CONSTRUCTING EXCELLENCE

Unlocking Productivity

Survey report on the current state of the industry as we head towards 2025

Foreword

We are in the midst of a global digital revolution which is transforming the way in which people and businesses connect, transforming the potential of businesses to innovate and improve their productivity. Information and data are opening doors for a wide range of industries to advanced analytics to monitor performance and drive improvements in productivity through innovation.

The global digital revolution offers immense possibilities to foster innovation and improve productivity in our sector. Building Information Modelling (BIM) and the Internet of Things (IoT) are the two most obvious areas which are beginning to encourage more innovative ways of working.

However, the findings of this report show that for our sector, the real challenges to improving productivity remain at a more fundamental level. This will come as no surprise to seasoned observers and the issues have been recognised across the sector for many years. Improving collaboration across the supply chain, addressing the way in which we procure projects, clients being able to demonstrate leadership to foster innovation and addressing the 'cultural and behavioural' issues which undermine progress are challenges we have been grappling with for decades.

Not only do these grass roots issues require collective collaboration across the sector to finally resolve them, but also completely new skills are to be developed urgently if we want to increase our industry's data literacy in order to realise the immense opportunities brought to us by data science.

With the role of Chief Construction Advisor gone and the Construction Leadership Council dwindling, the industry lacks the strategic leadership to drive the move towards increased productivity.

Our challenge as Constructing Excellence is to find a way to work with government in a collaborative way to overcome these barriers and meet these challenges head on. Our raison d'etre is to drive the change agenda and to improve industry performance. Constructing Excellence's role must be one where we work constructively with government to develop the framework which in the long-term promotes, fosters and maximises innovation and improves productivity.

At the same time, we also need to work with and challenge the sector to address the challenges that we know are currently holding us back.

As an organisation and as a movement which represents the construction and built environment sectors in the broadest sense, we commend this report and challenge government and those we represent to meet these challenges together. If we can do this, our industry can play a central part in delivering the possibilities of the fourth industrial revolution.

Antonio Pisano
Co-Chair G4C 2014-15

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G4C
CONSTRUCTING EXCELLENCE

Introduction

In the five years between 2010 and 2015 we saw the UK move from a period of unprecedented economic uncertainty caused by the global financial crisis to one of renewed optimism as the economy returned to steady growth. Whilst the road has not always been completely smooth, construction has benefited from the return to growth. Figures released in July this year confirmed that the industry has posted year-on-year growth for 23 months in a row.

From the UK construction industry's perspective, that period of coalition government is one which will be remembered primarily for the focus on efficiency savings on public sector projects. The 2011 Government Construction Strategy's headline was to reduce construction costs by 20% while Construction 2025 broadened the scope to improve efficiency across project delivery times and whole life costs. Both strategies also emphasised the role Building Information Modelling (BIM) will play in delivering these objectives and promoting a greater degree of collaboration across construction supply chains with the aim of improving efficiencies.

Now that we have a return to single party government following the recent General Election the priority remains economic growth and deficit reduction. Growth in the economy comes either from more employment or from higher productivity and given that employment has been on an upward trend for some time, the tone has shifted towards improving productivity across the economy.

In doing so, the government published its productivity plan, *Fixing the Foundations*, in July 2015 with the aim of increasing productivity to improve the public finances and underpin rising living standards. The government's approach to raising productivity is built around two pillars of encouraging long-term investment in economic capital, skills and knowledge and promoting a dynamic economy that encourages innovation.

There are extensive opportunities for the UK construction and engineering sectors as a result of significant investment in new and existing infrastructure through to 2025 and beyond. Government efforts have also helped to boost private finance helping the UK enter the top 10 most attractive markets for infrastructure investment.

The Government's Construction Pipeline has been developed to provide greater certainty to the supply chain to improve skills and recruitment planning, smooth out peaks and troughs and to encourage innovation. As a global market player, we need to ensure that we stay ahead of the game. Yet despite a number of successful projects in the last few years leading to growing confidence in the UK construction industry, overall productivity and performance are perceived to be low leading to costs in the UK being greater than our EU counterparts.

Earlier this year, Constructing Excellence held the first of a new series of breakfast roundtables with Geoffrey Spence, chief executive of Infrastructure UK, as the introductory speaker. In light of the project pipeline through to 2025, the event focused on how the UK should deliver these projects. The discussion covered a range of topics and arguably the most relevant part of the discussion for Constructing Excellence was on innovation and capability.

Mirroring the government's principles for addressing productivity, it was concluded that innovation is necessary for greater efficiency and therefore productivity. However, it was also acknowledged that there are many barriers to increasing levels of productivity.

In a further roundtable discussion attended by Constructing Excellence with the Treasury, the focus turned to the question of *"How can industry develop and share best practice and what is the role of Government to encourage this?"*

The challenge therefore is to identify and understand these challenges in order that they can be addressed in a way that drives industry towards exceptional performance.

Therefore, this study was conducted to provide a snapshot of what these barriers to innovation, and hence productivity, are from the industry's perspective and to provide an indication of the ways in which the sector believes these issues can be addressed.

Method & Sample

This report has been prepared by Project Five Consulting on behalf of Constructing Excellence to summarise the results from a survey carried out between May and July 2015.

The survey was designed to gather industry perceptions on the barriers to innovation, and hence productivity, and to provide some insights into the root causes of – and potential solutions to - those barriers.

The survey was conducted in two parts:

1. Respondents were asked to rate, on a scale of 1 to 10, how productive they believe the UK construction industry to be.
2. Respondents were asked to select the three greatest barriers to performance from a select list with an opportunity to explain their reasons.

The outcomes of the research capture at a glance the views of the industry as to where they believe we face the greatest challenges heading towards 2025 and achieving the objectives set out in the Government Construction Strategy.

156 responses

50% members of Constructing Excellence

38% members of a Constructing Excellence Club

Results

How productive do you believe the construction industry is?

Given that the present government's focus for the economy is growth underpinned by improved productivity this study set out to gauge perceptions of how productive the industry is.

Respondents to the survey were asked to give, on a scale of 1 to 10, a score of how productive they believe the UK construction industry to be.

Two thirds of respondents replied with a score of six out of ten or less.

The remaining third rated productivity between 7 and 9 out of 10, while not a single respondent felt the industry was worthy of full marks.

The most common score, which was given by over a quarter of respondents was 6 out of 10.

Given that Sir John Egan in 2008 gave the industry a score of 4/10 against progress since 1998 it's clear that in eyes of respondents to the survey, the industry has not moved on much in the last 17 years.

In some respects, the response to this question is unsurprising. Despite the government's aspiration to promote a greater level of collaboration, particularly with the aim of improving efficiency on the delivery of public sector projects, anecdotally the industry is still perceived to be adversarial in its approach to projects. The result is that the potential efficiencies which could be achieved through a greater level of collaboration across supply chains remain out of reach.

The implementation of processes around Building Information Modelling (BIM) are starting to foster greater levels of collaboration as we move towards the deadline for BIM level 2 in March 2016. However, progress is patchy at best and while BIM will ultimately be part of the step change the industry needs to make, it is not the silver bullet and there are a multitude of issues that need to be accounted for to address the barriers to greater productivity.

Barriers to performance

The next stage of the survey was to identify the key barriers holding the industry back from achieving greater productivity. Therefore, our survey asked participants to identify the three most important barriers to improved performance. There were 16 barriers to performance which we asked our respondents to rate:

- Procurement practices
- Forms of contract
- Supply chain engagement
- Availability of skilled workforce
- Lack of research and development
- Pipeline of work
- Poor information management
- Role of Client
- Risk adversity
- Collaboration
- Leadership
- Culture and behaviour
- Economy
- Technology
- Legislation and regulation
- Government Policy

The top four barriers to performance which were identified by survey participants were:

- Culture and Behaviour
- Procurement Practices
- Availability of Skilled Workforce
- Role of the client

These four barriers were by far and away the most significant barriers identified by the survey participants. Nearly 50% of respondents identified the Culture and Behaviour within the industry in their top three barriers, followed by Procurement Practices (42%), Availability of Skilled Workforce (30%) and Role of Client (26%). Figure 1 illustrates the percentage of respondents who rated each of the 16 barriers as one of the three most important barriers to improved performance.

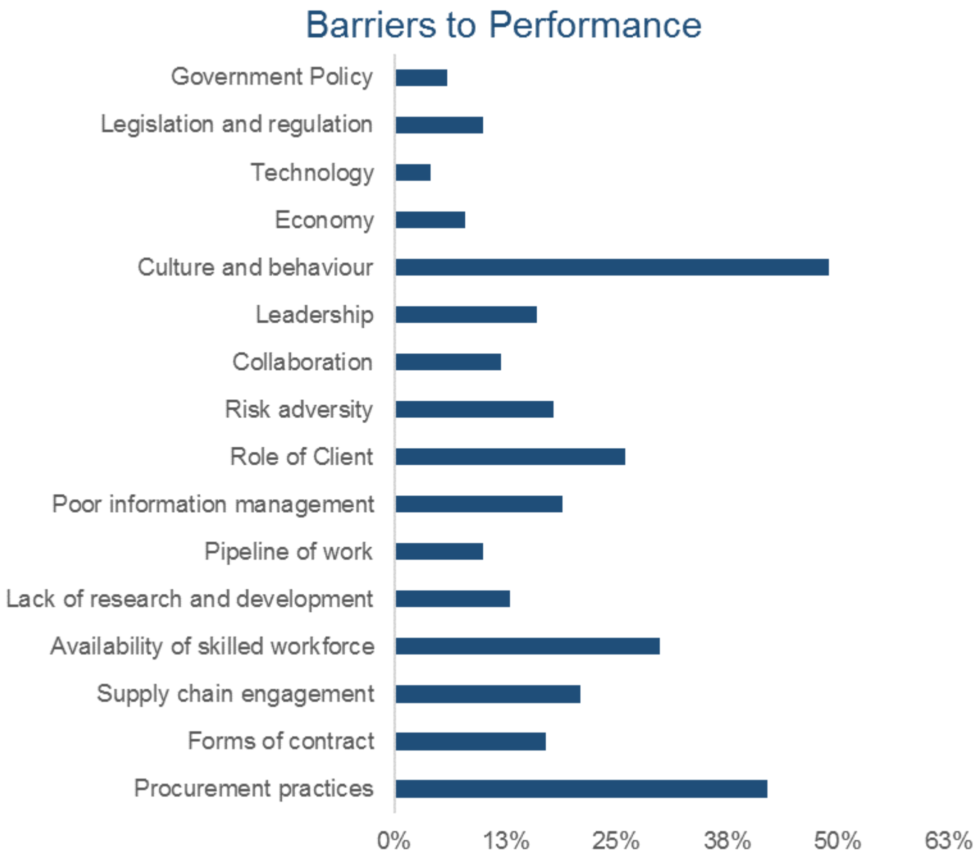

Figure 1. Percentage of respondents who rated each of the 16 barriers as one of the three most important barriers to improved performance

Other key barriers which were identified from the survey were:

- Supply chain engagement (21%)
- Poor information management (19%)
- Risk adversity (18%)
- Forms of contract (17%)

The barriers which were rated in the top three barriers the least and therefore could potentially be considered the lowest priority were:

- Legislation (10%)
- Government policy (6%)
- Technology (4%)
- Economy (8%)

Discussion

This survey provides a snapshot of prevailing attitudes and beliefs within the industry based on a sample of professionals engaged in the Constructing Excellence network representing national players, construction clients and other organisations across the supply chain.

Many of the findings are only too familiar. But what is clear is that there is no single barrier to encouraging innovation and improving productivity. Indeed many of the issues identified in this report and which the industry faces are interlinked.

Culture and behaviour

Culture and behaviour was seen as the greatest barrier to performance. Nearly half of our survey participants rated Culture and Behaviour in their top three barriers.

This is a broad and complex topic encompassing a wide range of issues. The culture of the industry reflects the shared experiences, attitudes, beliefs, knowledge and values which have been shaped over a significant period of time.

As such there are a complex range of responses provided by our survey respondents to explain and justify the selection of culture and behaviour as the greatest barrier to performance. Many of these responses provide clear links with some of the other barriers and common themes that have emerged from this survey.

Issues relating Culture and Behaviour which were cited as reasons for people's choice included:

- An industry that does not encourage innovation in the same way that other industries do;
- A sector characterised by insufficient drive and desire to change;
- A lack of '*leadership*' as opposed to '*management*' skills within clients and main contractors;
- Traditional working practices focused on lowest price and adversarial working practices leading to wasteful transactional relationships across the supply chain;

The reason most frequently cited for Culture and Behaviour being identified as the most important barrier was a lack of collaboration across the supply chain. While this is perhaps no surprise, there are a number of underlying issues relating to collaboration that respondents elaborated on. These included:

- A lack of understanding of how to promote collaboration and to embed it within project teams;
- Forms of contract and commercial arrangements which do not promote collaboration;
- The fragmented nature of the industry.

Furthermore, the survey demonstrated that participants felt that the lack of collaboration hinders opportunities for knowledge sharing and thus innovation. In addition it can also lead to poor information management despite BIM driving a more collaborative approach to information management.

It was also clear from responses here, and from other research sources, that many in our industry want to work towards a '*right first time*' approach. However, it was identified here that all too often, clients proceed to contract with a form that *'spends more acres of verbiage dumping risk and pre-apportioning blame*' for when things go wrong than trying to get it right in the first place.

This links with the fact that a lack of trust was highlighted as one of the reasons which can undermine approaches to collaborative working.

Lack of risk sharing leading to contractors cost inflation was also identified as an issue that is entrenched in our culture and behaviour leading to projects being priced by contractors to cover most eventualities with contractors looking for claims opportunities at every occasion.

Clients also factored in this category and were identified also as the fourth greatest barrier to performance overall. Respondents reported that it is difficult to challenge clients and contractors away from adversarial practices and that a '*make money now*' attitude with too much focus on capital costs and not enough on life cycle costs leading to an unwillingness to invest.

Respondents also commented that too often clients have insufficient strategic focus and do not work with their supply chains to help them understand their business need and what drives value for them.

In many respects Culture and Behaviour can be seen as a catch all term for a range of issues that underpin some of the key barriers identified. It is perhaps the umbrella under which all of the issues that hinder innovation and thus productivity can be grouped.

Procurement Practices

Procurement Practices was perceived as the second greatest barrier to achieving greater performance. A number of new procurement methods were launched as part of the Government Construction Strategy back in 2011 and have been trialled over the intervening period.

Research carried out by Project Five Consulting in 2015 looked at whether the Government Construction Strategy has been successful in improving procurement in the UK construction industry and assessed levels of satisfaction across the supply chain.

The findings were less than supportive with many of the issues with procurement reflecting those reported here. In particular, frameworks have been highlighted as a major contributing factor to performance.

Other procurement issues identified during this survey included:

- Procurement processes which are time consuming and timetabled so that there is insufficient time to identify improvements thus stifling innovation;
- Procurement methods which create barriers to collaboration and incentivise poor behaviour;
- Procurement routes which still focus on the delivery of projects at lowest cost rather than on quality and value as a result of time and money being the key measures of performance.

The delivery of projects through construction frameworks also attracted comments around a number of common themes, including:

- Frameworks prevent local businesses from accessing project work which might otherwise suit them;
- Framework projects going to small number of large contractors;
- Tick box arrangements on frameworks that do not take into account skills, expertise and culture of organisations

Availability of Skilled Workforce

Skills and training is an issue that has been high on the agenda for the industry for a number of years. So it is no surprise that the availability of a skilled workforce was the third most important barrier.

Respondents identified problems with the availability of skills across all levels of the supply chain, including:

- Clients, who have lost key technical skills as well as skills around procurement and collaboration;
- Professional services;
- Site staff and trade-specific skills shortages; and
- Project management.

The main barriers to recruiting a skilled workforce identified by the survey participants included:

- The image of the industry being insufficiently attractive to new entrants, particularly young people.
- A lack of promotion via schools into the more skilled professions as opposed to white collar professions.
- A lack of investment in this area leading to a shortfall of resource.
- The short term nature of projects which discourages investment in apprentices.

The construction industry has lost 350,000 people since its peak before the recession. With widely accepted predictions that the industry is set to lose another 400,000 people over the next five to ten years, through people retiring or otherwise leaving the industry, this is a problem which needs urgently addressing as the construction sector is operating at well under its full capacity. It is estimated that in England, the industry will need to recruit 68,800 qualified new recruits each year for the next five years in order to replace those who retire or leave the industry.

In the last 12 months, output within the construction industry has grown by 7.4%. This trend is expected to continue illustrated by an estimated growth figure of 3% for 2015. This growth has provided the sector with a wealth of work and a boost of much needed confidence. However, the unforeseen upturn has left many short in regard to labour. One in eight employers reported that in 2014 they did have not had enough suitably skilled workers to support their increasing order book.

There is also a shortage of white collar worker workers and thus more needs to be done to attract students to study construction industry related undergraduate and postgraduate degrees such as quantity surveying. However a recent report (Student Trends) reports that despite the steady rise in student numbers, the UK remains behind many competitor countries in terms of the percentage of highly skilled individuals in its workforce and that figures for 2012–13 enrolment, suggest that this gap may be set to widen if the number of home students applying to university declines.

The Construction 2025 strategy set out a number of ambitious targets for the construction industry to grapple with over the coming years. With a heavy focus on becoming a more efficient and technologically advanced sector, one aspect in the strategy that needs further attention is that of attracting a talented and skilled workforce to the industry to enable this to come to fruition. The industry currently employs 2.9 million people. Since 2011, employee turnover figures have continued to increase within the industry. These figures highlight an opportunity for businesses to naturally grow their labour resource through improved retention of their employees. As demand for people rises putting increasing pressure on the labour market, how then do we tackle the problem and encourage new talent to the sector

Role of the Client

Given that responses to this survey were focused on Constructing Excellence's membership it is perhaps unsurprising that the role of clients would be the subject of some discussion. Snapshot surveys of this nature will always include an element of blame shifting and participants time and again identified the role of the client as a key barrier in driving change and innovation.

Leadership in industry starts with clients

Many of the reasons given for the client's role constituting such an important barrier (over a quarter of respondents included Role of the Client as one of their top three barriers) are interlinked with the other top three barriers.

For example, the main reasons cited included a lack of knowledge within clients around effective procurement. A number of these specific issues were identified in the Procurement Practices section.

Furthermore, a lack of understanding at client level of how to promote collaboration and implement collaborative working techniques was highlighted within the comments around Culture and Behaviour.

Finally, respondents specifically highlighted clients' approaches to the management of construction supply chains as a key barrier which can lead to adversarial relationships.

While most would acknowledge that addressing innovation and productivity across the industry has to be a collective effort focused on common goals, it is also clear that clients have a key role to play in driving improvements.

Respondents suggested that clients have a key role in promoting the early engagement of supply chains on projects, which is viewed as a key factor in being able to promote innovation, and hence improved productivity across supply chains.

Clients are also key in the effective implementation of BIM on projects through the development of Employers Information Requirements, for example and setting the strategic direction of information management. A core component of delivering these approaches to improved productivity is, of course, collaboration; and clients have a key role in engaging supply chains in a collaborative way at an early stage in projects.

Summary

There is no single barrier to encouraging innovation and improving productivity within the UK construction industry. Indeed as the findings of this report have shown, many of the issues we are facing as an industry are interlinked.

In many respects the findings will come as no surprise to seasoned observers. The issues that have been identified and discussed are certainly not unique to this survey but are recognised across the sector and have been for many years. They are also deep rooted and as such will be extremely difficult to change. This is reflected in the fact that two thirds of survey respondents rated the industry's performance at 6 out of 10 or less.

It should also be noted that there is no specific measure of productivity for the construction industry to measure year on year changes beyond the ONS figures for employment and economic output. At a fundamental level we need to focus on how we measure industry productivity and how we can use this information to help drive continuous improvement.

The survey results suggest very strongly that institutionalised approaches to procurement and project delivery, encompassing the whole supply chain, do not drive increasing productivity effectively within construction.

This is reflected in '*Culture and Behaviour*' within the industry being found to be the main barrier to increased productivity. In many respects this is the overarching theme which encompasses all of the key themes which have been identified as important to address the issue of innovation and productivity, including Procurement Practices and the Role of the Client.

The institutionalised '*Culture and Behaviour*' which holds the industry back needs to be addressed through clear leadership, both at the strategic level and within supply chains. Where strong leadership is shown, for example by clients on major projects, the UK can hold its head high. The Olympics and Terminal 5 are held up as exemplars and the thinking has been shared and adopted by other clients in utilities and transport. These organisations are investing in developing their leadership, asset, programme and supply chain management capabilities.

The thread that seems to binds all of these themes together, based on the responses from our survey participants, appears to be collaboration. However, collaboration as an individual barrier was rated in the top three barriers by only 12% of survey respondents. However, it was cited again and again as a key component of addressing the most important barriers which were identified.

Leadership at all levels is essential to drive collaborative outcome based approaches throughout supply chains. However, there is limited training and development in industry leadership, as opposed to 'management'. What we need is an understanding that collaboration and integration could also lead to lower risks than the traditional approaches.

However, collaboration and integration are difficult to superimpose on procurement models which are based on competitive tender and are transactional by nature. This in turn is reflected in commercial behaviours which focus on adversarial approaches. Again, there are positive examples of relational contracts as opposed to transactional ones although this is not widespread among clients and these tend to be focused on one off projects and those for delivering capital programmes within an asset management environment. The challenge is how these good practices can be encouraged and adopted more widely so that procurement caters for innovative approaches through closer collaboration.

This will primarily be driven by client leadership and capability, by clients being well informed, well led, and not driven by institutionalised practices and the client community being more consistent as an industry body. Leadership begins with the client and suppliers will by their nature adapt to differing approaches. The alternative is that poorly informed clients get the supply chain they deserve.

The one theme identified within this report which does not naturally fall under the '*Culture and Behaviour*' umbrella is the availability of a skilled workforce. The industry has a fundamental challenge to address the looming skills gaps across the supply chain. It was a key theme of Construction 2025 and must link closely with the work of CITB and the government's wider approach to promoting the skills agenda and its much trumpeted apprenticeships programme.

Strategic skills planning for the industry needs to focus on the priorities for the future taking into account the challenges that this survey and other reports have identified. In this context we should note that Infrastructure UK will issue a national infrastructure skills plan during the latter part of 2015.

Interestingly, the barriers rated in the top three by the fewest participants (and which could potentially be considered the lowest priority) were Legislation (10%), Economy (8%), Government policy (6%) and Technology (4%). This suggests that the external political, economic and legislative framework in place is one that works and is stimulating growth for the industry.

Government interventions such as the National Infrastructure Plan, the BIM mandate, Construction 2025 and the Infrastructure UK Route-map are strong platforms on which to build. However, a new industry business model will be required to drive industry to "*exceptional performance*".

The construction strategies have set some challenging targets for industry to achieve. The sector is by nature reactive rather than proactive and therefore needs clear leadership. If the external framework is right, as the survey suggests, then it is the internal factors – the '*Culture and Behaviour*' – that need to be the focus.

This report has identified what Constructing Excellence's membership believe are the priorities and as we have already acknowledged, they don't really come as a great surprise.

Unless we start to make significant changes in the way we work together these barriers will continue to exist. The respondents to this survey have verified that they continue to exist despite previous efforts to improve.

Given the opportunities that exist between now and 2025 through the government's published project pipeline, a more stable economic outlook and the improvements that the approach to BIM can potentially bring to project delivery, many of the ingredients for improving productivity within the sector are in place.

There are some excellent examples of innovation and good practice, particularly the utility industry where productivity is measured to support commercial arrangement that drive and encourage continuous improvement. There are also examples in the retail and transport sectors where the product is repeated and standards well established.

Without clear leadership, however, we will fail to inspire the industry to learn from these good practices and make the necessary changes which we believe will improve the productivity of construction. With the role of Chief Construction Advisor gone and the Construction Leadership Council established to drive Construction 2025 forward dwindling, the industry lacks the strategic leadership to drive the move towards increased productivity.

Without this strategic leadership the challenges in this report will perhaps remain just that: challenges.

Constructing Excellence wants to work with government in a collaborative way to overcome these barriers and meet these challenges head on. We want to meet the need for strategic leadership and carry on promoting our core principles to continue to drive the improvement journey the industry is on.

We see our role as working alongside policy makers to further develop the industry's routemap for major projects and to promote good practice. Constructing Excellence wants to help government build a consistent and effective client approach which supports innovation and maximises productivity.

With Constructing Excellence fulfilling this strategic role alongside government we believe we can start to address these barriers to performance, to provide the required leadership and inspire change.

The government's productivity plan perhaps captures the findings of this report and the widespread acceptance of the issues facing the construction industry:

"…the challenge has not been to understand what to do; the challenge has been to be bold enough… to take the difficult decisions required to deliver this whole-heartedly. That must now end."

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