BOCRA

REPORT ON

MIGRATION FOR M2M AND OTHER NON-COMPLIANT NUMBERING RESOURCES
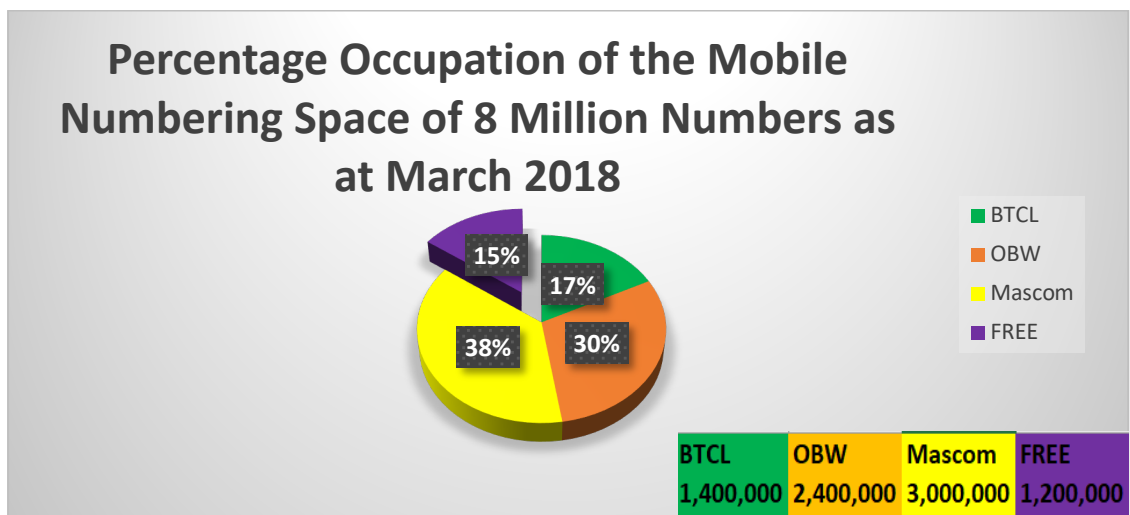

MARCH 2021

1. INTRODUCTION

1.1 In Pursuant to the Botswana Communications Regulatory Authority's (hereinafter The Authority or BOCRA) mandate, the Authority continues to make efforts to manage the scarce numbering resources optimally. The undertaking of these measures is provided for in the CRA Act of 2012, Section 38 which states that there must be an established efficient numbering system and allocation of numbering resources, and to ensure fairness in the process.

1.2 In order to align to the CRA Act, the Authority implemented the Numbering Policy recommendations. This included, but not limited to conducting the numbering audit and migration of non-compliant numbering resources.

2. OBJECTIVE

2.1 The aim of the migration exercise was to address the needs identified by the developed Numbering Policy in following areas:-

2.1.1 uptake of the identified 10-digit numbering block for M2M communication services;

2.1.2 expansion of the mobile numbering block to accommodate new allocations (including new MNOs or MVNOs);

2.1.3 Activation of the SADC/CRASA harmonised numbers, Emergency Numbers and Child Helpline Numbers.

3.   BACKGROUND

3.1 In 2018, the Numbering Policy review was conducted with the aim to identifying areas of regulatory interventions to improve the numbering management in provision for the new technology services and carrying a number of audits to confirm numbering utilization. **Reference is made to Figure 1 – Summary of the 2018/2019 Number Utilization Report.** This figure clearly indicates that there are very few numbers available for allocation in the mobile range. The Eight Million (8M) numbers analyzed here occupied the whole of seven range number. The designated mobile numbering block in level 7 are 71XXXXXX, 72XXXXXX, 73XXXXXX, 74XXXXXX, 75XXXXXX, 76XXXXXX, 77XXXXXX and 78XXXXXX. Level 7 numbers do not include 70XXXXXX which is reserved for future use and 79XXXXXX which used for VoIP services.

Percentage Occupation of the Mobile Numbering Space of 8 Million Numbers as at March 2018

BTCL	OBW	Mascom	FREE
1,400,000	2,400,000	3,000,000	1,200,000

Figure 1: Number Utilization before migration

3.2 In this review, the policy considered the international numbering trends, best practices and technological evolutions, as well as the input from the local operators (MNOs).
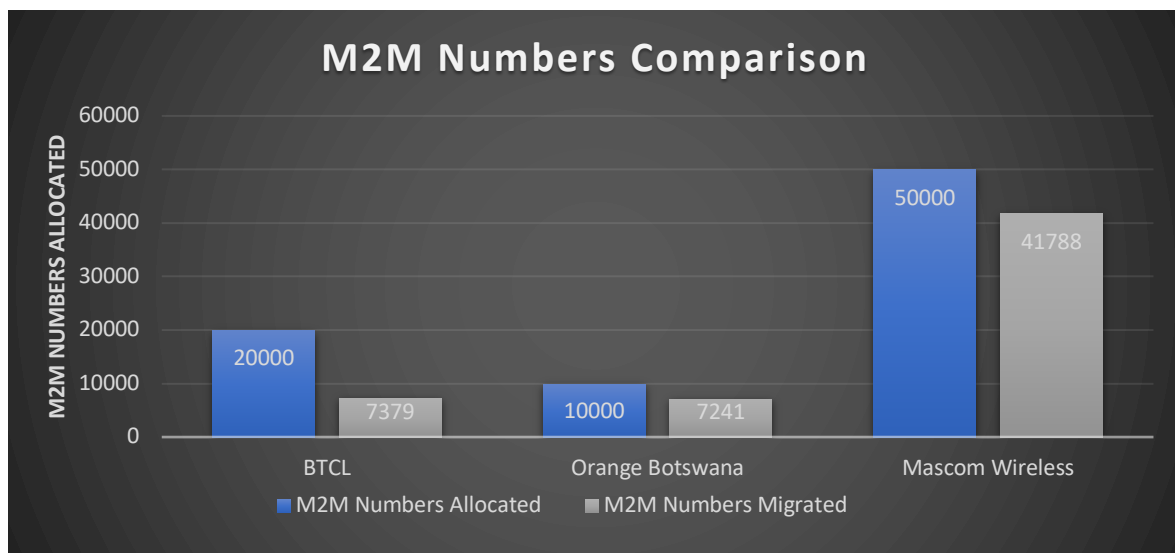
4. IMPACT OF MIGRATION

4.1 Pre-Migration

Initially, there were eight million numbers reserved for mobile communications in level 7, that is 71XXXXXX to 78XXXXX numbers. Then, during the introduction of the M2M services in the market, the MNOs self-catered for this service in the mobile service block (i.e., level 7) since it had no unique block planned for in the numbering plan then. The M2M communications is used in devices such vehicle tracking systems, point of sales, ATMs and other remote monitoring services. **Reference is made to Figure 1, the numbering utilization picture before migration was triggered.** However, the picture in Figure 1 prompted the Authority to trigger the migration process because only fifteen percent (15%) i.e. One Million Two Hundred Thousand (1.2Million) of the mobile numbers were available. This meant that the mobile numbering range was getting depleted hence needed urgent attention. According to numbering standards E.164 this number was way below the thirty five percent (35%) threshold recommended for best numbering management practice (i.e., at-least 35% free numbers should always be available).

4.2 During Migration -In addressing this concern, the following were considered:

4.2.1 The existing M2M communications service occupying the mobile numbering space was recommended for migration to

an independent block of a 10-digit long range in level eight (level 8). A combined total of **Fifty-Six Thousand Four Hundred and Eight (56,408)** of M2M numbers would be freed to increase the mobile numbers by the same figure **Reference is made to Figure 2 for the M2M** allocations compared to the assignments made in the M2M numbering blocks**.** This combined total aggregated M2M utilization between all MNOs being Botswana Telecommunications Corporation Limited (BTCL), Orange Botswana (OBW) and Mascom Wireless statistics at 31st March 2021.
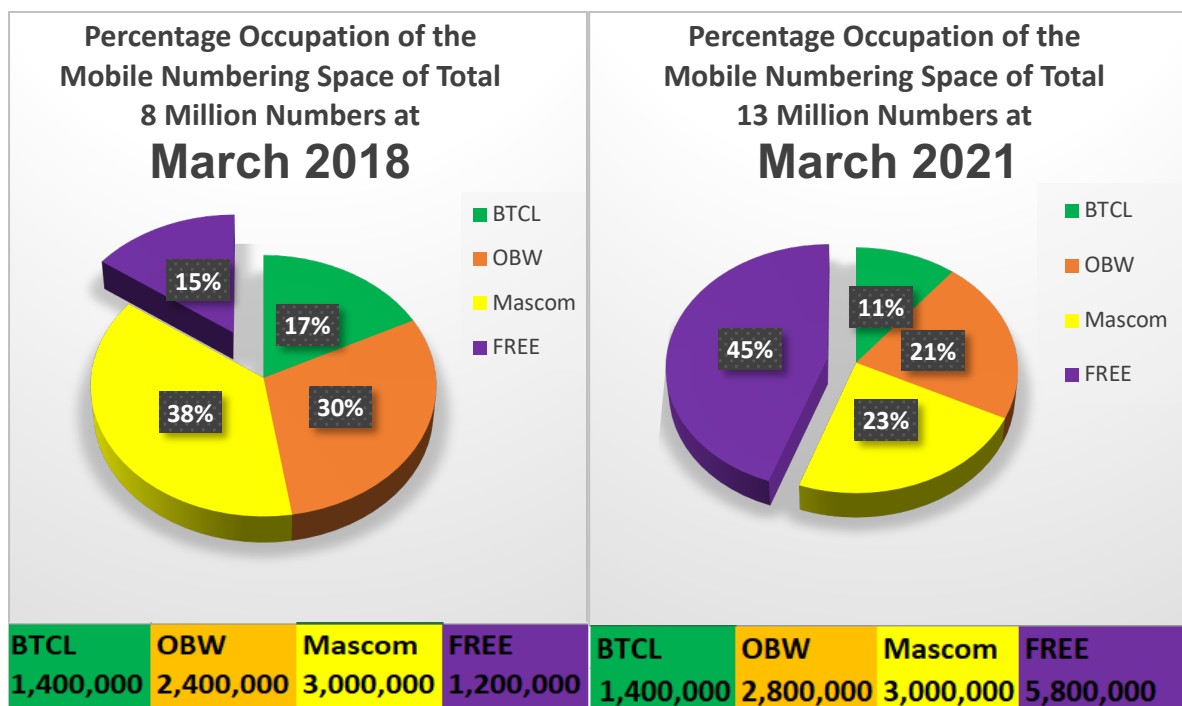

Figure 2 Chart showing a comparison of M2M Numbering Utilization

4.2.2 Post Migration

i. Noting that from the M2M statistics submitted by the MNOs, an insignificant quantity of the migrated numbers from level 7 was obtained. Another measure was therefore introduced, being an expansion of the mobile communications range to level 8 which then added Five Million (5Million) numbers to the existing

mobile numbers bringing the total quantity of mobile numbers to thirteen million (13M, being a total of both being allocated and free numbers), with free numbering capacity rising to Five Million Eight Hundred Thousand (5.8 Million).

ii. It was observed after migration and expansion of the mobile range that the unoccupied (Free) numbers' percentage rose from 15% to 45%. The 45% meets the threshold practice and is in alignment with international standards which prescribe that at least 35% of numbering range for a specific service should be free. It is worth noting that 65% is the threshold rating of the maximum percentage utilisation at which re-planning of the Numbering Resources should commence.

iii. Therefore, this additional 5 Million numbers give the Authority allowance to serve the market needs should new operator(s) be licensed, or Internet of Things (IoT) services kick off rapidly which will require a IoT numbers. The 45% threshold meets E.164 guidelines of at least 35% of numbers being available for usage.

iv. The net effect of the migration impact brought a lesser pressure on the available mobile numbering blocks. **Reference is made to Figure 3**- an illustration of the percentage occupancy comparison by MNO numbering blocks allocated alongside the free ones.

Figure 3: Comparison of Number Utilization Pre and Post Migration

5. Other non-compliant Numbers identified

5.1 The regulatory notice was sent to the three MNOs and requested an update of the utilisation of other non-compliant numbers currently active and used in the MNOs network without the Authority's knowledge. The respective operators at the consultative meetings gave the updates as specified below. In view of the SADC/CRASA harmonisation guidelines the MNOs were advised to activate the 112 for the general emergency number and 116 for Child Helpline number. **Refer to Table 1.**

Table 1 Summary of other non-compliant numbers

#	BTCL	Orange Botswana (OBW)	Mascom Wireless
112	**Active** and terminates at Botswana Police,999.	**Active** and terminates at Botswana Police, 999.	**112 Active** and terminates at Botswana Police, 999.
116	Number is reserved and Child Line Botswana to formalise application for 116 number with the MNO.	Number is reserved and Child Line Botswana to formalise application for 116 number with the MNO.	Number is reserved and Child Line Botswana to formalise application for 116 number with the MNO.
Others	None	None	123 Voicemail number translated to +26771234123