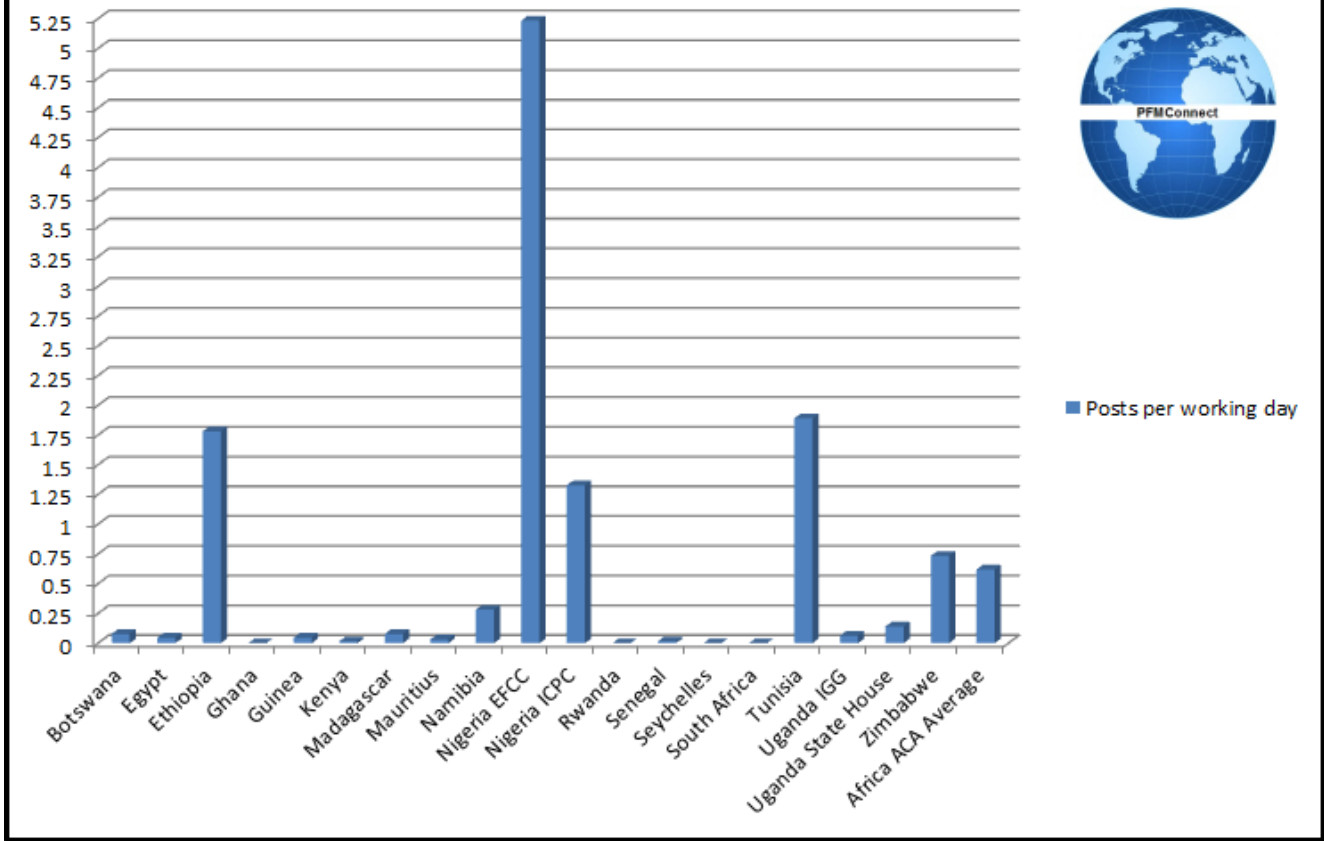
quarter were examined.

Facebook posting performance across the nineteen African ACAs with Facebook pages during the 2021 March quarter varied sharply; the results for total Facebook posts during the 2021 March quarter are presented in Figure 3.



Facebook daily posting performance across the nineteen African ACAs with Facebook pages during the 2021 March quarter also varied sharply; the results for Facebook posting activity on a working day basis during the 2021 March quarter are presented in Figure 4.

Figure 4: African anti-corruption agencies' Facebook posts per working day March quarter 2021



The average Facebook page posts 1.55 times per day according to a 3 November 2020 Social Media Perth post (<https://www.smpertth.com/resources/facebook/facebook-statistics>) but African ACAs results are considerably below this figure with an average Facebook posting rate on a working day basis during the 2021 March quarter of 0.62. Only four African ACAs published more than one Facebook post per day during the 2021 March quarter (Ethiopia, Nigeria EFCC, Nigeria ICPC and Tunisia).

Community engagement data demonstrates the recent impact of video views on African ACA Facebook engagement trends.

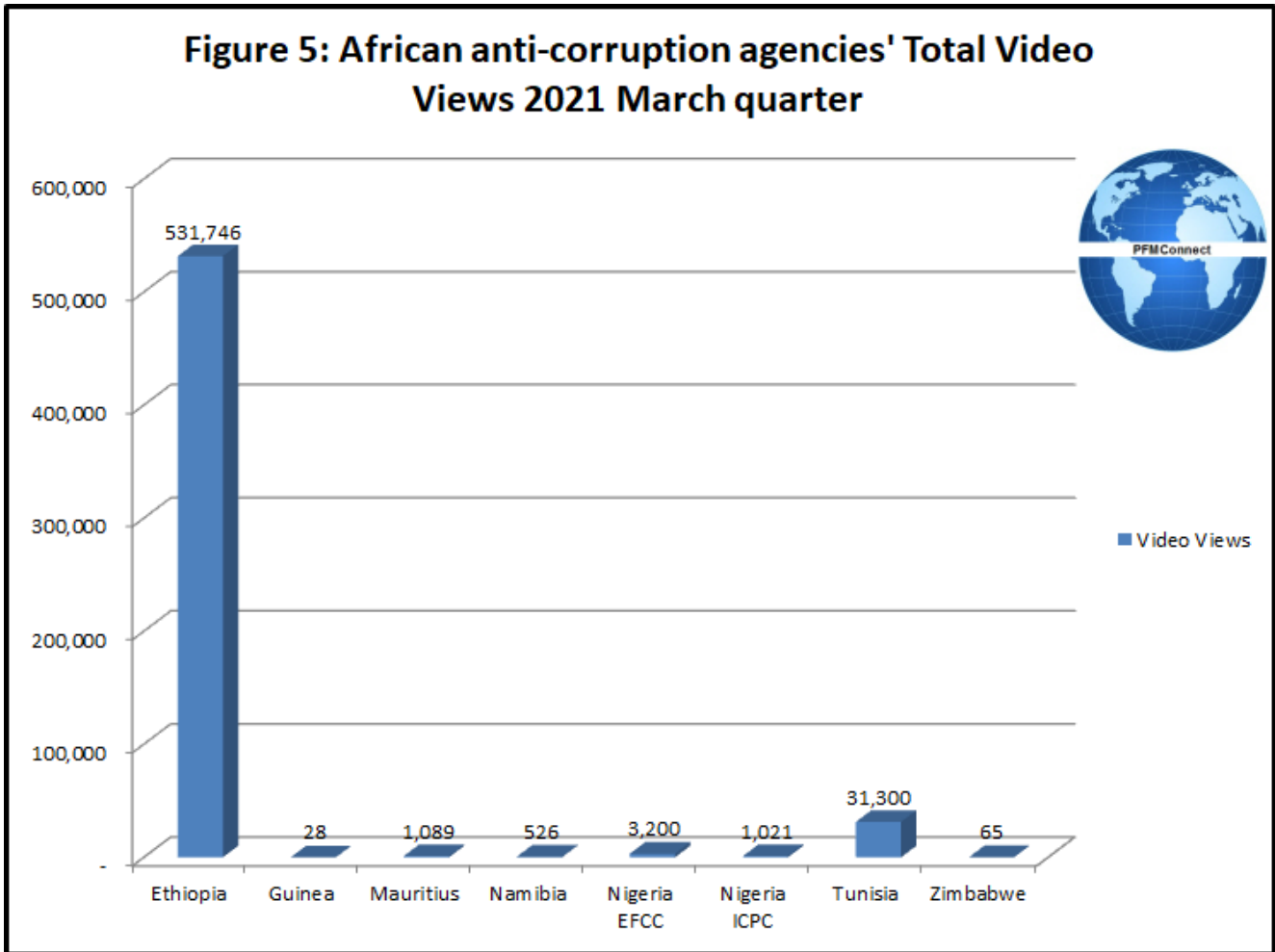
The Federal Ethics and Anti-Corruption Commission of Ethiopia

has received a remarkable response to date to a video published on 29 March 2021 discussing the personality required to be a good citizen (see box below). To date the video has received over 530,000 views.

**Federal Ethics and Anti-Corruption Commission of Ethiopia's
29 March 2021 video post**

“If citizens who are not able to serve good personality today, tomorrow will be dangerous to get a qualified generation. In order to produce a qualified citizen everyone should be responsible for the moral and good personality of human beings. This video will make us laugh when the passenger is trying to protect the law and the law.”

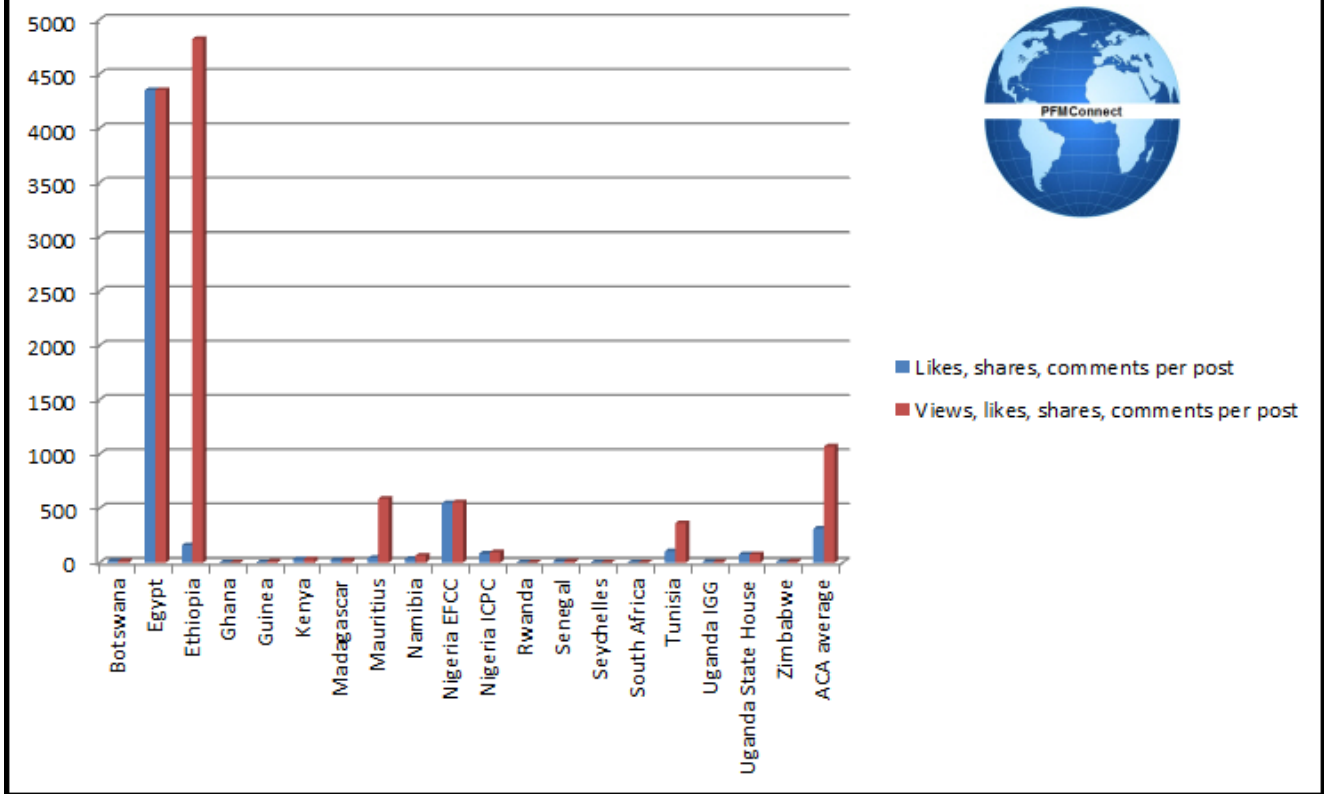
Details of video views recorded on African ACA Facebook pages as at early June 2021 for videos posted during the 2021 March quarter are presented in Figure 5.



African ACA Facebook engagement trends have been examined on an engagement rate by post basis. This data has been derived on a two-step basis.

Firstly, a total figure for ACA Facebook views, likes, shares, and comments on a per post basis was derived for the 2021 March quarter; details are presented in Figure 6; totals excluding video views are also presented.

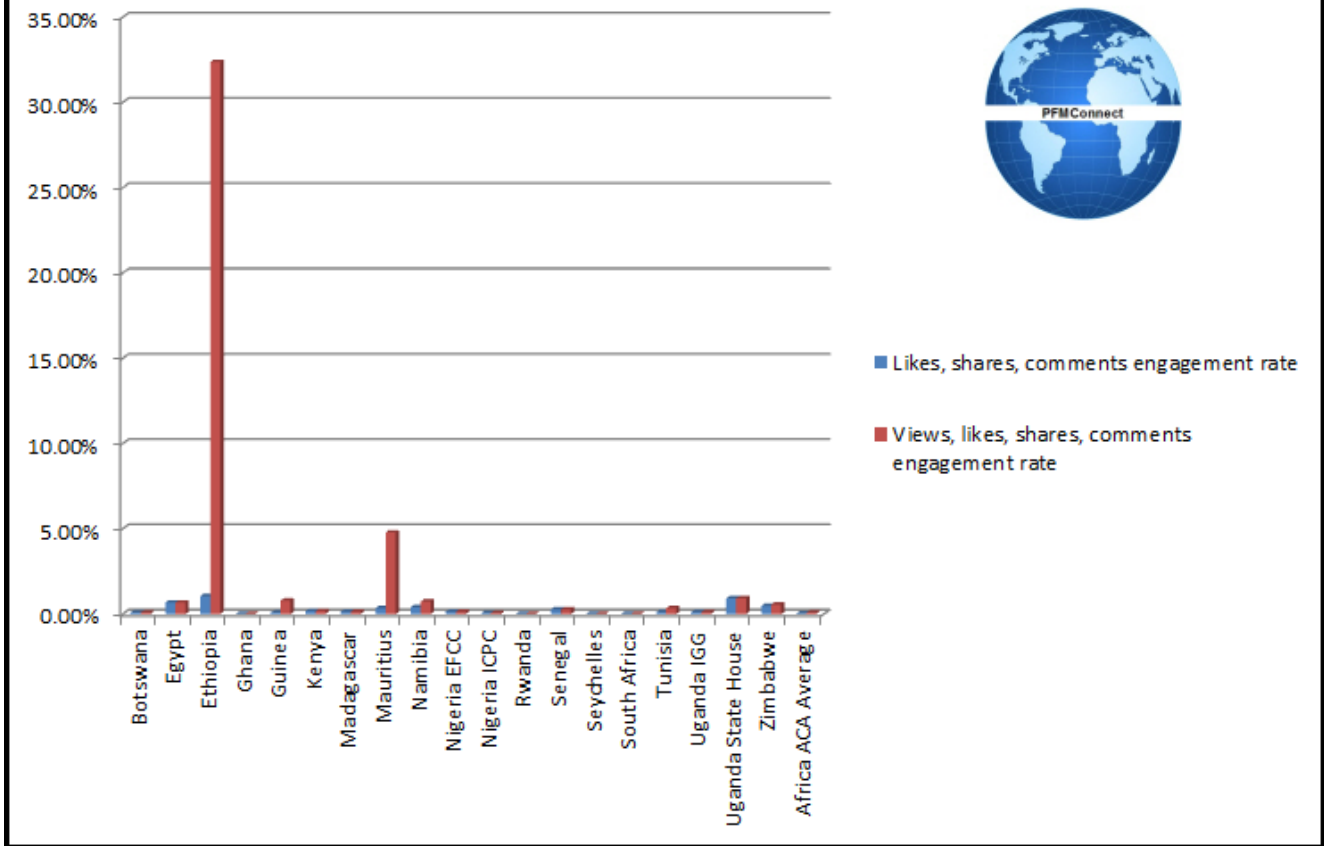
Figure 6: African anti-corruption agencies' Facebook Total views, likes, shares, comments per post 2021 March quarter



The data in Figure 6 reveals the contribution of video views to African ACAs' Facebook posting activity in the 2021 March quarter.

Secondly, the engagement rate of the above data by post is presented in Figure 7.

Figure 7: African anti-corruption agencies' ACA Facebook engagement rates by post 2021 March quarter



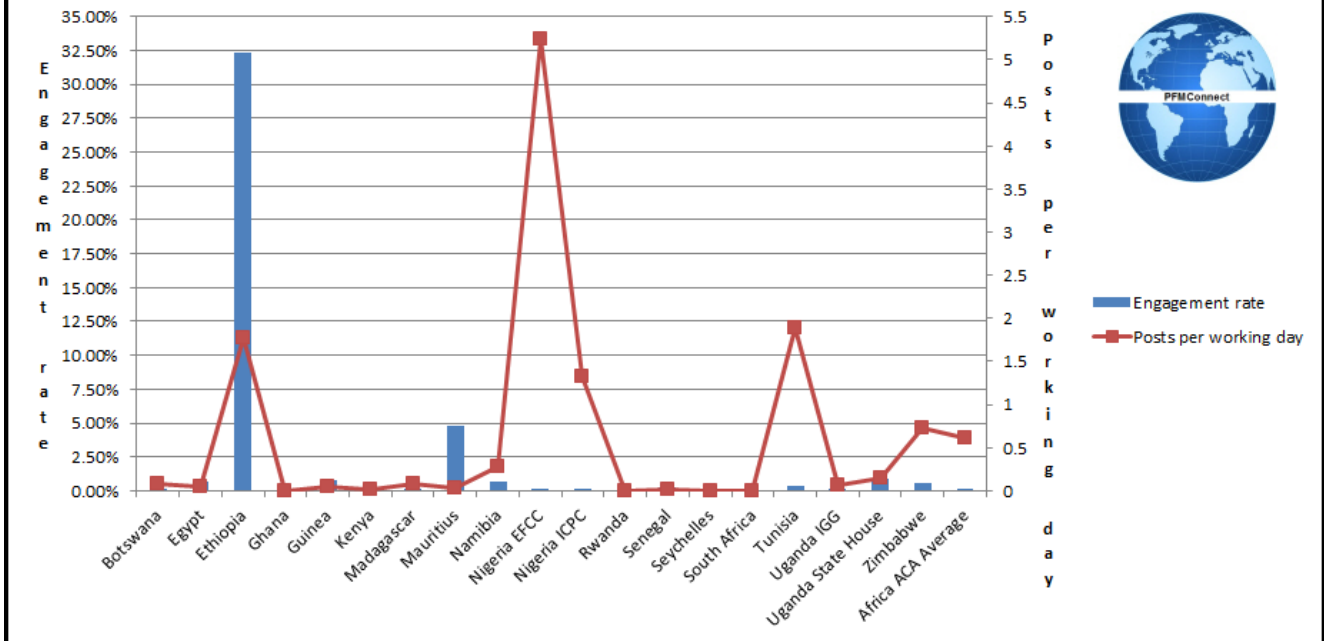
Details of African ACAs' Facebook followers as at early May 2021 and engagement rates by post in the 2021 March quarter are presented in Table 5.

Table 5: African ACAs' Facebook followers and engagement rate by post

	Facebook followers May 2021	Engagement rate
Botswana	16538	0.09%
Egypt	653412	0.67%
Ethiopia	14898	32.37%
Ghana	1930	0.00%
Guinea	1320	0.78%
Kenya	18875	0.17%
Madagascar	16233	0.14%
Mauritius	12299	4.77%
Namibia	8583	0.73%
Nigeria EFCC	426543	0.13%
Nigeria ICPC	172649	0.05%
Rwanda	1694	0.00%
Senegal	4463	0.27%
Seychelles	1017	0.00%
South Africa	434	0.00%
Tunisia	106036	0.34%
Uganda IGG	5562	0.11%
Uganda State House	8300	0.92%
Zimbabwe	1510	0.56%

Details of African ACAs' Facebook posting activity and engagement rates by post in the 2021 March quarter are presented graphically in Figure 8.

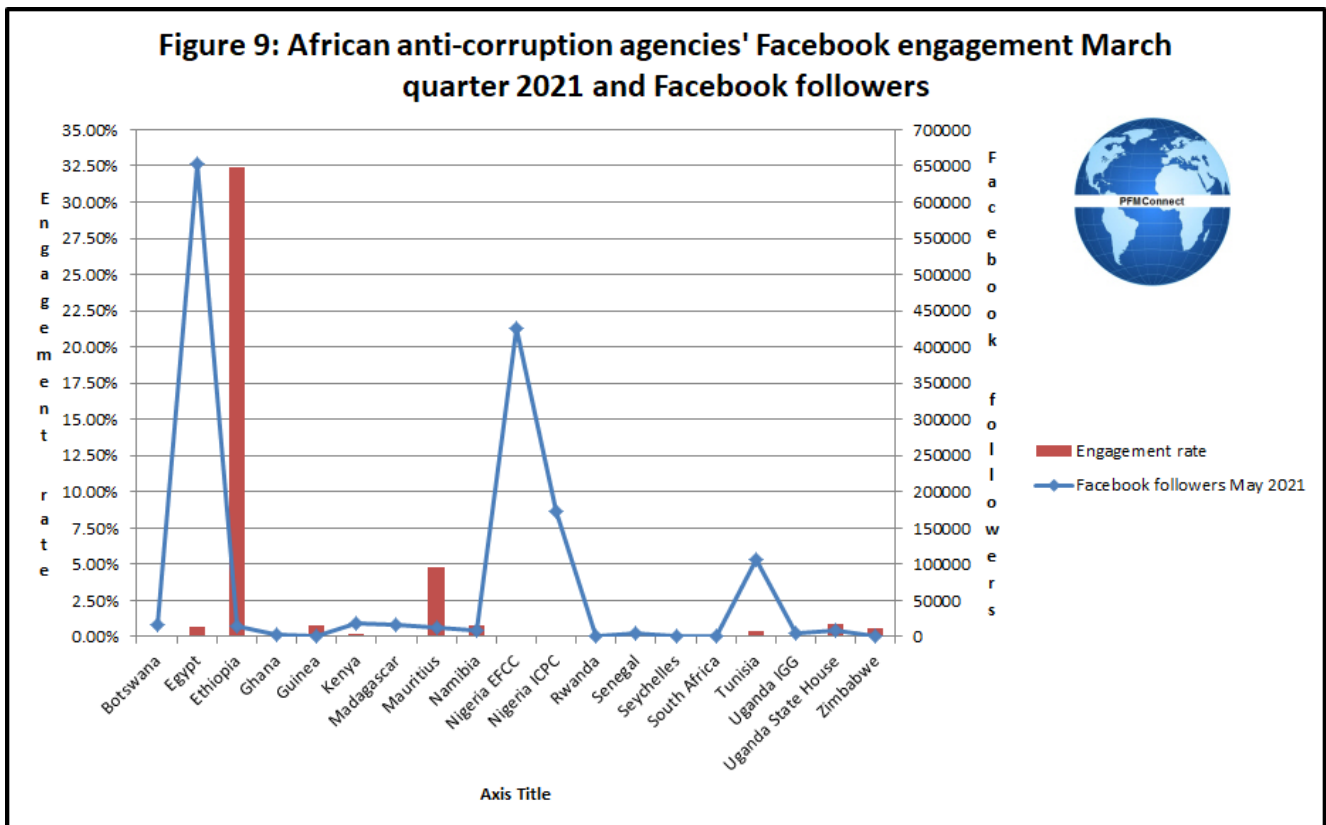
Figure 8: African anti-corruption agencies' Facebook engagement and March quarter 2021 posting activity



An analysis of the correlation between African ACAs' Facebook posting activity and engagement rates by post in the 2021 March quarter found only a weak relationship exists. This outcome consistent with industry guidance which suggests content rather than activity attracts audiences the most. The correlation was not materially influenced by the higher engagement rates recorded by Ethiopia and Mauritius or the two Nigerian ACAs' higher posting rate per working day.

An analysis of the correlation between African ACAs' Facebook follower numbers in early May 2021 and Facebook engagement rates by post in the 2021 March quarter using the data presented earlier in Table 5 found a very significant negative relationship. This correlation was also not materially influenced by the higher engagement rates recorded by Ethiopia and Mauritius or the two Nigerian ACAs' higher posting rate per working day.

The data from Table 5 is presented graphically in Figure 9.



Social Media Perth also outlined in its 3 November 2020 post the following Facebook engagement rates:

- Pages with less than 10k fans have an average post engagement rate of 0.52%
- Pages with between 10k and 100k fans have an average post engagement rate of 0.28%
- Pages with more than 100k fans have an average post engagement rate of 0.10%

The Social Media Perth guidance suggests that the Egypt, Ethiopia, Guinea, Mauritius, Nigeria EFCC, Tunisia and Uganda State House ACAs achieved reasonable engagement levels in the 2021 March quarter with Ethiopia being the star performer.

While some ACAs have recorded reasonable engagement levels, improved content in Facebook posts should have a favourable impact on overall engagement levels. The majority of African ACAs could also increase their posting frequency.

Do corruption levels influence ACA Facebook follower penetration levels?

An analysis of correlations between 2020 CPI scores and early May 2021 ACA Facebook follower penetration levels demonstrated moderate relationships between 2020 CPI scores and ACA Facebook follower penetration levels in all countries where ACAs have Facebook pages and also for countries with higher 2020 CPI scores.

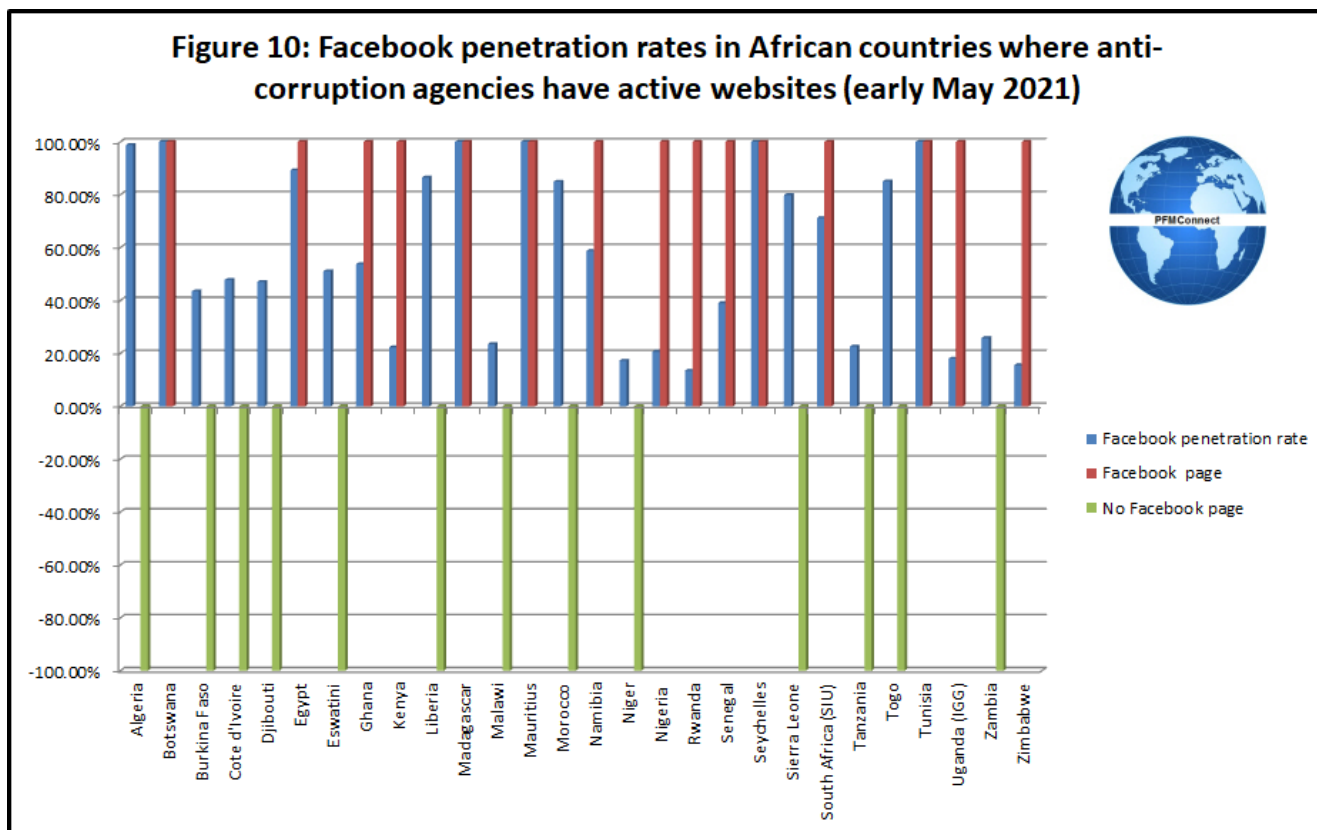
A weak negative relationship was noted between 2020 CPI scores and early May ACA Facebook follower penetration levels for countries with lower 2020 CPI scores. This data demonstrates that 2020 CPI scores are not currently a significant driver of ACA Facebook follower penetration levels.

Behind the African ACA Facebook data

A closer examination of the data covering country Facebook subscriber levels in African countries where ACAs currently have or do not have Facebook pages reveals some interesting trends.

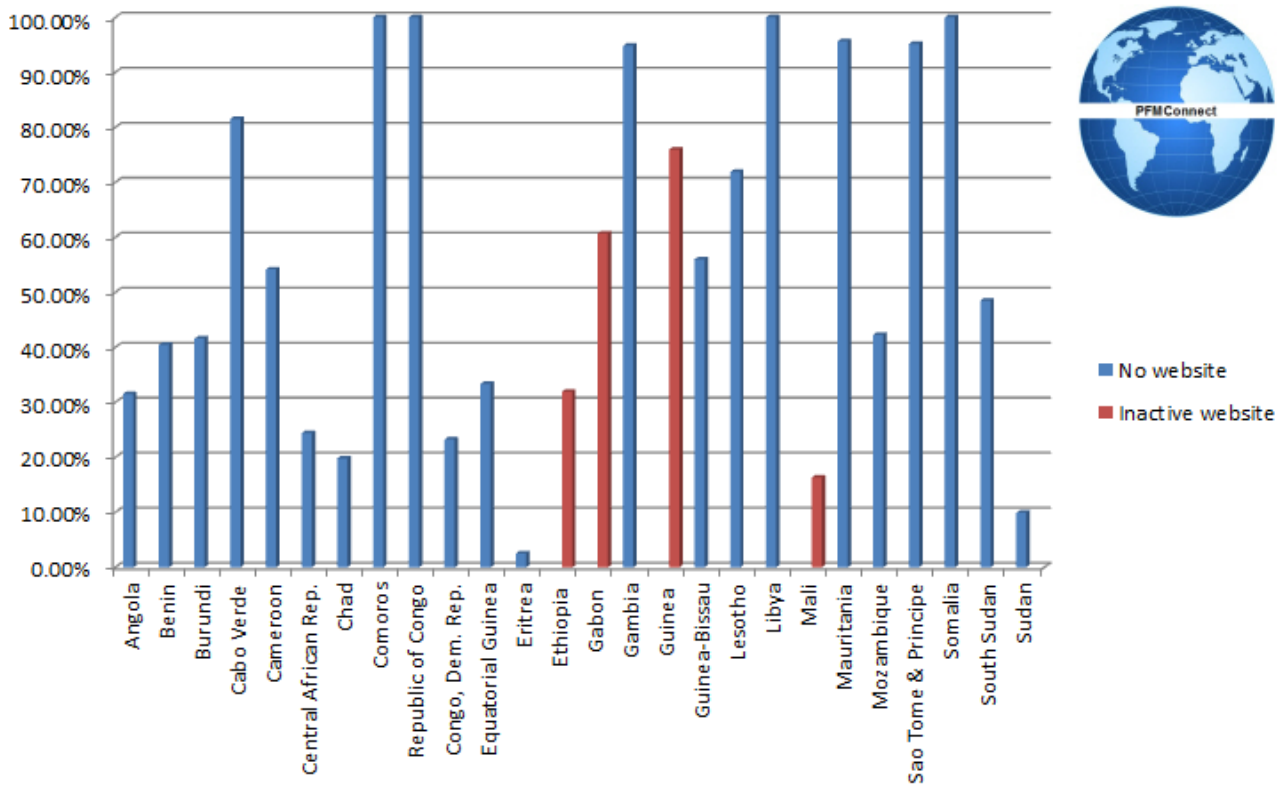
There are a number of ACAs with websites that do not have Facebook pages even though country Facebook penetration rates (total country Facebook subscribers divided by total country

internet users) are relatively high. This group of countries includes Algeria, Morocco, Sierra Leone and Togo. The relevant data is presented in Figure 10. NB the green and red bars represent ACAs with or without Facebook pages.



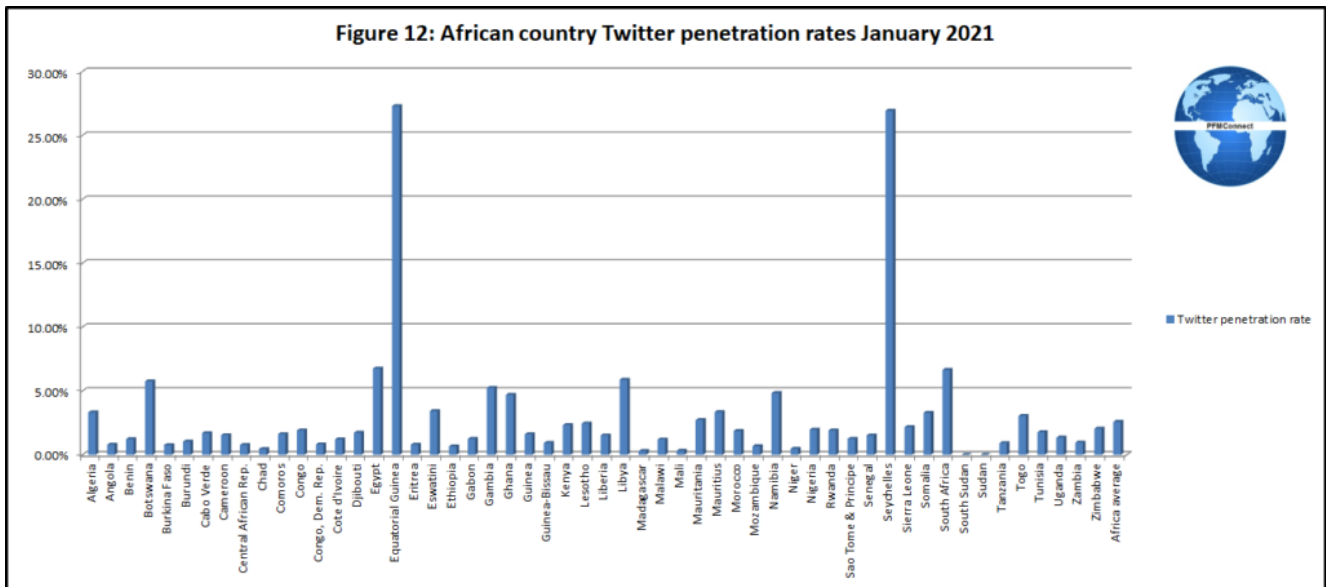
On the other hand, there are a number of countries where country Facebook penetration rates are relatively high but the respective ACAs do not have either websites or Facebook pages. This group of countries includes Comoros, Republic of Congo, Gambia, Libya, Sao Tome & Principe and Somalia. The relevant data is presented in Figure 11.

Figure 11: Facebook penetration rates in African countries where anti-corruption agencies do not have websites or websites were inactive (early May 2021)



1.3.2 Twitter activity

African country Twitter penetration rates obtained by dividing Twitter subscriber numbers by the number of internet users as at January 2021 are presented in Figure 12.



The number of African ACAs with Twitter pages is modest.

Key results

Total Twitter followers for African ACAs measured on a country basis increased by 2.59% between mid-January 2021 and early May 2021. Growth rates in African ACA Twitter follower numbers on a country basis between mid-January 2021 and early May 2021 are presented in Table 6.

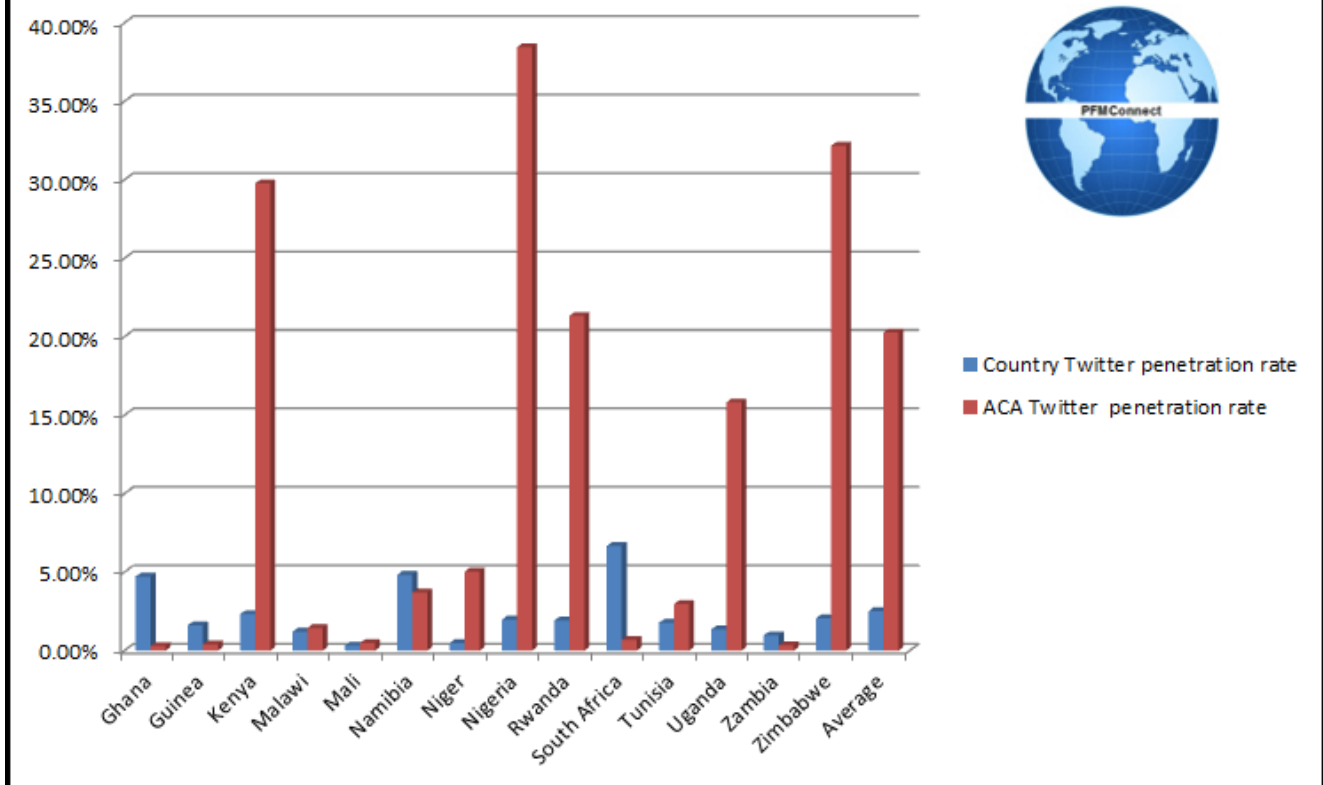
Table 6: Change in African ACA Twitter Follower numbers Mid-January 2021/Early May 2021

	% change Jan-May 2021
Rwanda	10.91%
Namibia	53.77%
South Africa	88.66%
Tunisia	23.58%
Ghana	5.59%
Zambia	0.93%
Niger	14.16%
Kenya	5.63%
Malawi	53.57%
Mali	4.35%
Guinea	18.84%
Uganda (IGG)	8.50%
Uganda (AntiGraft)	21.77%
Nigeria (EFCC)	0.00%
Nigeria (ICPC)	0.55%
Zimbabwe	14.64%
African ACAs	2.59%

Twitter follower growth is being driven by increased public interest in corruption issues. Increased media coverage of corruption issues contributed to the relatively strong growth in Twitter follower numbers in Malawi, Namibia and South Africa in the 2021 March quarter.

The average Twitter follower penetration level for African ACAs on a country basis (country ACA Twitter followers divided by total country Twitter subscribers) increased from 19.75% to 20.26% between mid-January 2021 and early May 2021. Details of African ACAs' Twitter follower penetration rates on a country basis in early May 2021 are presented in Figure 13.

Figure 13: African anti-corruption agencies' Twitter follower penetration levels measured on a country basis (early May 2021)

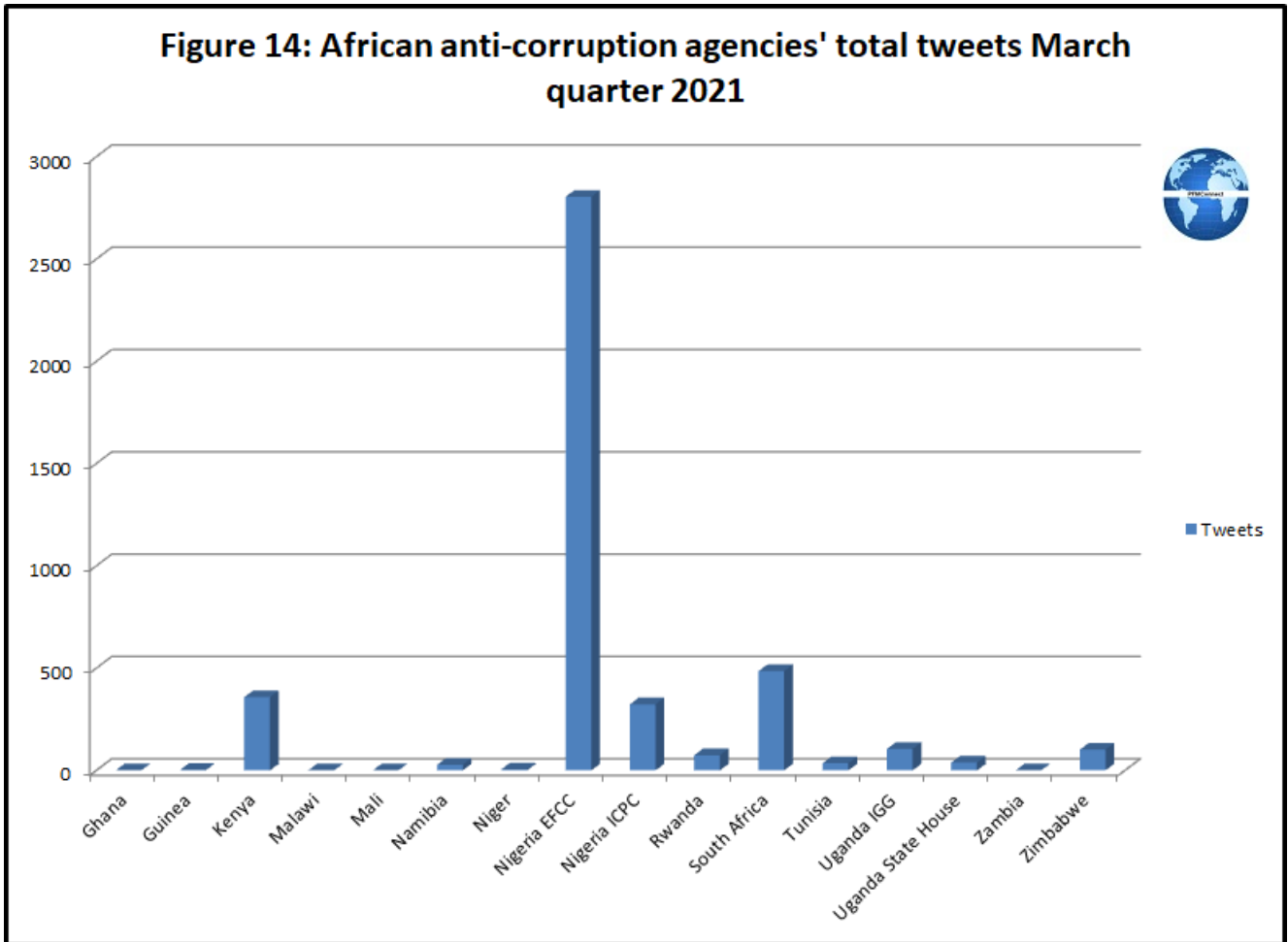


ACA Twitter follower penetration rates are currently very high in Kenya, Nigeria, Rwanda and Zimbabwe.

Twitter posting and engagement performance

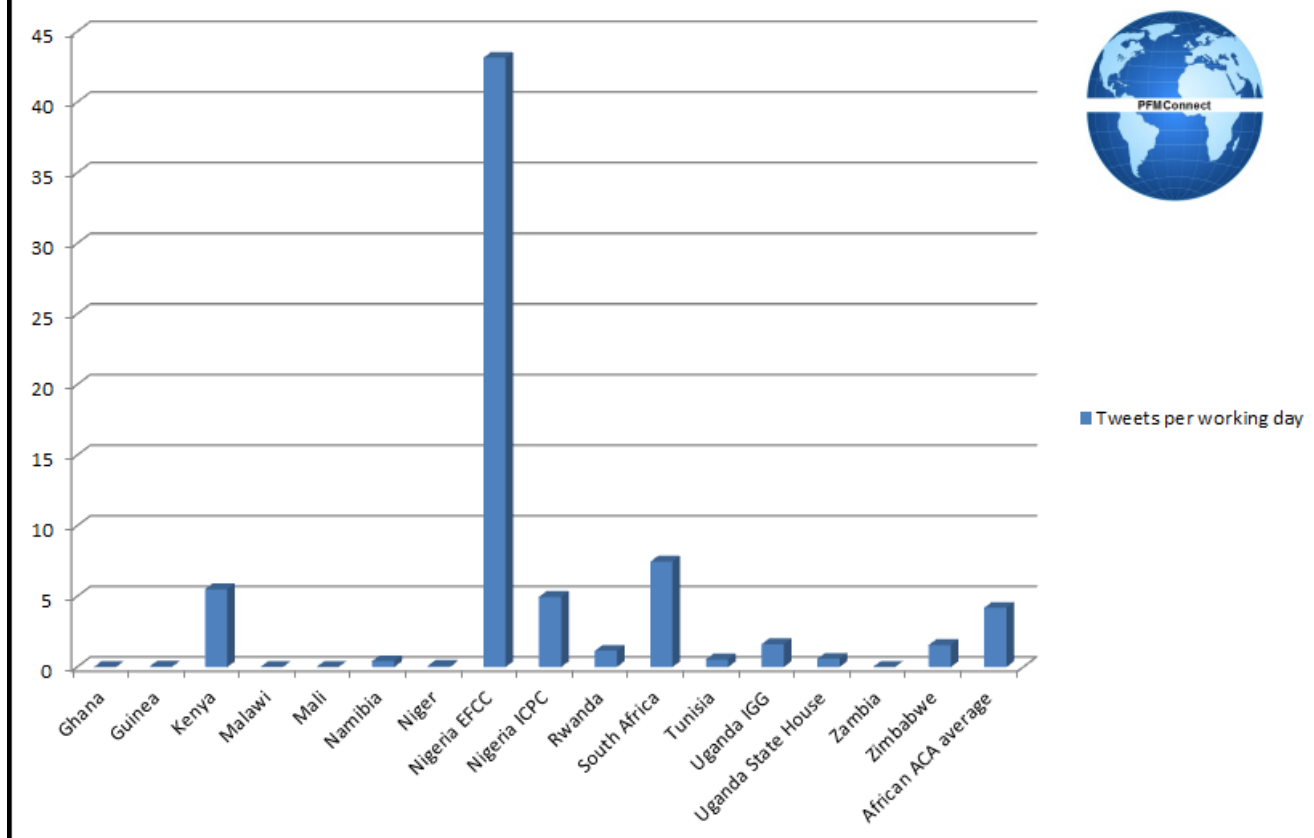
Trends in Twitter posting and engagement performance for the sixteen African ACAs with Twitter pages in the 2021 March quarter were examined.

Twitter tweeting performance across the sixteen African ACAs with Twitter pages during the 2021 March quarter also varied sharply; the results are presented in Figure 14.



Twitter tweeting performance per working day across the sixteen African ACAs with Twitter pages during the 2021 March quarter are presented in Figure 15.

**Figure 15 : African anti-corruption agencies' March quarter 2021
Tweets per working day**



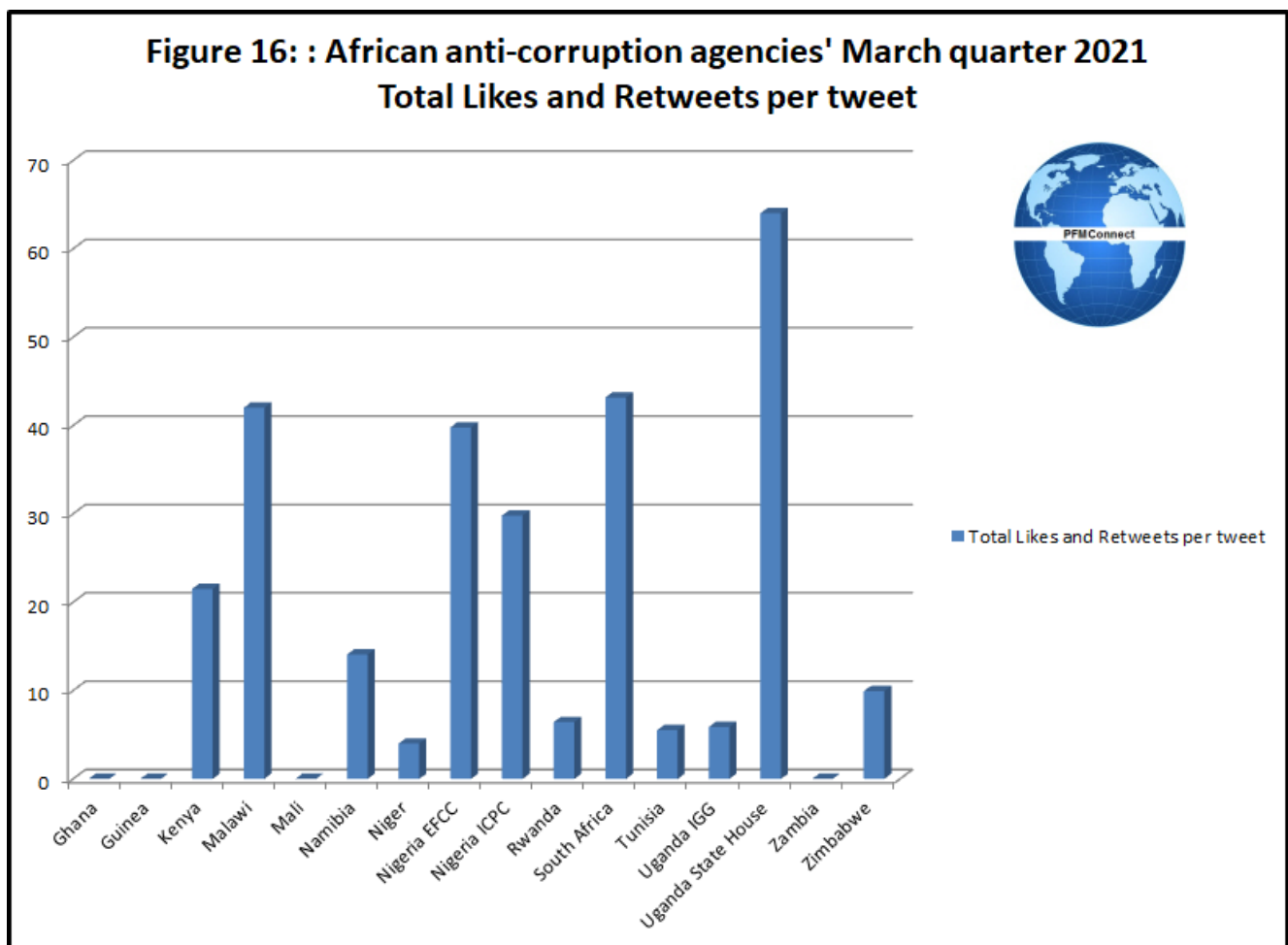
The figure derived for average tweets per day of 4.19 tweets per day for African ACAs with Twitter pages during the 2021 March quarter is relatively high average compared with a corporate brand median of 0.86 tweets per day quoted by Social Media Perth in a post on 1 October 2020 (<https://www.smperth.com/resources/twitter/twitter-statistics/>).

Only four African ACAs published more than one tweet per working day during the 2021 March quarter (Kenya, Nigeria EFCC, Nigeria ICPC and South Africa).

An analysis of African ACA Twitter engagement trends has been made on an engagement rate by tweet basis based on individual tweet likes and retweets using a public engagement rate

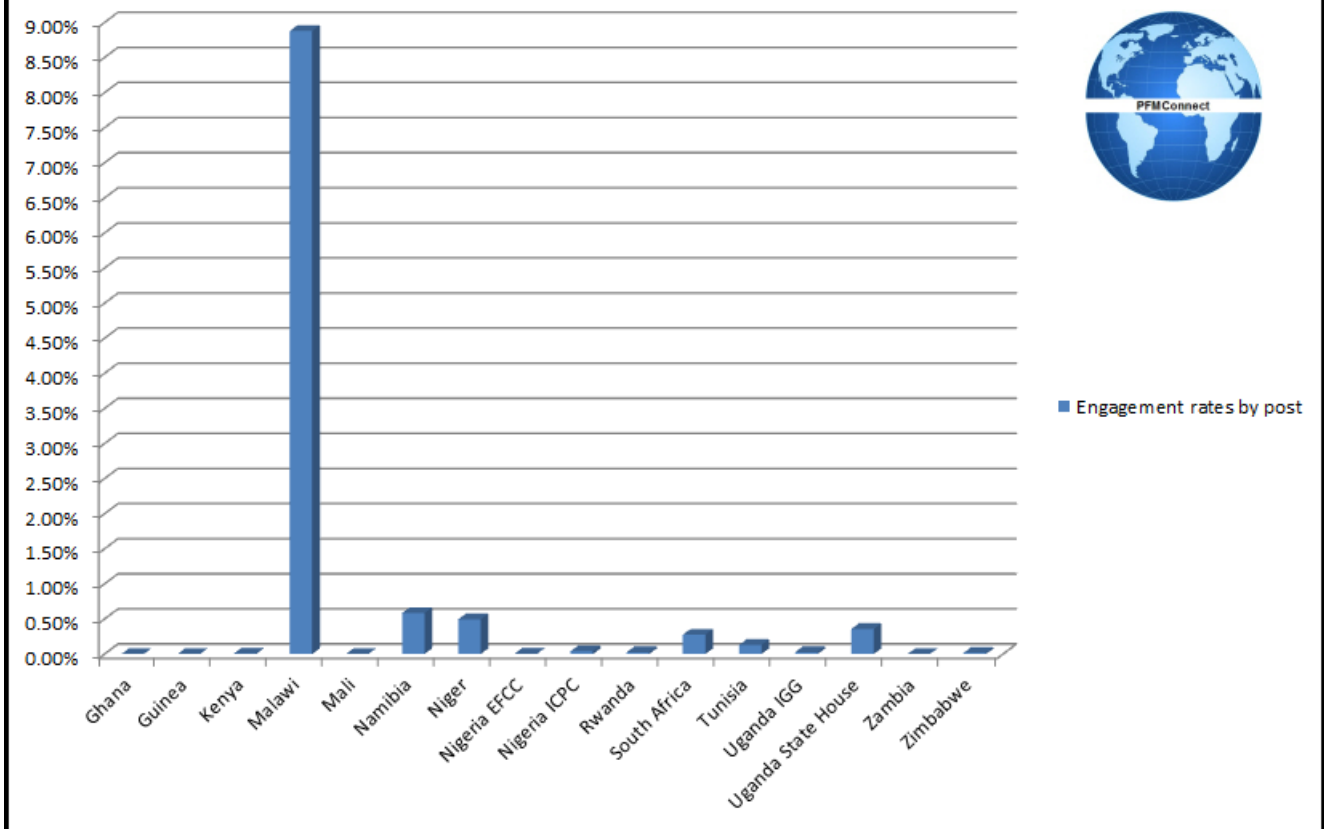
methodology as recommended by Social Status (<https://www.socialstatus.io/twitter-engagement-rate-benchmark/>). This data has been derived on a two-step basis.

Firstly, African ACAs' data for the total of all likes and retweets on a per tweet basis was derived for the 2021 March quarter; details are presented in Figure 16.



The second step in deriving African ACA Twitter engagement trends on an engagement rate by post basis was to divide the figures for the total of all likes and retweets on a per post basis by the number of ACA Twitter followers; details are presented in Figure 17.

**Figure 17 : African anti-corruption agencies' March quarter 2021
Twitter engagement rates by post**



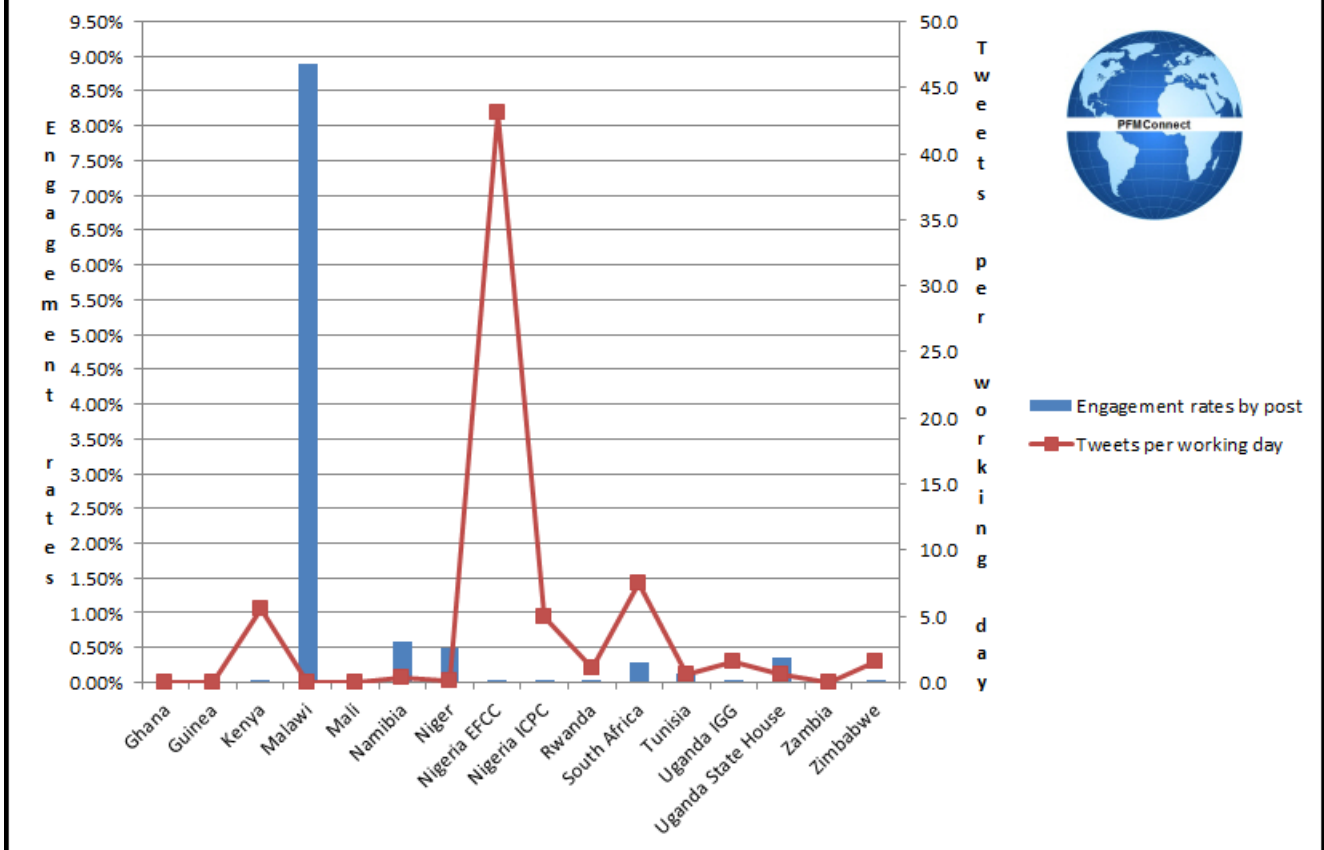
The data for African ACAs' Twitter followers as at early May 2021 and engagement rates by post in the 2021 March quarter included in Figure 17 is also presented in Table 7.

Table 7: Twitter followers and engagement rates by post

	Twitter followers May 2021	Engagement rates by post
Ghana	2022	0.00%
Guinea	164	0.00%
Kenya	324500	0.01%
Malawi	473	8.88%
Mali	192	0.00%
Namibia	2408	0.58%
Niger	806	0.50%
NigeriaEFCC	1100000	0.00%
Nigeria ICPC	72800	0.04%
Rwanda	24400	0.03%
South Africa	15600	0.28%
Tunisia	4293	0.13%
Uganda IGG	21700	0.03%
Uganda State House	17900	0.36%
Zambia	325	0.00%
Zimbabwe	55600	0.02%

Details of African ACAs' Twitter followers as at early May 2021 and engagement rates by post and tweets per working day in the 2021 March quarter are presented in Figure 18.

**Figure 18 : African anti-corruption agencies' March quarter 2021
Twitter engagement rates by post and tweets per working day**



Six African ACAs achieved engagement rates by post above 0.10% with Twitter pages during the 2021 March quarter. Social Media Perth in a post on 1 October 2020 (<https://www.smpertth.com/resources/twitter/twitter-statistics/>) suggested the median corporate twitter engagement rates was 0.048%.

An analysis of the correlation between Africa ACAs' Twitter tweeting activity and engagement rates by post in the 2021 March quarter found a very weak negative relationship exists. This outcome is consistent with industry guidance which suggests content rather than activity attracts audiences the most.

The three African ACAs most active on Twitter (Kenya, Nigeria

EFCC and Nigeria ICPC) all recorded relatively low engagement rates; this result suggests improved content in their tweets may well produce higher Twitter engagement rates.

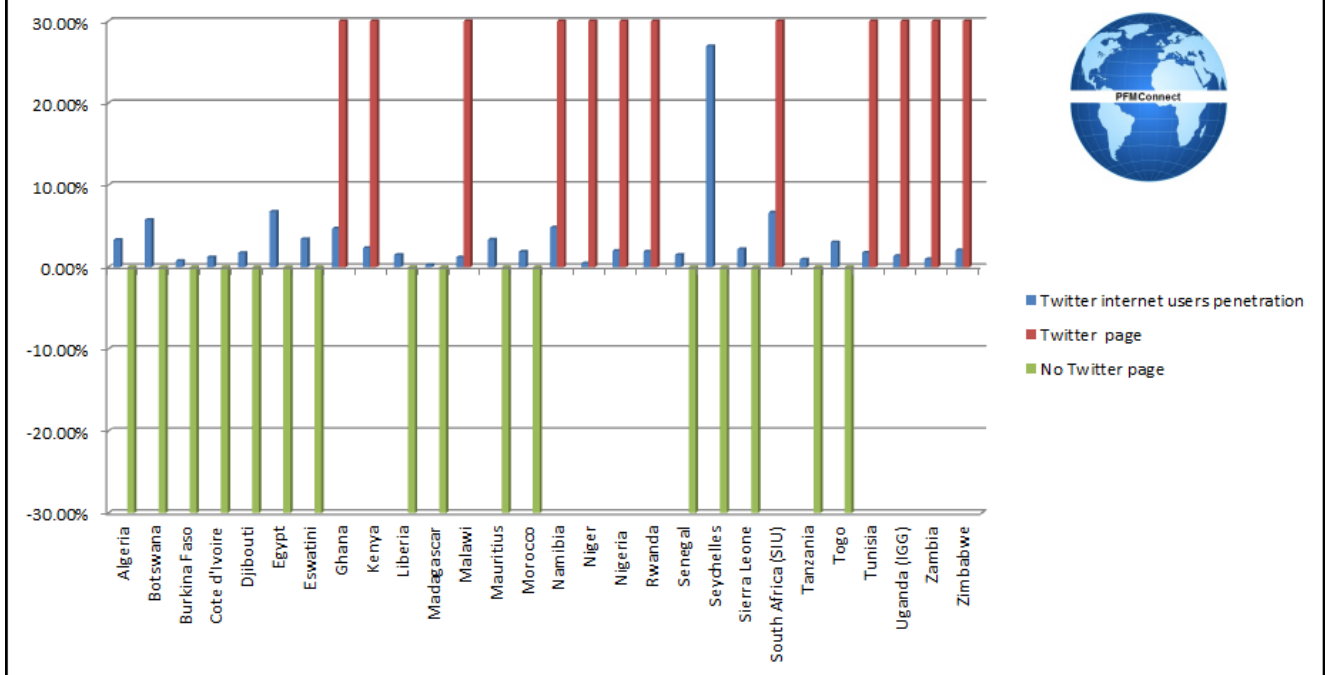
While some ACAs have recorded reasonable engagement levels, improved content in tweets by a number of ACAs should have a favourable impact on overall engagement levels. Numerous African ACAs could also increase their tweeting frequency.

Behind the African ACA Twitter figures

A closer examination of the data covering country Twitter subscriber levels in African countries where ACAs currently have or do not have Twitter pages provides some interesting trends.

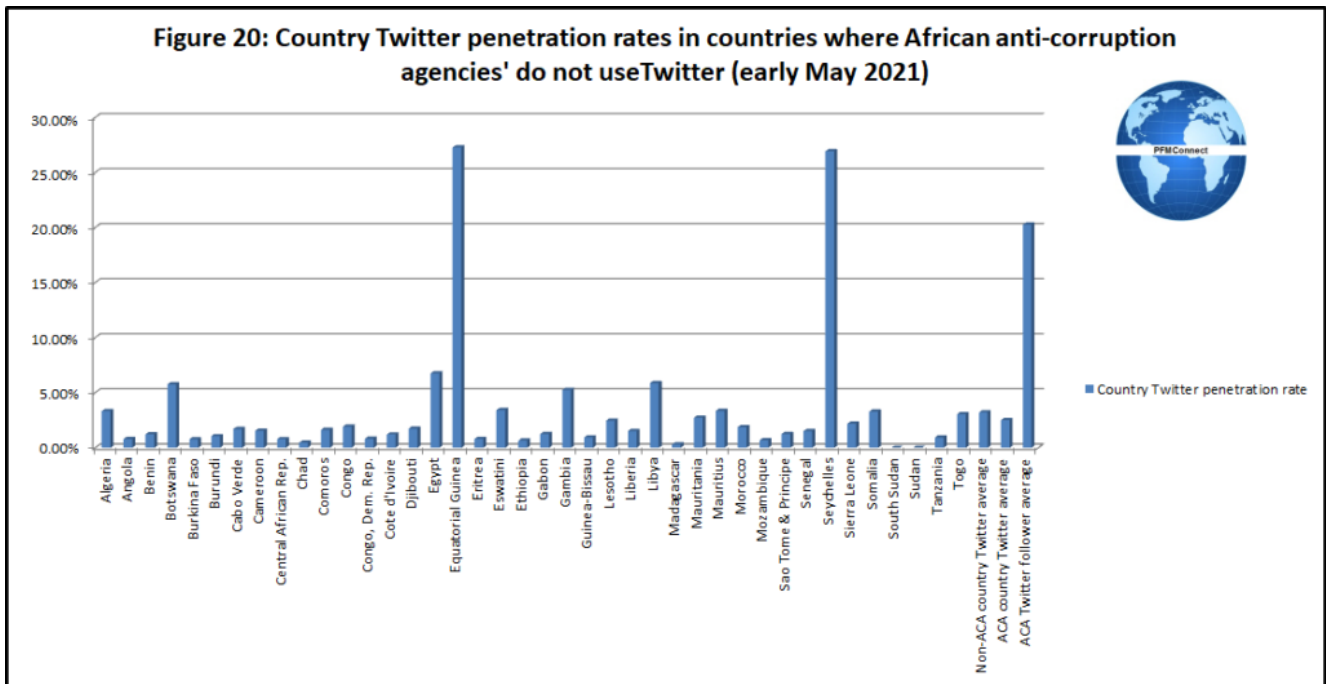
There are several ACAs with websites that do not have Twitter pages even though country Twitter penetration rates (total country Twitter subscribers divided by total country internet users) are relatively high. This group of countries includes Botswana, Egypt and the Seychelles. The relevant data is presented in Figure 19. NB the green and red bars represent ACAs with or without Twitter pages.

Figure 19: Twitter penetration rates in African countries where anti-corruption agencies have active or inactive websites (early May 2021)



On the other hand, there are a few countries where country Twitter penetration rates are relatively high but the respective ACAs do not have either websites or Twitter pages. This group of countries includes Equatorial Guinea, Gambia and Libya.

The relevant data is presented in Figure 20.



Do corruption levels influence ACA Twitter follower penetration levels?

An analysis of correlations between 2020 CPI scores and ACA Twitter follower penetration levels demonstrated a weak negative relationship between 2020 CPI scores and ACA Twitter follower penetration levels in all countries where ACAs have Twitter pages.

A very weak relationship was recorded between 2020 CPI scores and ACA Twitter follower penetration levels for countries with higher 2020 CPI scores.

On the other hand, a very strong negative relationship was recorded between 2020 CPI scores and ACA Twitter follower penetration levels for countries with lower 2020 CPI scores. While the number of countries with lower 2020 CPI scores and Twitter pages was very small, the results demonstrate how the public may take an interest in social media posts from an ACA

when prevailing corruption levels are relatively high.

2. Reporting activity

The availability of the following categories of key reports on ACA websites or on web pages of national government websites was examined:

- National Anti-Corruption Strategies
- ACA strategic plans
- ACA annual reports

Details of the availability of the above reports on ACA websites as at early May 2021 are presented in Table 8.

Table 8: Availability of reports on ACA websites

	National anti-corruption strategy	ACA annual report	ACA strategic plan
Available on ACA website	12	20	13
Available on another national non-ACA website	3	0	0
Exists but not available on any website	4		1
Being prepared	3	0	0
Not prepared	6	8	14
Total	28	28	28

N.B. One Nigerian ACA with a website and the Ugandan ACA which only has social media sites are not included in Table 8.

Some publications that have become available recently on ACA websites for the above-mentioned report categories were examined to particularly review coverage of social media activity.

2.1 Publication of national anti-corruption strategies

Less than one-half of African ACAs with websites have published their respective national anti-corruption strategy (NACS) on their website.

NACS social media coverage

The recent Zimbabwe 2020-2024 NACS specifically identifies the use of social media in its awareness-raising campaigns on the nature and effects of corruption (Specific Objective 1.1) through the employment of social media in its educational communication strategy (Acton 1.1.5)

When discussing its objective of supporting the media (Specific Objective 1.5) the Zimbabwe NACS notes “The internet and various social media provide unprecedented opportunities of disseminating knowledge and increasing transparency across national borders in a timely fashion.”

It will be interesting to see whether the more detailed discussion of the use of social media employed in the Zimbabwe 2020-2024 NACS becomes the norm in future African NACS documents.

2.2 Publication of ACA annual reports

Coverage of digital platform activity in ACA annual reports remains generally modest.

ACA annual reports social media coverage

Madagascar's Independent Anti-Corruption Office commented in its 2019 annual report that communication through digital media has been optimised to generate more support fight against corruption".

Nigeria's Independent Corrupt Practices and Other Related Offences Commission (ICPC) published details of its media coverage including social media in its 2019 annual report (see box below).

The Zimbabwe Anti-Corruption Commission (ZACC) in its 2019 annual report provided some detailed commentary on its social media activity. It noted that "In 2019, the Commission intensified publication and dissemination of anti-corruption information through a variety of media. In a commentary on a weekly television programme on Combating Corruption run in collaboration with a local TV station, the ZACC reported that recordings of the programme "were also posted on ZACC social media platforms *Facebook* and *Twitter*, where the public were further engaged and their comments and views taken on board".

The ZACC also noted that its weekly television programme on Combating Corruption was consistent with article 13 of the UNCAC which reinforces the belief that States are best served

when more information of public interest is made available to more people.

After providing references to social media activity in their 2018 annual reports, Ghana's Commission on Human Rights and Administrative Justice (CHRAJ) and Kenya's Ethics and Anti-Corruption Commission made no such references in their 2019 Annual Reports.

On balance, coverage of digital platform activity in ACA annual reports is gradually increasing.

2.3 Publication of ACA strategic plans

Less than one-half of African ACAs with websites have published their respective strategic plan on their website. The number of unpublished African ACA strategic plans is not known.

ACA strategic plans social media coverage

Recently published African ACA strategic plans have included social media related activities to support key ACA objectives.

For example Ghana's Commission on Human Rights and Administrative Justice's 2021-2025 5 Year Strategic Plan lists "Enhanced communication through CHRAJ website and social media handles" as the activity to support their objective of prioritising publication of CHRAJ under Output 1: Corporate affairs and visibility improved by 20% by 2025. The designated

indicator for the latter activity is “Traffic on website and social media handles”. An accompanying budget figure has been presented.

Rwanda’s Office of the Ombudsman’s Strategic Plan 2020/2021-2023/2024 outlined the envisaged roles for its social media and website activity in its discussion of the implementation of its proposed communication and marketing plans, namely:

- **“Media:** The Office of the Ombudsman needs to maintain a permanent communication intended to awareness raising of the general public but also receiving feedback through different media channels including TV, Radios and newspapers, social media and digital billboards.
- **Office of Ombudsman website** shall be regularly updated with significant information about achievements, issues and expected contribution from various layers of the community in issues’ solving.”

South Africa’s Special Investigating Unit’s strategic plan 2020/21-2024/25 comments in its “Improving branding & communication” section that “The SIU will, amongst other things, focus on its public interface through the use of multi-media platforms for congruent and constant messaging for brand positioning characterised by independence, trustworthiness, success and integrity”.

The Zimbabwe Anti-Corruption Commission’s Strategic Plan 2020-2024 has provided for a separate social media related output (“Interactive website, email, social media, & twitter. Manned call centre & toll free”).

The recent increase in coverage of social media related activities in African ACA strategic plans is encouraging in view of current growth in social media use in Africa.

2.4 Overview of ACA online reporting activity

ACA reporting principles

The 2012 Jakarta Statement on Principles for Anti-Corruption Agencies set out sixteen principles to help ensure the independence and effectiveness of ACAs, as part of countries' commitments and obligations under the United Nations Convention against Corruption (UNCAC). The latter principles include principles addressing public reporting (principle 15) and public communication and engagement (principle 16).

In 2020 UNODC published a "Commentary on the Jakarta statement on principles for anti-corruption agencies" which is intended to assist States parties and ACAs in ensuring that national anti-corruption frameworks are developed and strengthened in line with the UNCAC requirements.

Current African ACA reporting performance

On an overall basis, African ACA online reporting activity has, to date, not achieved the performance levels outlined in UNODC's 2020 publication "Commentary on the Jakarta statement on principles for anti-corruption agencies" for the above-mentioned public reporting and public communication and engagement principles.

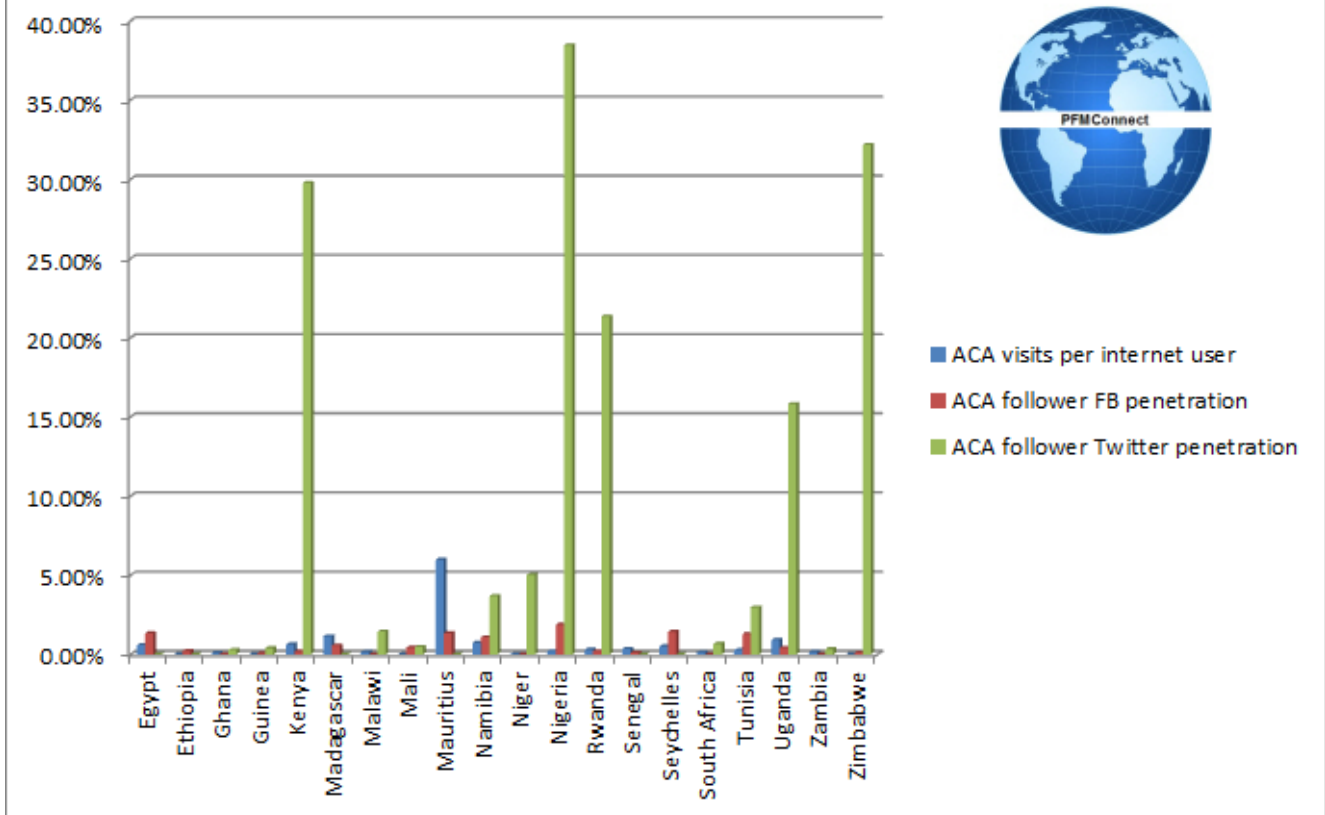
New IMF financial support arrangements to African countries which include the strengthening of anti-corruption frameworks could hasten improvements in African ACA online reporting in the near to medium-term.

Conclusions

Public interest in the work of African ACAs continues to grow as demonstrated by the recent growth in Africa ACA social media follower numbers.

The majority of the 20 African ACAs that have recently used at least two digital platforms have though experienced greater interest being shown in their Facebook and Twitter pages rather than their websites. This data is presented in Figure 21.

Figure 21: African anti-corruption agencies' penetration rates across digital platforms June 2021



Increased attention is being given to the role of social media in African NACS documents, ACA annual reports and ACA strategic plans. The current overall use of websites by African ACAs is, however, not significant while overall African ACA reporting activity has not yet achieved the levels suggested by UNODC in its 2020 “Commentary on the Jakarta statement on principles for anti-corruption agencies”.

There are currently significant opportunities for numerous African ACAs to expand their digital media activities:

- All ACAs should maintain websites on which to lodge key documents and provide anti-corruption advice to all sections of the public. This material can then be

- referred to in Facebook posts and tweets.
- All ACA websites should contain at a minimum: the national anti-corruption strategy, annual reports or strategic plans (if these are separate documents).
 - Those African ACAs with existing websites but without either Facebook or Twitter pages and are located in countries with relatively high Facebook and/or Twitter subscriber penetration levels should make good this omission.
 - The majority of African ACAs with existing Facebook and Twitter pages should increase their daily posting activity.
 - The overall quality of content being posted to African ACA social media sites requires improvement in view of the prevailing weak correlation between social media posting volumes and follower engagement. This includes both clarity of message and use of video content.

Implementing the above actions will contribute to an increase in African ACA social media usage and engagement.

African ACA stakeholders can make an immediate non-financial contribution to the expansion of digital media use by African ACAs by actively encouraging ACAs to publish their key reports online and using their social media pages to explain their work and successes.

Development partners can also assist the expansion in use of digital platforms by African through targeted support of related training and development activities.

[\[1\]](#) John Leonardo is a PFM expert with extensive worldwide experience. He is a director of PFMConnect, a consultancy

providing online support in the fields of public finance and digital communication.

Levelling-up through economic growth (a business strategy for the regions)



Posted by David Fellows

ABSTRACT This paper presents a case for the Government's levelling-up commitment being the most crucial post-Covid recovery issue for the next decade. It suggests that the commitment should be addressed through a process of regionally-based business development grounded in a clearly defined UK growth model derived from current developments in innovation and growth theory. The second half of the paper exemplifies a series of contributions required of public sector institutions to secure this agenda and argues that Government vision and leadership are essential to its success.

1. Introduction

In his speech to the Conservative Party conference last year the PM affirmed his intention 'to spread opportunity more widely and fairly' and this was reiterated in the Conservative manifesto that referred to 'levelling-up every part of the UK, investing in our great towns and cities, as well as rural and coastal areas'.

Since the general election the PM has repeatedly acknowledged his commitment to levelling-up the regions with particular reference to Brexit and Covid-19. Under the heading 'Levelling up' the March 2020 Budget asserts the need to 'raise productivity and growth in all nations and regions for everyone, addressing disparities in economic and social outcomes'. The Integrated Review prioritises 'levelling up opportunity and doing more to share the benefits of economic growth across the UK', so too the white paper 'Build Back Better: our plan for growth'. The Freeport bidding process that is underway also references levelling-up although it is not specifically targeted at areas outside London and the South East.

This is a hugely challenging time politically and economically, nevertheless, it is a time of cultural change when values are being challenged. It is a time when an inclusive vision for the regions could be seriously addressed. If levelling-up is to become a reality it has to be more than a tag applied to any initiative applicable to the regions. A properly articulated strategy is urgently required for consultation or the moment will have past.

In this short paper I shall consider the purpose of levelling-up and suggest some of the key features required in any serious programme designed to address the issue.

2. The challenge of levelling-up

Revisiting an established settlement will always pose severe difficulties in the face of opposition from those who may regard themselves as being on the losing side and it would be delusional to assume that some would not see themselves in this light. It is important therefore to be clear about the purpose, viability and the fairness of any new settlement. A process of consultation would inform public views and help clarify Government policy on these three key issues.

It is worth considering the concept of levelling-up in terms of current socio-economic challenges facing the country and the regions: the narrowing of employment opportunities in the regions that often fail to fit the skill sets, interests and monetary ambitions of regional communities compared to London and the South East; the consequent exodus of talent from the regions leaving behind increasingly vulnerable communities; and the stagnant regional economies that require regular, and often resented support, from the national exchequer.

As UK manufacturing halved in the late twentieth and early twenty first centuries (GVA) the UK's strong economic performance relative to other European countries lay with the financial services industry located mainly in London and the South East (Gudgin & Coutts 2015[1]). In terms of the current distribution of national prosperity, a recent [House of Commons briefing paper\[2\]](#) presents the GDP per head for the devolved

administrations and English regions. The astonishing fact emerges that London's value is £54,700; the South East £34,100; and the remainder are all below the national average, mainly in the range £30,100 to £25,900 with the exception of the North East £23,600 & Wales £23,900. It is a crude but interesting comparison.

These factors suggest the potential benefits of rebalancing in favour of regional economies. Options include business development from within the regions, appropriate national relocations and some reshoring of production to improve resilience against external shocks and reduce the carbon footprint of freight transport. This requires innovation in product design and production methods affording consumer value and productivity improvements to compensate for the UK's relatively high cost economy.

Apart from the extremely wealthy, London too presents immense problems for many of its inhabitants. The housing crisis is borne of a concentration of employment driving intense demand for accommodation compounded by the shortage of viable sites, a restrictive spatial planning system and political inertia. It is also worth considering the cost of continuing to develop the already congested and expensive London infrastructure.

The City, media presence, plethora of major cultural venues, senior law courts, a host of vastly resourced academic institutions, Whitehall and Parliament together constitute a vast centralised and powerful lobby for the status quo. Demands for improvements in quality of life for ordinary people find their way into the margins of political agendas but the real answer requires a full scale rebalancing of economic and social realities within the country.

In his thought-provoking paper [‘Brexit and the British growth model’](#) [3] Christopher Bickerton traces the breakdown of the British socio-economic compact and asserts the need for a new social settlement in Britain. The current Government could be seen to adopt a similar view.

The March 2021 budget makes reference to levelling-up when it itemises infrastructure spending of £650bn up to 2024-5 for roads, railways, communications, schools, hospitals and power networks across the UK. Other recent announcements instance existing grant schemes and may ultimately extend them. A close-ended capital expenditure commitment could suit Treasury spending controls but a clear diagnosis and well-articulated recovery path is surely needed before scarce resources are deployed in a rush to limit the analysis and identify the feasible.

Levelling-up may be a long term project but this does not mean that the manner of its creation is unimportant, quite the opposite.

3. Innovation, productivity and growth

Innovation and growth theory has a history stretching back for more than 70 years but its research and impact on public policy has not been a dominant feature across the world as could have been expected in a period of technological change, financial crisis and the more recent drive for renewable energy and a reduced carbon footprint. As major new businesses have emerged in the USA over the past two decades,

particularly in the digital technology and bio-engineering sectors, Europe has seen a less revolutionary experience with Germany successfully doubling down on engineering while the UK, having produced a multitude of innovative start-ups, has seen them quickly sold off, often to companies in the USA. In effect, the USA's pro-business culture has been the stand-out innovative winner with hardly a shot being fired by its business rivals.

It could be said that there is a need for some consolidation of theory and greater rationality of thinking by governments when developing their business promotion agendas. Instead, considering the UK specifically, the Government's business agenda has tended to cover all bases but none of them particularly well or structured in a manner designed to learn from experience.

In her thesis [\[4\]](#) for the Adam Smith Business School of Glasgow University Nasira Bradley reviews the literature and starts to subject innovation and growth theory to rigorous statistical analysis. This raises the prospect of a more consolidated theory of business development and productivity and offers a potentially pivotal contribution to UK Government business development policy in the context of the levelling-up commitment and the UK's post-Covid economic recovery.

General drivers of innovation Bradley tests the various theoretical drivers of innovation for efficacy against business turnover applying multiple regression analysis and using the EU Community Innovation Survey (based on the OECD Oslo Manual definitions [\[5\]](#)). This leads to some interesting distinctions between primary and secondary drivers and firms of various sizes, maturity and ownership. Primary drivers related to firm size are identified: (i) small firms gain from

skilled human capital and university contact; (ii) medium sized firms gain from the factors in (i) and contact with government research establishments (see comments on Germany below); and (iii) larger firms gain from the factors in (i), from public funding and co-development with suppliers. Skilled labour and university contact prove effective drivers throughout these various business segments. It could be said that they provide the basics of modern business development. R&D investment is identified as a secondary driver.

Technology Gudgin & Coutts 2015 state plainly that R&D spending is essential to the development of science-based sectors including pharmaceuticals, aerospace and electronics and observe that the UK has the OECD's only recorded long-term decline in business R&D as a percentage of GDP.

Jones[\[6\]](#) points to the critical role that government-led innovation investment has had on the development of major technology-based industries in the UK, USA and elsewhere. Mazzacuto[\[7\]](#) reflects on the huge impact of US Government entrepreneurship, particularly the DARPA Programme, in supporting research that brings together multi-agency personnel to research and develop innovative applications that would probably prove discouraging to the more risk averse venture capital market. She notes the tepid approach evidenced by UK Government in this field and advocates a more adventurous spirit if the UK is to gain a footing in new areas offering the prospect of commercial dominance. The recent Government Bill[\[8\]](#) to 'create a high risk, high reward research agency' (ARIA) is intended to 'push boundaries in search of new discoveries' and could be seen as response to this challenge.

Christensen[\[9\]](#) lays emphasis on the insights that founders

bring to young innovative businesses, often using existing technologies that the firm rapidly develops once the market provides good use for the innovative offering. This could explain Bradley's finding that R&D is a secondary driver of innovation, placing the entrepreneur as the instigator with R&D investment improving the potential of innovative commercial applications.

Perhaps Christensen offers the more common case whereas innovation based on advanced science should be seen as a special case that applies in some fields on some occasions. Electronics and digital technology are certainly represented in both approaches.

A recent Policy Exchange paper [\[10\]](#) reflects on the Government's intention to bring forward the ARIAL programme. The paper offers a contribution by David Willetts that ends: 'Britain's problem is that we need to do better at turning science into innovation ... to do that we need to be clear about what exactly is the problem we are trying to solve. And I think that is the challenge of promoting the development and application of key technologies.' This could be seen as a call to establish earlier relationships between relevant industries and Government/university scientists engaged in the development of key technologies. Perhaps this should also be viewed in reverse, whereby greater efforts should be made to identify early stage industrial innovations and expose them to relevant emerging technologies.

Research institutes Bradley's review of the literature on German industry suggests that government research institutes provide knowledge transfer and research benefits to medium sized firms that they could not otherwise afford and that public funding often appears to bridge the gap between the

cost of borrowing and the internal rate of return required for viable investment. Industry-wide linkages aid the diffusion of knowledge within Germany.

Agtmael and Bakker's review of innovation[\[11\]](#) in the US and EU also suggests that a great strength of the German (*Fraunhofer*) technology institute system is the way in which it brings together academics and businesses working side by side on a variety of projects. This close working offers opportunities for shared learning and interdisciplinary collaboration that does not trespass on commercial advantage, indeed it may lead to new commercial partnerships.

Independent firms Christensen is a strong advocate of independent firms that are small enough to bring an appropriate cost and culture to the development of new products for an emerging marketplace. Mayer[\[12\]](#) supports this claiming that 'the decline of the UK as a major economic power in the 20th century (compared to) the rise of Germany, Japan and the USA (was) associated with the persistence of family block holdings'.

Bradley's work confirms that independence is a major factor in the growth of innovative firms, the longer they remain independent the more innovative they become and the more they grow. Independent here means that the firm remains largely in the hands of its initial owners with external parties holding no more than a 25% stake. The early sale of independent innovative firms is, therefore, detrimental to their transformation into major modern enterprises. Interestingly, Bradley finds that independent innovative firms benefit from lower rates of corporation tax although the tax does not seem to inhibit the growth of other firms.

Despite the growth benefits of independence, Bradley notes how few UK independent firms have grown into major corporations, having sold out at an early stage of development. This reflects poorly on UK practice where early sale is commonplace.

Larger firms – productivity and regulation Bradley asserts that larger firms have higher productivity than smaller firms, possibly because of the sectors they work in or possibly because of their higher revenues relative to overheads. EU SMEs account for 70% of the workforce but only 60% of production (ECB Bulletin 2013[\[13\]](#)). A recent IMF paper on rising corporate market power[\[14\]](#) offers a caution on this finding suggesting that mergers and acquisitions by dominant firms ultimately contribute to declining business dynamism and economic growth.

The IMF paper concedes that larger firms tend to be more productive initially but as they become hard to compete with, for example, because they entrench their market positions by acquiring other firms, they ‘could become less innovative over time and also discourage their (current and potential) competitors from innovating too’. The IMF, therefore, urges Governments to enforce both merger controls and prohibitions on the abuse of dominant positions. Data portability and interoperability of systems is also becoming important for similar reasons.

Venture capital Bradley finds that both innovative and non-innovate firms benefit from venture capital although this is apparently not the case with independent firms. Agtmael and Bakker make a potentially telling point that smaller developing firms find that venture capital providers are too risk averse to support this cohort leaving the field to the

vagaries of crowd funding, successful entrepreneurs turned business 'angels' or public authorities who have the vision to establish business hubs to promote emerging businesses. The recent closure of many high street banks and, even before that, the gradual elimination of locally made bank lending decisions, has greatly reduced the UK banking system's exposure to SMEs thereby creating funding problems for small independent firms. Bradley agrees with Agtmael and Bakker that venture capitalists may not be comfortable with independent firms, effectively denying them of the means to grow, although UK entrepreneurs may simply prefer to sell rather than develop.

UK Policy development Recent academic work presents a clear and urgent need for Government to construct an evidence-based picture of business development in the UK, identifying policies that both help revitalise the business sector and secure the levelling-up agenda. This review would extend across the whole of government, producing a coherent plan that employs initiatives that are effective, specific and affordable rather than broad and unsustainable over the necessary time-scale. The review would include consideration of relationships between innovation and pure research; the seeming lack of fit between investment capital providers and emerging independent innovative firms; the supportive relationships existing between emerging innovative firms, the wider business community and universities; and the cultural characteristics of innovative businesses in the UK.

4. The need for a British growth model

Bradley identifies themes that can be incorporated in British business development policy as exemplified in the next section but her remarks on specific German experience reflect cultural aspects of innovative practice that may be difficult to replicate precisely in the UK.

The German Fraunhofer Institute system that may be regarded as a difficult fit with the UK's university sector. Nevertheless, the combination of the London Bioscience Innovation Centre sponsored by the London Development Agency and the Francis Crick Institute sponsored, amongst others, by the Medical Research Council offers a British example. So do the seven High Vale Manufacturing Centres (HVMC) offering various specialisms and located in the regions that bring together academic and industry specialists working with businesses seeking to innovate products and processes. UK trade groups, also meet to explore new industrial techniques and emerging problems.

The issues are, therefore, of relevance and ease of engagement (whether, say, with an appropriate university department or HVMC), particularly for the time-poor SME. Is there clarity about what is needed, are potential beneficiaries aware of what is already available, are the right facilities available in the right place, as the system actively inclusive? A report by the ERA Foundation [\[15\]](#) suggests that a review of local industry strategies could give answers to some of these questions. The UK has clearly started at the wrong end of the spectrum, we accept the scale of the tasks required to move into a more satisfactory position?

The German commitment to vocational training presents another point of variance. Agtmael and Bakker reflect on the respect for vocational development in the German manufacturing

tradition, including training for postgraduate entrants to industrial environments. College and firm work together to ensure that employees receive appropriate skill training up to a very high level throughout their careers on a part time or full time basis.

The white paper Skills for Jobs [\[16\]](#) represents a commitment to improve the quality and status of vocational training in the UK. It reads as though the focus is more on training and qualifications than forging a collaboration between employer, college and employee to achieve relevance to the workplace. Can practical skills be properly acquired without emersion in the workplace environment? European working culture tends to value stability of employment and the poaching of employees is discouraged. The white paper offers transferability of employment during training as a key selling point.

The research suggests significance in the readiness of UK business founders to relinquish ownership of their businesses compared to the prevalence of longer term family ownership in Germany. The mutual support between firms within business sectors, albeit not necessarily direct competitors, is another key difference between the two systems. The latter is clearly more feasible in a stable ownership system where trust can be developed over time. Should these differences be accepted or does the UK Government have a role in at least questioning cultural practices and facilitate further consideration of business community behaviour?

The funding of emerging firms presents a challenge. In part, the German institute system helps mitigate the need for development capital. The research suggests that the availability of development capital can present a significant hurdle for emerging British firms. The UK Government has

recently established the British Business Bank[\[17\]](#). This is less a bank and more a portal for various private sector business advisors and venture capital providers working within Government guidelines. A bank should learn about its clients and develop its offering accordingly but Government will lack the necessary feedback. Both Government and client will be limited by how intermediaries choose to execute their roles. This is not a development bank as one might expect, it could be seen simply as a means of disengagement by Government.

The UK's annual university R&D Research and Innovation Programme and defence R&D investment amount to almost £10bn. This dwarfs the current intentions for the ARIA programme of £220m a year. How does the UK shape these larger R&D budgets so that, working in conjunction with the R&D resources of the private sector, it may make the greatest impact on business innovation, productivity and growth? Perhaps there should be a twin track approach, part Government-identified research programme developed in close collaboration from the start with UK businesses and part a willingness to invest behind a business or business sector that is already making demonstrable progress with some form of innovation. Whatever the chosen approaches, the firm must be front and centre not the late-comer for whom the menu choices have been pre-selected.

Every country has its unique culture and institutions necessitating a unique development path. A simple switch from one culture to another is rarely possible and few systems are ideal in themselves. The UK must learn from others but ultimately it must find its own way of using innovation drivers to achieve growth and prosperity. This must be a collaborative process involving business, the public sector and academia, each element being a loose collection of constituent parts with diverse objectives. The Government's

recent white paper Build Back Better: our plan for growth [\[18\]](#) is the traditional shopping list, subsequent discussion needs to identify the effective means by which aspiration becomes reality.

The underlying assumption of what follows in this paper is that the necessary approach to levelling-up should be a process of regionally-based business development supported by a raft of Government measures. The consequent economic growth will then support self-sustaining communities that do not require disproportionate amounts of state aid to provide the trappings of physical regeneration that belie the reality of lived experience.

Some serious modifications to UK practices are long overdue and many of them rest in Government hands. Producing the right set of measures across so many fields with so many stakeholders will be no easy matter but there can be little doubt that Government must acknowledge its pivotal responsibilities. Should the Government fail to provide the necessary vision and leadership then there will still be individual successes but the economy will seriously underperform and the project will fail.

5. Elements of reform

The proposition set out above suggests that the most effective way for the Government to approach its commitment to level up the regions would be for it to adopt a programme of long-term public service interventions designed to stimulate regional economic development. It would be formulated with a consistent focus on business innovation leading to productivity

improvements and growth. By careful and well informed programme design it is possible that the solution may rest more on insight and long-termism than huge public investment. Some examples are outlined below.

Personal development

One of the critical lessons from Bradley's study is that skilled human capital is one of only two drivers of innovation that are effective across all businesses. The development of skilled human capital starts in many cases with the final two years of schooling followed by a university or technical college education (see below). It is imperative however that the process does not end there. There may well be the option of in-service training. There may be project work assigned to achieve both business outcomes and personal development. There may be formal mentoring by an experienced colleague and there will always be managerial oversight to assign, guide, assess and support.

This process is clearly best suited to continued employment over a lengthy period. Both employee and employer value the learning process that delivers the capacity to recognise opportunities to innovate, leading to improved productivity and growth. Such intuitive leaps are a combination of innate ability and the history of personal development for which the individual and the firm are equally responsible.

Higher and further education

Universities are also a driver of innovation that prove effective across all businesses. They provide knowledgeable

graduates equipped with key skills, in-service training, joint ventures, spin-offs, guidance relevant to new fields of work and research to extend chosen development pathways. University start-ups, spin-offs and ownership of IP can all facilitate business development. HVMCs need a revolving door to academic expertise and perhaps more universities and firms need to be actively engaged within this new system. There are a whole series of relationships here that should be reviewed and probably improved.

Technical colleges can provide learning partnerships to impart essential skill training to a very high level. If the UK is to revive its industrial base to any significant extent then this education sector must be revisited, training must be more extensive, links with firms much closer and steps must be taken to develop a more collegiate approach between firms in industries with similar training requirements.

The whole of higher and further education must place a keen focus on business growth and regional development. Universities must see themselves as key facilitators of regional development and not necessarily the region in which they are situated although that is a good starting point. Funding should follow both relevance and results.

Networking

To-date there has been a tendency to establish business parks and industrial estates to help with infrastructure planning and cost-effective roll-out. Without discounting the development of business parks it is clearly important to focus more specifically on the siting of businesses in similar industries around centres of research and expertise to

facilitate technology development and transfer. Locating similar emerging businesses in dedicated business hubs could be relevant. Research suggests that benefits could accrue from encouraging collaboration between larger firms and their suppliers.

Benefits could also be derived from experimenting with the development of standing conferences of multidisciplinary sector-specific commercial, HVMC and university sector expertise to exchange knowledge and prepare for future business ventures.

A general theme in the section is that in all respects networking between commercial interests and universities must improve significantly if the UK is to recover ground lost in all commercial areas of science and technology and manufacturing of all kinds on which regional recovery most clearly depends. Government clearly has a major role to play in facilitating this transformation.

Ownership and capital culture

If being an independent firm and remaining independent for as long as possible is the key driver of innovative capacity then it is important that firms should be encouraged and enabled to remain independent.

A dual share system allowing initial owners to retain a degree of control while enabling a wider pool of investors to reap financial benefits should find a champion in Government. A properly constituted regional development bank could be granted powers to offer loans, equity investment, loan

guarantees or interest support depending on the nature and size of company and proposed investment. The creation of technology hubs or institutes could help support emerging businesses and reduce their dependence on development capital.

Improved protection from foreign and hostile acquisitions and from the more subtle abuses of dominant market positions are important. Regrettably the necessary provisions contained in the National Security and Investment Bill seem to have been lobbied into retreat.

New thinking on issues in this section should be informed by a review of the cultural and institutional factors affecting the behaviour of independent firms.

Taxation

Tax incentives for regional investment can be facilitated by freeports and enterprise zones which should be configured in widely defined areas to facilitate the requirements of individual firms. Such zones should provide extra exemptions from corporation tax for a range of expenses, offer shorter capital write-off periods, NI exemptions, reduced corporation tax rates and extended tax payment regimes. The effects of such measures would be monitored and shaped according to effectiveness

In return for special tax benefits or capital support (as referred to above) the Government may wish to take a shareholding or a golden share preventing sale and relocation without permission. There is a view that such protection dissuades investment nevertheless it would seem a justifiable

option in return for state support and commercial advantages.

Infrastructure

Infrastructure is often discussed in terms of gigantic road, rail, power supply and infrastructure programmes but if the task is to increase business activity in the regions then the specific needs of attracting and retaining business may well involve a mix of infrastructure components that may look very different depending on the businesses involved.

The impact of Covid-19 on long-term work habits is not yet clear but changes could be quite radical. The infrastructure demands of existing regional businesses and households and the consequences of changes much further afield must be assessed: changed traffic flows could ease road and rail congestion; greater homeworking could change the locations and timing of power supply requirements and internet bandwidth demands could be affected in many different ways. The impact of changed conditions and possible additional demands of new businesses require consideration across the utilities. More joined up and agile operational responses must be developed to accommodate the possibility of changing requirements.

A similarly responsive approach is also required from public and private sector providers of the social infrastructure consequent on regional economic development.

Government as client

It is essential that UK Government bases its own technology

and manufacturing needs on UK businesses wherever possible in order to develop a stable nucleus of demand for viable, innovative products.

The Government should ensure that all departments appreciate the responsibility they bear for developing and managing its British-first policy as a facet of UK business development. Government departments must be required to ensure familiarity with British suppliers, provide them with a good understanding of relevant operational circumstances and review current offerings with them identifying problematic and beneficial aspects.

All suppliers who offer evidence of good competence should have a reasonable expectation of winning bids at some level that will enable them to gain a better understanding of the Government client and provide the client with the opportunity of making an operational assessment of the supplier's potential. Tendering processes should not contain expectations of supplier-side drafting that could only reasonably be expected from a seasoned supplier. In part, Government contracting should be seen as contributing to business development where the contractor appears capable of reaching the necessary standard.

The Government procurement policy must embrace start-ups and small companies including those in technical fields. Special effort must be made to reach out to new companies that show real intent, imagination and the capacity to develop. Additionally, Government contracts are not always seen as the most attractive position and failure to connect may constitute a lost opportunity for both parties [\[19\]](#).

Independent supplier surveys should be undertaken to explore tendering and contracting experiences and thorough reviews should be undertaken of the way departments handle suppliers both in the tendering and contracting elements of the relationship. Results of such surveys should be made public.

If it is intended to make Government a more approachable client then it is important to ensure that the rules governing the involvement of civil servants, ministers and advisors are transparent and prevent personal gain. This will not safeguard the system from poor performance by some new entrants to the Government market place. It is unacceptable, however, to minimise that risk simply by shielding client-side actors behind an exclusive club of major names.

Government as entrepreneur

The Government's role as client and facilitator is aligned to numerous innovative fields, such as: healthcare; renewable energy; digital technology and military aircraft [\[20\]](#). Other fields are moving into new phases of innovation of relevance to the UK including agriculture.

US-style multi-agency, business-linked research and development programmes such as DARPA offer major commercial opportunities and are gaining prominence in the UK. The Government has established a number of business focused research programmes, most recently the ARIAL initiative. It must be accepted that there will be failures but American experience has also demonstrated success. The key shortcomings of such programmes can include being too focused on academic interests and limited in the choice of institutional partners.

Innovation is not, however, wholly or mainly prompted by research programmes. Recognition should be afforded to the many innovative developments that were based on proven technology used in new ways, then subjected to repeated cycles of product development. In normal circumstances the Government's role as entrepreneur should be alert to the R&D support needs of product development, particularly involving emerging businesses, rather than attempt to dictate the course of business innovation.

Where the Government is the effective client about to embark on a major spending programme that offers product development opportunities or cannot be accommodated by existing UK suppliers then Government must signal its intentions and lay the groundwork for an appropriate UK business response using the various levers discussed.

A recent review by Kundu, James and Rigley[\[21\]](#) suggests a consensus over the importance of public procurement in promoting innovation and technological development. It cautions, however, that public procurement as an innovation policy tool has only been applied in a few countries and a few contexts. Furthermore, the academic literature on the subject rarely addresses questions on impact. This emphasises the need for Government to ensure rigorous evaluation of implementation and continuous development of the methods used.

The remarks made in the previous section about client-side rules of engagement also apply here.

Government as employer

Government should devolve whole departments and major divisions of departments to the regions. This is not just a matter of exiling low skill jobs to the regions but of relocating senior management and ministers to help inform Government of regional circumstances and signify the arrival of national not London government. In the new world most central decision-taking could be undertaken from a regional location. Some steps are in progress, much more is required.

6. Conclusion

Levelling-up the regions is a long overdue vision to provide opportunity for communities that are experiencing the continual loss of talent to London and the South East leaving behind communities that are increasingly less vibrant and self-supporting than they should be. The vision requires tremendous energy and commitment in the face of vested interests that will inevitably resist. If it is to be accomplished then the PM must play a key role in ensuring that the commitment remains intact, the vision is fully developed, the Government's framework for action is prepared and implementation is relentless.

Recent studies of innovation, productivity and growth offer direction for the levelling-up agenda. They help identify structural and cultural challenges that must be addressed if successful outcomes are to be achieved and form the basis of this paper.

It is suggested that regional location should become a prime requirement for business incentive schemes and business development initiatives. Further consideration of

infrastructure requirements may also be appropriate in changing circumstances. A drive towards reshoring some margin of production to the regions should help achieve greater economic resilience in the face of an uncertain world although an innovative, high productivity approach would be required to achieve viability.

Universities should be encouraged to forge ever stronger links with business. Specialisms available in universities and university hospitals must be matched with the vision and know-how of emerging firms and industrial sectors. Industries should be supported by R&D programmes devised and undertaken in collaboration with universities, HVMCs and where appropriate new specialist technological institutes.

This approach should be capable of achieving intensive multidisciplinary working between the academic and commercial worlds. At best, the aim should be to encourage teams working on projects in similar fields to share experiences and expertise, and to collaborate on business ventures where opportunities arise. Where common interests apply, established firms should be encouraged to offer emerging firms partnership working, mentoring and financial support. Technical colleges must reach out to shape the training experience around the needs of local employers and training input must be life-long.

Public sector funders must be alive to the areas of new interest to business rather than squeezing business into a preordained vision of the future. Where new Government requirements drive innovation then UK business must be engaged at the outset and appropriate business development strategies should be put in place to encourage new independent businesses to engage with the opportunities presented. Government should also act with diligence as a client of routine goods and

services to promote emerging businesses and those businesses that are simply new to the Government marketplace. Tendering specifications should be designed specifically to include those without practice in government tendering processes even though that may marginally increase risk and make assessment more arduous.

The protections afforded to business ownership must be reviewed together with the funding and taxation of emerging and medium sized businesses. Anticompetitive behaviour of all kinds must be rigorously discouraged.

Government should also emphasise its regional commitment by relocating most of Whitehall to the regions, using digital technology to become a modern networked operation.

The Government must now publish a long-term, wide-ranging and imaginative plan for levelling up the regions through a process of business development, prioritising support for innovative businesses and independent firms with the objective of securing improved productivity and growth. Inevitably the plan will need revising as experience develops but the objective must remain the creation of opportunity for regional communities.

It is time to move from slogan and gesture to a clearly delineated course of action. The current circumstances would have been chosen by no-one but a response of this nature would be very timely.

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[1]

https://insight.jbs.cam.ac.uk/assets/2015_cbr-report_macro-economic-impact-of-liberal-policies-in-the-uk.pdf

[2]

<https://commonslibrary.parliament.uk/research-briefings/sn06924/>

[3]

<https://policyexchange.org.uk/wp-content/uploads/2018/07/Brexit-and-the-British-Growth-Model.pdf>

[4] <http://theses.gla.ac.uk/79042/1/2020BradleyPhD.pdf>

[5]

<https://www.oecd-ilibrary.org/docserver/9789264304604-en.pdf?expires=1615479892&id=id&accname=guest&checksum=50316E0BBC9A43B0F84FD7631499EE9F>

[6]

<http://speri.dept.shef.ac.uk/wp-content/uploads/2018/11/SPERI-Paper-No.6-The-UKs-Innovation-Deficit-and-How-to-Repair-it-PDF-1131KB.pdf>

[7]

https://demosuk.wpengine.com/files/Entrepreneurial_State_-_web.pdf?1310116014

[8]

<https://www.gov.uk/government/news/bill-introduced-to-create-high-risk-high-reward-research-agency-aria>

[9] The Innovator's Dilemma (Harvard Business Review Press)

[10]

<https://policyexchange.org.uk/wp-content/uploads/Visions-of-Arpa.pdf>

[11] The

Smartest Places on Earth (Public Affairs – HBG)

[12] Prosperity

(Oxford University Press)

[13]

https://www.ecb.europa.eu/pub/pdf/other/mb201307_focus06.en.pdf

[14]

<file:///C:/Users/fello/Documents/Innov%20&%20Business%20Devel%20in%20UK/Academic%20&%20Think%20Tank%20papers/IMF%20Corp%20Mkt%20Power%20Mar21.pdf>

[15]

<https://www.mta.org.uk/system/files/resource/downloads/Level%20Up%20Industry.pdf>

[16]

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957856/Skills_for_jobs_lifelong_learning_for_opportunity_and_growth_web_version.pdf

[17] <https://www.british-business-bank.co.uk/>

[18]

<https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth/build-back-better-our-plan-for-growth-html>

[19]

https://rusi.org/sites/default/files/op_202003_the_challenge_of_change_web.pdf

[20]

https://rusi.org/sites/default/files/tempest_programme_final_web_version_0.pdf

[21]

<https://academic.oup.com/spp/article-abstract/47/4/490/5903068>

[?redirectedFrom=fulltext](#)