Konik System Overview Document

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1. Introduction

Previously, software applications were “built to last”; with longevity and robustness being the most prioritized features. Today, however, applications are “built to change”; and the ability to reflect the dynamic nature of business now being the most important feature. The need for transformation through flexible software applications that can change direction rapidly has never been greater. cGrate Consulting International has adopted this philosophy in the Electronic Voucher Distribution (EVD) industry by developing the Konik (EVD) switch.

Konik is an Electronic Voucher Distribution (EVD) switch that is designed to allow merchants, customers and dealers to purchase electronic vouchers. All these users can access the Konik system via different input channels. The input channels include but are not restricted to the web, ATM, POS, SMS, USSD as well as internal and external specs. Once voucher information has been obtained from the voucher providers, the vouchers are sent out via distribution nodes that include File, SMS, POS and ATMs.

The modular structure of Konik allows the system to sell a multitude of different vouchers for various Voucher Providers easily. Konik can sell different types of vouchers that include airtime and electricity vouchers amongst others. Due to the nature of Electronic Voucher Distribution (EVD), dealers and merchants alike, should be able to pay for vouchers quickly and easily. In line with this, Konik has a payment module that quickly accesses payments made through various payment channels such as M-pesa, Electronic Funds Transfer (EFT), and mobile banking.

This document explores the various components of the Konik system by providing the function of each individual component and explaining the component briefly. This is all done with the aim of providing the reader with a deeper understanding of entire the Konik system.

2. Konik Description and Structure

2.1 How to define Konik

The Konik system can be best summed up and described using the following key words:

- Extensible and scalable
- Versatile
- Plug and Play

These words in relation to Konik are explained in greater depth below:

Extensible and Scalable

Konik is both scalable and extensible as it is able to handle growing transaction volumes gracefully as a result of its modular structure. The Konik system makes use of Service Oriented Architecture that can handle continuously growing transaction volumes and maintaining efficiency. Konik was also built with the possibility of future growth in mind and requires minimal effort to extend. In line with this, during the systems design, mechanisms for either

expanding or enhancing the system with new capabilities without having to make major changes to the system infranstructure were included.

Plug and Play

The Konik system is able to adapt quickly to new environments. For example, if a new service provider enters the market, Konik is able to sell prepaid vouchers for the new provider by simply adding a new voucher receiving channel without having to redesign the channel.In the same way, a new payment module, distribution node or input channel can simply be added to the system and made use of with no changes in the entire system design.

Versatile

The Konik system is versatile in that it can make use of different input channels, distribution nodes and Voucher Providers. Any changes in the available input channels, distribution nodes or Voucher Providers are not difficult to implement as all that is required is adding of the new channel, distribution node or Voucher Provider with no changes to the entire system design.

2.1 Konik General System Structure

Figure 1 below, shows all the components making up the Konik System. Konik consists of six main components which are:

1. Input channels
2. Konik Core
3. Voucher Providers
4. Distribution nodes
5. System Administration
6. Payments Module

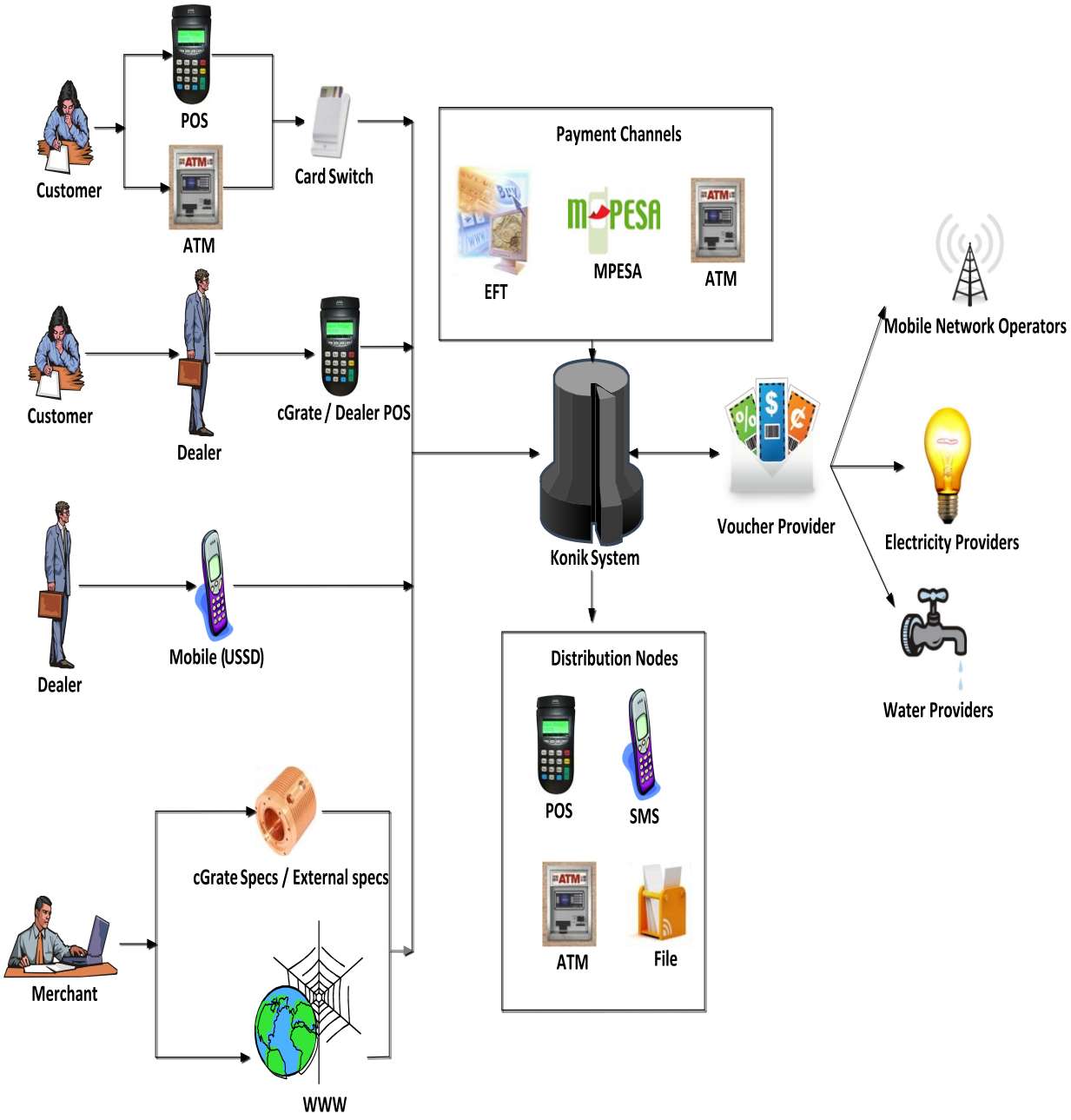

Figure 1: Konik Core General Structure

2.1.1 Input Channels

2.1.1.1 Web Services

This input channel is mainly used for **system-to-system** communication and is often made use of by high volume multiple channel users. It uses SOAP web services to receive transaction requests from the organization that is integrating into the Konik system and wishing to access the system. Under this input channel, both bulk and individual transactions can be processed.

2.1.1.2 Web Channel

This input channel is mainly used for **merchant administration** and bulk transaction request file loads. On the web, merchants can purchase a single voucher, upload a file with multiple voucher purchase requests, authorize batch processing, carry out merchant reconciliation and view transaction reports online**.**

2.1.1.3 USSD Channel

This input channel is mainly used for **convenience selling** (i.e. selling vouchers from any location) Using USSD merchants can purchase vouchers, request reconciliation, view account balances as well as change either the PIN or the menu language. Konik is able to provide multiple USSD codes for multiple menus. This means that Konik does not make use of static menus but rather dynamic menus that can be tailored to the client's requirements. For example, if an airtime merchant is using Konik to sell airtime and a electricity provider comes along and also wishes to use Konik to sell vouchers. The electricity provider does not have to use the same menu used by the airtime merchant but rather a menu tailored to the needs of the electricity provider can be created easily and used by the client.

2.1.1.4 POS

This input channel is mainly used by **retailers** that already have an operating business and would like to complement their main business with selling electronic vouchers.

2.2 Konik Core

Konik core is mainly used for transaction switching. The different types of transaction switching carried out include selecting the right voucher, Voucher Provider and distribution node. Konik core is also able to process Voucher Provider and merchant reconciliations and discounts as well as merchant payments.

2.3 Voucher Provider Modules

The main role of the Voucher Provider modules is to communicate with the actual Voucher Provider. In the event that a new Voucher Provider comes into the market a new Voucher Provider module is simply added to the system in order to facilitate for communication with the actual Voucher Provider and the selling of vouchers by merchants.

2.4 Distribution Nodes

Distribution nodes are the various means through which vouchers may be sent out once a request has been processed. Konik uses two main types of distribution nodes which are pinless and SMS. Some of the other

distribution nodes used include POS and plain file. However, there are cases when merchants would like vouchers to be sent back to them for printing in such a case, a custom distribution node is configured for the client to allow for this.

2.5 System Administration

The Konik system administration can be divided into the following main sections:

2.5.1 Trails Management

Trails allow the Konik system users to search and view portal trails, airtime purchases, USSD traces and SMS trails.

2.5.2 SMS Management

SMS management allows users to send both individual and bulk SMS-s. Bulk SMS-s can be done in two main ways that include sending the same SMS to multiple numbers or sending multiple SMS-s to multiple users.

2.5.3 User Management

User management entails the adding and editing of system user details, adding and managing of both different user groups and channel user.

2.5.4 Merchant Management

Merchant management includes the adding and editing of new merchants to the system. In addition to this it also entails assigning merchant vouchers and changing merchant voucher discounts.

2.5.5 Voucher Provider Management

This involves the adding and editing of a Voucher Provider, creating voucher types, adding and editing voucher provider discounts as well as activating and deactivating vouchers.

2.6 Payment module

The payment module in Konik is responsible for the receiving of payments as well as the quick update of merchant account balances. This quick update of merchant balances reduces the risk of fraud in Konik.