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The Transformation of the UK Water Industry

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Abstract: An exploration of the transition of public water supply services from the hands of the Public Sector into the Private Sector, accompanied by the establishment of the independent regulatory bodies within the United Kingdom, and how the UK experience of Privatisation might inform and assist delivering the objectives of Water Sector Transformation 2040 (WST2040)[1].

This paper will consider whether Privatisation has achieved the primary objectives of improving efficiency, meeting water quality standards and reducing the financial burden on the Public Sector, while introducing competition across the sector.

It will also ask the question "Which elements of the UK industry experience could address the critical aspects of the Malaysian water landscape going forward?"

Keywords: Sustainability; Economics; Regulation

1. Introduction

The author's practice predates the privatisation of the water industry in England and Wales in 1989, being able to observe the evolution of the UK water industry as an industry practitioner since 1973, witnessing the transformation firsthand from the underfunded and inadequate provision of water services under the management of UK Public Sector local government bodies, to the highly regulated, innovative, environment and customer centric, profitable PLCs existing today.

While the Water Act 1973[2] coalesced the more than 1,500 water management bodies in England into ten Regional Water Authorities, each charged with integrating water management within designated geographical areas, it was the Water Act 1989[3] that delivered the transformation from Public to Private ownership, with those 10 Water Authorities privatised and established as limited companies, owning the assets they operated.

Privatisation aimed to improve investment to reduce the financial burden on the public sector, enable regeneration of aging infrastructure and meet the water quality standards mandated by the European Economic Council Directive 80/778/EEC of 15 July 1980[4], while enabling competition in a stagnant sector.

The Water Act 1989 also established the principle of regulation independent from the service provider, with regulatory bodies established to oversee the Environment (The National Rivers Authority, to become the Environment Agency), Water Quality (The Drinking Water Inspectorate) and Economy (Office of Water Services)

The economics of each water company are negotiated with the Office of Water Services (Ofwat) in 5 year Asset Management Plan (AMP) cycles, where the price review balances investment needs against affordability and where customers are asked to consider what incremental improvements to their standards of received service and environmental husbandry they are willing to pay for; as we embark on the 8th iteration of the 5 year AMP process we can ask "has the experiment met the goals?"

2. Relevance to ICWR2025[5]

The 6th International Conference on Water Resources 2025, invites presentation of papers related to the theme "Embracing Change For A Resilience Future In Water Resources" suggesting contributions from the areas of Catchment Management, Water Supply and Economics amongst others; illustrations of how the transformation of the UK water sector relates to these selected areas, the wider Malaysian water sector and the objectives of WST2040 are explored here by broadly evaluating a limited number of criteria with which to judge success in delivering efficiency eg. Leakage Reduction, Per Capita Consumption and Supply Interruptions, meeting water quality standards eg. Compliance with EEC and UK legislation on potable water standards and finally, reducing the burden on public finances.

3. Observation

The objectives of WST2040, Water Security and Sustainability and Water as an Economic Opportunity are closely aligned with the objectives of privatization of the UK

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water sector, each in its own way and expressed in the language of the day, seeks to deliver adequate water supplies that are environmentally sustainable, resilient and economically viable in a market that leverages current and emerging technologies to deliver innovative solutions in an on-going process of continual improvement.

The following illustrations are informed by the author's experience as a practitioner in the potable water sector working for Wessex Water Services Ltd[6], a regulated water utility company serving circa 1.4 million water supply and 2.4 million wastewater customers in the South West region of England.

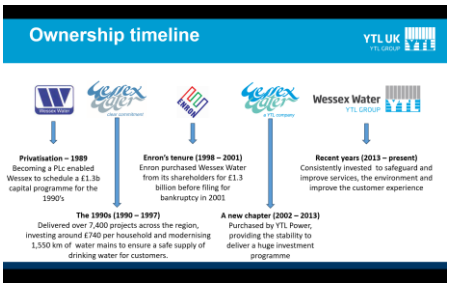

Fig. 1 - Wessex Water ownership timeline

Wessex Water Services Ltd is a leader in the UK regulated water industry, recognized for delivering outstanding levels of customer service, environmental husbandry, statutory compliance, engineering innovation and market development, it is wholly owned by YTL Power International Berhad[7]

4. Methods and Approach

Given this paper is an expression of the author's experience over 50+ years of practice in the industry, formulating the methodology and defining approach cannot easily be prescribed, rather it is based on, and limited to, the observations of a practitioner, bound by the regulatory framework of the industry as applied directly to that practice and necessarily limited by the specific experience of the author.

5. Illustrations

5.1 Delivering Efficiency

By the simple expedient of coalescing over 1,500 water management bodies into ten Regional Water Authorities, the Water Act 1973 immediately introduced some element of operational efficiency, however it was the introduction of Economic regulation under the Water Act 1989 that placed the efficiency of the newly privatised water companies under scrutiny through the offices of Ofwat.

Through subsequent 5 year Asset Management Plan (AMP) cycles since 1990, Ofwat has set financial performance targets on every aspect of water company performance, from water resource management, through operational and capital delivery efficiencies to, standards of customer service, rewarding or penalizing company financial returns directly proportional to measured performance against statutory criteria.

Each iteration of the 5 year AMP cycle since 1990 has called for higher operational and cost performance, increased capital infrastructure investment, greater environmental and customer husbandry. To give a few examples of such measures, at the completion of AMP 7, the period 2020 to 2025, Wessex Water was required to deliver the following efficiency improvements in Water Supply:-

- Leakage reduction: At least 15% reduction in leakage/non-revenue water compared to AMP6 (2015 to 2020) [8].
- Reduced consumption: A 0.9% reduction in per capita water consumption by 2024–2025 [9].
- Supply interruptions: A 59% reduction in the average duration of supply interruptions, bringing the average down to 5 minutes per customer by 2024–2025 [10].

5.2 Meeting Water Quality Standards

The introduction of European Economic Council Directive 80/778/EEC of 15 July 1980 demanded delivery of potable water standards at the customer tap beyond the capabilities of the fractured management and provision of water supply services in England pre-privatisation.

The Water Act 1989 established statutory water quality standards under the regulation of the Drinking Water Inspectorate (DWI), which mandates mechanisms for maintaining public health by prescribing water quality testing suites and frequencies, provides the overarching scrutiny of company performance and is empowered to investigate failures and affect criminal prosecutions where companies fail to meet their statutory duties.

Meeting the wholesome potable water standards at the customer tap is a given and the operational norm at Wessex Water, and delivering wholly compliant water in sufficient quantity at some margin above the minimum mandated pressure is embedded in company culture.

Always seeking operational efficiency through optimization of the water production process over the last 35 years, there is little room left for further optimization of the process post abstraction, however, where significant deterioration in source water quality has been observed for example by the infiltration of Nitrates into groundwater aquifers through agricultural farming practices, significant investment has been mandated in successive AMPs to deal with the problem and maintain water quality standards.

Mandating Nitrate reductions in drinking water, Ofwat has made capital allowances in the regulated price deal for specific investment schemes since 2005. Recognising traditional treatment solutions to remove Nitrates are carbon intensive to build and operate long-term, Wessex proposed an innovative alternative solution that it believed would meet the statutory outputs and delivery additional environmental benefits over a broader front.

That innovative solution, where Catchment Management has been accepted by Ofwat as a viable, results based, alternative solution to point of abstraction treatment. By establishing long-term studies of specific catchment characteristics, understanding the nature of activities that introduce Nitrates to the aquifer and subsequently engaging the agricultural community and funding practices that reduce the amount of Nitrate being introduced to the environment, such as planting crops that lock in Nitrates, or require less application of fertilisers , significant reductions in Nitrates measured in raw source water have been achieved, at significantly lower cost than building capital solutions.

The catchment management initiative has saved approximately £80 million since 2005 by avoiding higher treatment costs, while delivering benefits to the wider environment and has funded over £1.1 million to local farmers. [11]

5.3 Reducing the Burden on Public Finances

Pre- privatization UK water services were primarily delivered as a local government service, competing for funding from public service budgets hard pressed to provide adequate Policing, Highways, Social Care and Sanitation services.

In order to meet demanding water quality standards emerging from joining the European Economic Union and other statutory environmental protection standards the water industry had to be freed from the constraints of public finance, and privatisation provided the vehicle to uncouple service provision from the public purse, by directly linking service provision, capital maintenance and investment to customers. and, by offering a regulated return, attract the investment required to overhaul ageing infrastructure, meet customer, statutory and environmental demands and foster competition in an industry that had changed little in the last 100 years.

In the first 5 years of privatisation (1990 to 95) Wessex Water was able to invest circa £740 million in capital projects targeting mains renewal and improvements in water supply and sewerage services.

With capital investment completely decoupled from public finance, Wessex Water has throughout each successive AMP period continued to attract significant investment by demonstrating diligent service provision and asset ownership, adherence to statutory standards in operation and delivering innovative solutions to regulator approved capital investment with more cost-effective solution, such as the Catchment Management schemes described above.

By demonstrating its ability to deliver at the highest level, and maintaining investor confidence in a sector presently challenged by public concerns of environmental protection in the UK, Wessex Water has been able to deliver £1.4 billion of capital investment in AMP 7 (2020 to 25) across both supply and wastewater services, and are committed to deliver £122 million investment into water resource development alone in AMP 8 (2025 to 30) to secure long-term resilience to water supplies in the South West of England.

Privatisation has, without doubt, delivered on the primary requirement of decoupling the industry from public finances, while enabling significant capital investment.

Crucially Privatisation has not only removed the burden from public finances, it has positively enabled innovation across every aspect of the water business; in the case of Wessex Water, ownership by YTL Power Berhad has enabled it to leverage the advantage of access to a much wider knowledge base of expertise, design and delivery capacity and the early adoption of new technologies, modular design and delivery.

6. Relevance of UK Privatisation to Malaysia

This paper has been written to stimulate discussion and consideration of which aspects of the UK Privatisation journey might be applied to the Malaysian water sector and assist in delivering the objectives of Water Sector Transformation 2024.

The author recognises Malaysia starts its journey today from a much better position in many respects than did the UK in 1990. Environmental husbandry, resource management and the adoption of WHO quality standards are particularly much more advanced in Malaysia than in the UK on privatisation, whereas the success in the UK of transferring assets away from public ownership into regulated private businesses and linking reward with measured service standards, capital delivery and environmental husbandry mandated goals contrasts starkly with Malaysia's structure of asset ownership, diverse regulation and separation of capital investment from operation and service delivery to the customer.

In the author's view there are also some elements of UK regulation that have not best served the customer, investors and asset owners and Malaysia now has the opportunity to consider the best elements of a mature model in the UK and consider how each might be tailored to suit its unique requirements to ensure that provision of water services is achieved in a **Sustainable** manner that improves the environment, provides **Economic** benefit to customers, asset owners and operators without burdening public finances and develops an appropriate structure of **Regulation** to ensure appropriate standards are delivered in a framework that recognises that appropriately rewarded, diligent asset ownership fosters innovation, attracts quality investment and delivers central government aspirations.

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