

EXECUTIVE SUMMARY

EXTENDED VERSION

Optimization of Pharmacy Operations using
Automatic **D**istributed **V**ending **S**ystem

A-*pharmacy*TM

Patent No. US 8,028,822

Automatic Distributed Vending System

Patent Pending No. US 13,335,954

**Optimization of Pharmacy Operations using
Automatic Distributed Vending System**

REV 2

December 14, 2013

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1. BACKGROUND

Every business is CHALLENGED by “business-specific variables, or events”, which include: STATIC (relatively regular or continuous); DYNAMIC (relatively unusual or periodic); EMERGENCY (rare, but possible). In respect to Pharmacies, STATIC – is represented by typical demand for medications available on the market; DYNAMIC – is represented by substantial increase in demand due to periodic events, such as flu season, as a function of environment/weather; EMERGENCY – are rare but possible events, such as: loss of power; epidemic; etc.

Business objective is to achieve BALANCED OPERATIONS, i.e. develop cost-efficient logistics, which will allow allocate appropriate resources (SOLUTIONS) to match STATIC, DYNAMIC, and EMERGENCY conditions with minimum RISKS of failure or mistakes, affecting business integrity.

In respect to pharmaceutical industry, the requirements even more demanding, since the industry is directly impacting the Public Health. The graph (FIG. 1) below is an illustration of the current ability of each Pharmacy to address the CHALLENGES. Note, that for business (such as a franchise) with several Pharmacies, the probability of MISTAKES is practically multiplied by the number of Pharmacies within the business. The current business/franchise configuration places a heavy burden on each participating pharmacy (investor), without providing adequate tools and logistic support to meet challenges imposed by the nature of the business.

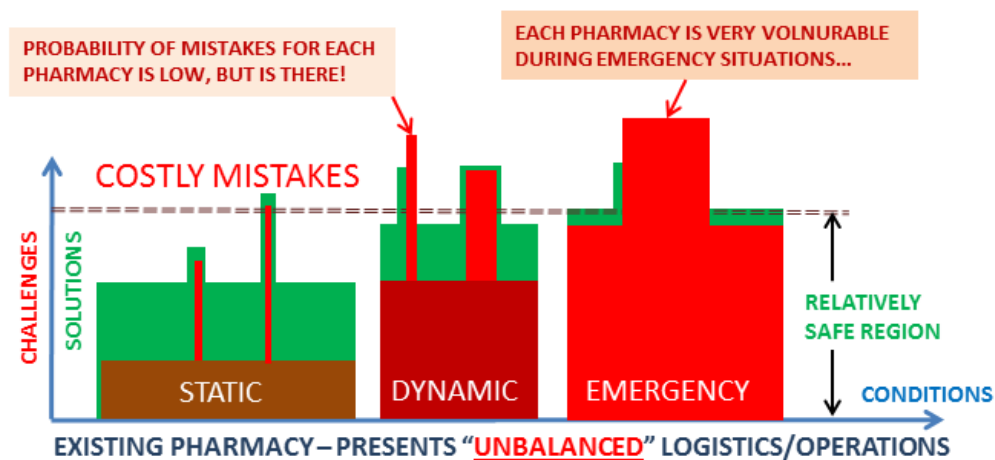


FIG. 1 – Existing Pharmacy business is “unbalanced” with risks of mistakes

2. BRIEF DESCRIPTION

The objective of the patented **ADVS** technology is to balance the Pharmacy business (FIG. 2) by providing cost effective and efficient solutions for a franchise of Pharmacies, and for stand-alone independent Pharmacies. For a franchise of Pharmacies, the **ADVS-pharmacy.central™** within a designated area (example: 15 miles radius) will support operation of: a number (example 10) of stand-alone **ADVS-pharmacy™**, and a number (example: 8) of stand-alone **ADVS-pharmacy.kiosk™**. The **ADVS-pharmacy.central™** will be processing:

100% of all refill prescriptions, overnight prescriptions, and dynamic prescriptions to be served on-site at the **ADVS-pharmacy.central™**;

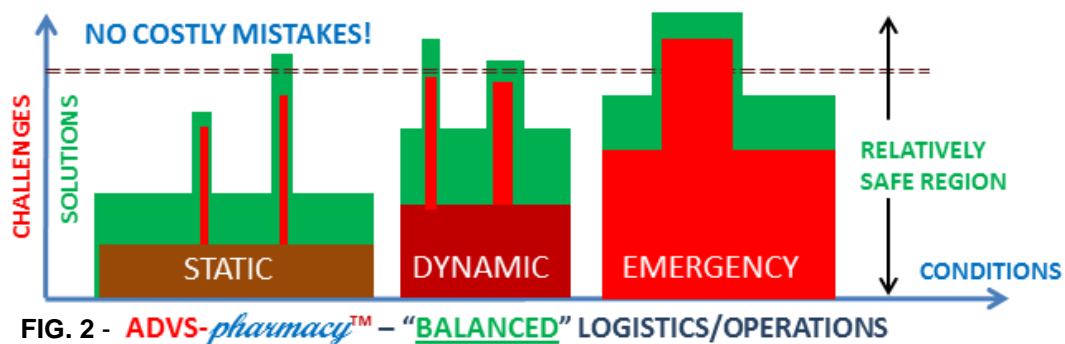
100% of all prescriptions and 50% of other prescriptions served to a number (15-30) of remote SERVICE locations within an average 10 mile radius: **ADVS-pharmacy™**, **ADVS-pharmacy.kiosk™**.

At the CENTER, the most qualified Pharmacist and support staff, equipped with the state of the art technology, operating within team environment, will perform their duties:

- Delivering medications with 100% quality – at all times
- Providing 24 hours access to on-site 5 **ADVS-pharmacy.kiosk™** to at least 15 CUSTOMERS at once, and on-site person-to-person customer support during peak hours 11AM to 11PM
- Providing 24 hours **ADVS-pharmacy.connect™** real-time voice/video support in many languages via wireless technologies directly at the SERVICE or patient locations, including: remote **ADVS-pharmacy™**, un-attended **ADVS-pharmacy.kiosk™**, residencies, etc.
- Securing, storing within specifications all raw materials, and medications; and allowing only authorized personnel to process private information in respect to CUSTOMERS

At the SERVICE locations:

- Providing 24 hours un-attended service without delays to at least 6 CUSTOMERS at **ADVS-pharmacy™**, and 3 CUSTOMERS at **ADVS-pharmacy.kiosk™**, and attended service at **ADVS-pharmacy™** during peak hours only (11AM to 9PM)
- Maintaining only limited supply of raw materials, and process prescriptions in support of potentially urgent requests by CUSTOMERS



The CENTER location could be a stand-alone building, or a dedicated section within an existing Pharmacy. The CENTER could be part of the PROVIDER, or operated by independent authorized licensed CONTRACTOR, serving number of different PROVIDERS.

In summary, the patented **ADVS** technology will benefit the CUSTOMER:

- Providing 100% quality of medications, including written report for each medication delivered
- Eliminating lengthy delays staying in-line, behind CUSTOMERS with contagious illnesses
- Protecting sensitive information, as only one location the CENTER is authorized to process
- Enabling to plan ahead for most expeditious 24 hours service within shorter distance and time to obtain medications, and on-site real-time voice/video assistance in many languages

The patented **ADVS** technology will also benefit the PROVIDER:

- Improving efficiency by lowering cost of medications by an average of 96 cents
- Avoiding risky un-balanced business structure, which can cause errors, costly litigations
- Gaining confidence from CUSTOMERS in providing 100% quality medications at convenient locations, without delays with substantial increase of 24 hours un-attended services
- Effectively expanding business by adding un-attended 24 hour kiosks to new areas with potential demand for medications, while outperforming competition on all major parameters

3. DETAILED DESCRIPTION

In support of the principals described in paragraph 2, the following major components were conceptually designed and patented.



FIG. 3

Portable Vending Cartridge (PVC) configured for being loaded with medications inside sealed CONTAINERS at the CENTER **ADVS-pharmacy.central™**, and then transported to designated SERVICE location **ADVS-pharmacy™**, **ADVS-pharmacy.kiosk™**, where it is installed into Automatic Vending Module (AVM), and then dispensed to an authorized CUSTOMER. At all times, PVC Controller performs non-volatile diagnostics of environment and security of the content inside.



FIG. 4

AVM installed at **ADVS-pharmacy™**, **ADVS-pharmacy.kiosk™**, which is configured to accept a number (4-6) of PVC units, and provide power, controls and user interfaces for CUSTOMER and PROVIDER. CONTAINERS with medications could be dispensed by AVM to an authorized CUSTOMER (front), and authorized PROVIDER (back). AVM are configured to activate each PVC in-parallel, those increasing the dispense rate to as high as 10 CONTAINERS within 10-15 seconds. AVM Controller will monitor in real-time: inventory of CONTAINERS, environment inside, power consumption, status of each PVC Controller, non-volatile diagnostics, and interface with the ADVS system HOST computer. AVM units could be configured for installations as part of ADVS system, such as **ADVS-600**, **ADVS-1200**, with real-time audio/video 24 hours **ADVS-pharmacy.connect™** CUSTOMER service. With respective insulation and environmental controllers, AVM could be the industry first to retain medications at required refrigeration temperatures, and then automatically dispense to authorized CUSTOMERS without operator assistance.



FIG. 5 – ADVS configurations

ADVS system level component configurations consist of **ADVS-pharmacy.central™**, based on **ADVS-600** modules (shown on **FIG. 6**), or combination of **ADVS-1200** and **ADVS-600** modules.

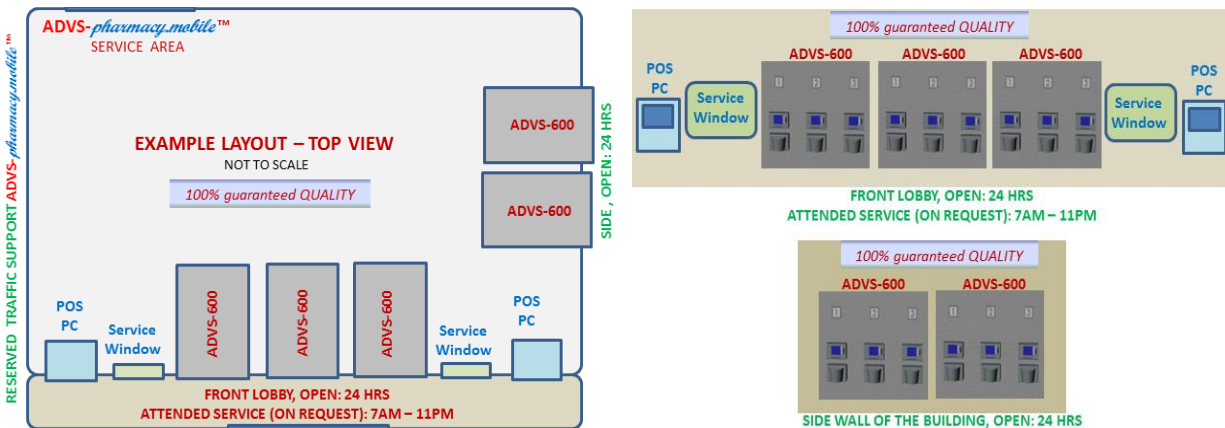
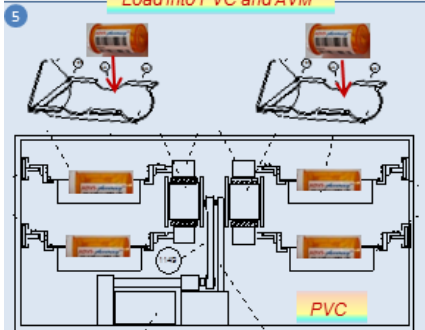
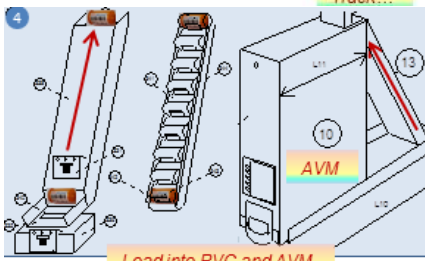
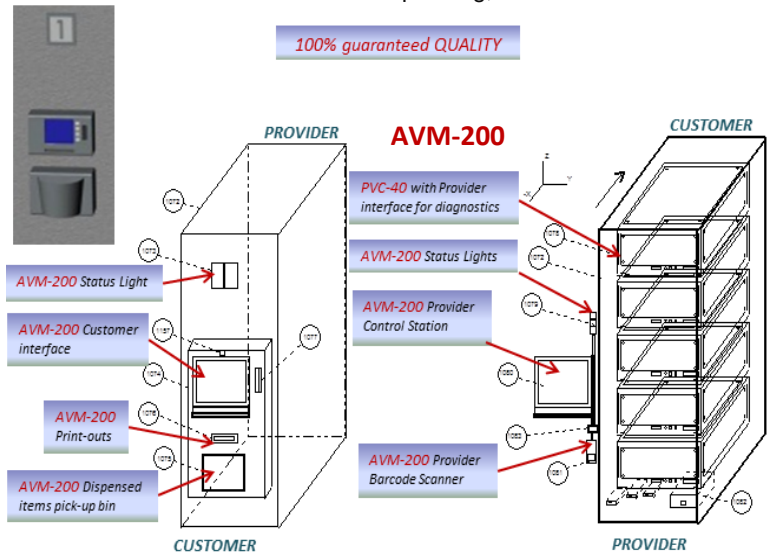


FIG. 6 – ADVS system configurations



At the **ADVS-pharmacy.central™** raw materials are securely stored within respective specification environments. Prescriptions are processed by authorized Pharmacists, and information is entered into the Pharmacy Data Base (PDB) with additional parameters related to **ADVS-pharmacy™**:

1) Type of CONTAINER (size, weight). Type is selected by Controller to optimize utilization of available space, and match Carrier sizes within Portable Vending Cartridges (**PVC**). Prescriptions with large amount of pills or liquid are processed to fit in several CONTAINERS, as needed. This is also beneficial to the Customer, since only CONTAINERS currently in-use will be opened. The remaining medications will continue be sealed in their own CONTAINERS within required environment; 2) Weight of medication; 3) Specification temperature range - min/max; 4) Specification humidity range – min/max; 5) Expiration date. All records relative to specific prescription, including medication specifications, are stored in the PDB under unique Prescription Record Number (PRN), and most important data are listed on the barcode label attached to CONTAINER, which are generated to match the PRN. All medications are sealed inside CONTAINER. Each processed prescription will undergo 100% quality inspection, including: verification of barcode, integrity of the seal, and the weight of CONTAINER with medications inside. CONTAINERS with sealed medications inside are then loaded via **ADVS** support equipment into **PVC** units, where they remain under monitored security and specified environment. Per schedule, loaded **PVC** units are transported via **ADVS-pharmacy.mobile™** to designated **SERVICE** locations: **ADVS-pharmacy™**, **ADVS-pharmacy.kiosk™**, where **PVC** units are inserted into designated **AVM** units, enabling **AVM** to dispense CONTAINERS with medication to authorized **CUSTOMERS**. **ADVS** Controllers control and maintain in real-time: inventory of **ADVS** equipment, inventory of processed medications, and **QUALITY** of all logistic steps related to processing of medications, transportation and dispensing to authorized **CUSTOMERS**. **ADVS** Controllers monitor inventory tracking barcode labels on: CONTAINERS, **ADVS** equipment (**PVC** units, etc.), **ADVS** components (carriers inside **PVC** units, etc.). **ADVS** Controllers monitor **QUALITY** by continuous verification of respective process steps, including: prescription barcode label of CONTAINER with specific medication inside; verification of expected weight, size; environment surrounding CONTAINERS; security in respect to access rights to the content inside **PVC** units at all times. When available, authorized **CUSTOMERS** will be informed (phone, email, text message, etc.) – the medication(s) is ready. **CUSTOMER** can plan ahead selecting date/time interval for visiting the **SERVICE** location and receive medication(s) without any delays. **CUSTOMER** can request history log confirming medications compliance to required specifications, as part of 100% guaranteed **QUALITY**. **CUSTOMERS** can obtain 24 hours voice/video assistance via **ADVS-pharmacy.connect™** from qualified Pharmacist in real-time at the time of dispensing, or later.



4. DEVELOPMENT

Estimated schedules to complete design and present PROTOTYPE and PILOT versions of key components are listed below. The format of the schedules listed below includes specific data in respect to estimated: hours (cost), [material cost], {equipment cost}.

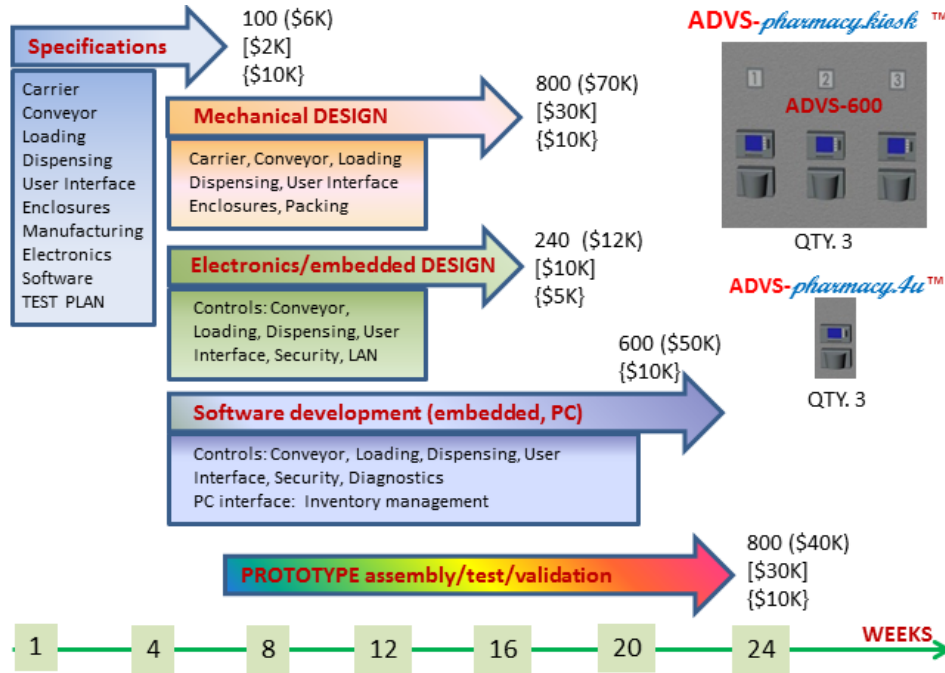


FIG. 6 – Development of PROTOTYPES

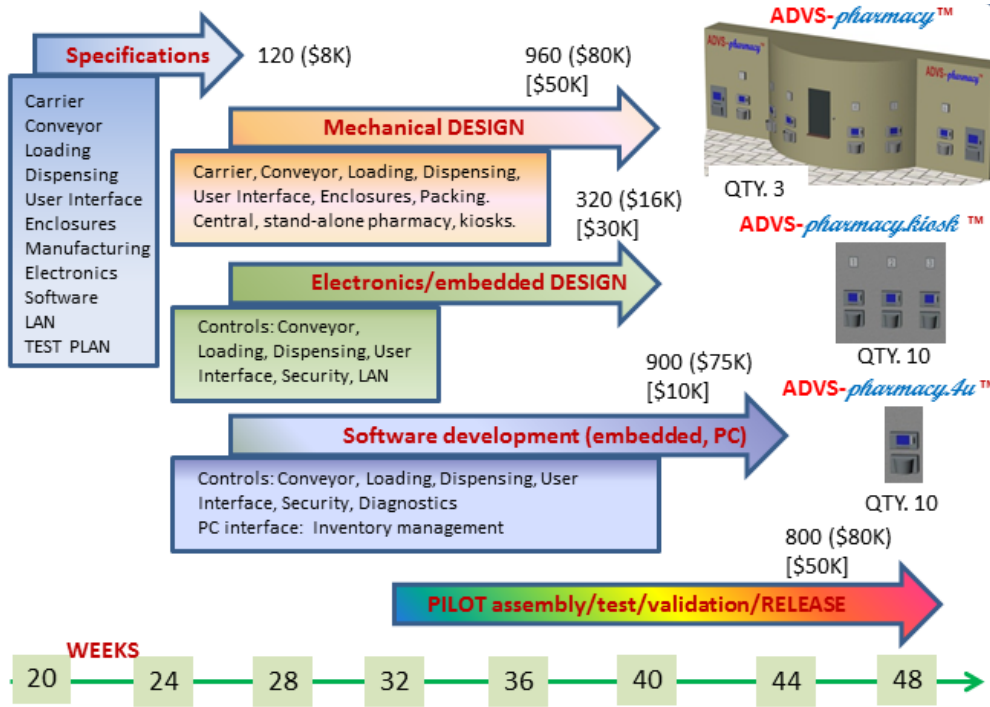


FIG. 7 – Development of PILOT and release for PRODUCTION

With appropriate investments listed in paragraph 5, the highly experienced team of engineers and professionals at **ADVS-technologies**, with support from qualified contractors, will complete above schedules and deliver the products per specifications. For reference, Table 1 below contains a list of critical challenges, and status of completion, which the engineering team will focus on in the early part of the development of prototype and pilot units.

Description	Spec	Concept	Design
1. Mechanical			
a) Portable Vending Cartridge (PVC-40) – keeping the overall weight (EMPTY) under 30 pounds. Use of: plastics parts for production, single gear motor to drive dual synchronized conveyors.	80%	60%	30%
b) Loading mechanism – moving containers from the feeding conveyor into carriers inside PVC .	60%	50%	20%
c) Unloading mechanism – removing containers from carriers into dispensing chute. Slide in-out tunnel, engaging with carriers aligned for dispensing.	50%	50%	30%
d) Retaining containers inside carriers during transportation. Use top cover plates with extensions reaching each container inside carrier, preventing containers from moving up. Alignment of carriers in a “chess-board” order.	70%	60%	60%
e) Storing-loading-unloading PVC-40 to/from AVM . Portable carts, aligned with respective PVC slots inside AVM .	60%	50%	25%
f) Transporting loaded PVC-40 to destinations.	40%	70%	30%
g) Inventory management by Provider – removing remaining containers from PVC-40 units inside AVM-200 . Semi-automatic method removal rates: 2 containers per 5 sec., 40 containers per 5 minutes. Automatic rates: 2 containers per 1 sec., 40 containers per 1 minute. Automatic unloading of AVM-200 – 200 containers in 5 minutes.	60%	40%	20%
h) Re-location of containers within AVM . Semi-automatic.	80%	70%	40%
2. Software			
a) Control algorithm for PVC-40 , including: self-diagnostics, interface to barcode scanners, LAN	60%	30%	-
b) Control algorithm for AVM-200 , including: LAN for PVC-40 , LAN to HOST PC, user interfaces (PROVIDER, CUSTOMER)	40%	30%	-
c) Real-time inventory management	50%	40%	-
d) Real-time resource allocation and controls	30%	10%	-
e) QUALITY monitoring, control and reporting	50%	30%	-
f) On-site real-time voice/video assistance	70%	40%	-
3. Electronics			
a) Low-power controls with self-diagnostics for PVC-40	70%	60%	30%
b) Mux interface to barcode scan engines	70%	50%	25%
c) LAN interfaces between controllers within AVM-200 , HOST	50%	30%	10%

Table 1.

5. INVESTMENT

5.1 BUSINESS OPPORTUNITIES

There are 250,000 pharmacies in the USA. Out of 250,000 – approximately 21,000 are owned by 5 leading franchises (PROVIDERS). The average dispensing cost per prescription is around \$12. Based on average service rate of 250 prescriptions per pharmacy, the total cost per day on dispensing medications to CUSTOMERS is \$750M. Based on average number of operating days per week of 5.5, the annual cost of dispensing medications in the USA is estimated at \$214.5 Billion.

The significant percentage of the entire business (at least 60%) consists of refill prescriptions. Based on above information, the annual cost of dispensing refill prescriptions is at least \$128,7 Billion. The refill portion of the business is known for its relative stability, repeatability, and growth, regardless of the state of the economy. Despite this rare combination of valuable features, pharmacies continue to struggle in meeting Government regulations, and maintaining expected quality of products and services.

The patented and patent pending technologies, under development by **ADVS-technologies**, include comprehensive solutions to enhance operations of Pharmacies well beyond existing technologies. The **ADVS-pharmacy™** and associated components – are result of analytical analysis of the challenges the Pharmacies are facing today, and identifying solutions in order to address those challenges with most efficient and effective processes, while saving each pharmacy on an average \$.96 in dispensing costs.

The basic configuration to be available from **ADVS-technologies** for unattended service, model **ADVS-600**, with the following specifications: capacity of 600 medications; service rate of 3 CUSTOMERS at once; flexibility of being located inside a pharmacy, outside a pharmacy, or as a stand-alone kiosk; flexibility of being loaded with medications processed on-site at a pharmacy, or via Portable Vending Cartridges (**PVC**) being processed at the **ADVS-pharmacy.central™** and delivered/installed via **ADVS-pharmacy.mobile™**; the only technology providing direct automatic dispensing via **AVM** to authorized CUSTOMERS of prescription and OTC medications with 100% compliance to specifications, including medications required to be maintained at refrigerated temperatures; providing 24 hours CUSTOMER support via real-time voice/video **ADVS-pharmacy.connect™** - is priced in quantities of 100+ at \$15,000 (not including installation costs).

It would be reasonable to project, that at least one **ADVS-600** with on-site prescription processing and loading would be purchased by each pharmacy, which would create sales of \$3.75 Billion. It would be also reasonable to project that the leading PROVIDERS would invest in purchasing at least 3 **ADVS-600**, which would create additional sales of \$944 Million.

5.2 INVESTMENT GROUP

An independent investment GROUP, for initial START-UP investment of \$3.5M would receive 10% of ownership of **ADVS-pharmacy™** business, and in less than 12 months would allow **ADVS-technologies**:

- a) Install 2 prototypes of the stand-alone independent **ADVS-pharmacy.central™** (one based on five **ADVS-600**; and one based on six **AVM-200** and one **ADVS-600**), which will:
 - Provide 100% quality, 24-hours service at a rate respectively of 15 and 9 CUSTOMERS at once, and real-time on-site voice/video assistance via **ADVS-pharmacy.connect™**
 - Allow to demonstrate operation of the patented **ADVS** technology to pharmacies (franchises, stand-alone, etc.) as technology with significant benefits and exceptional ROI
- b) One DEMO set, as a reconfigurable set of components based on qty. 10 of **AVM-200** to demonstrate the patented **ADVS** technology at respective trade shows, and on-site at a PROVIDER facility, as needed.

The projected sales at the end of the 1-st year - \$522,570.

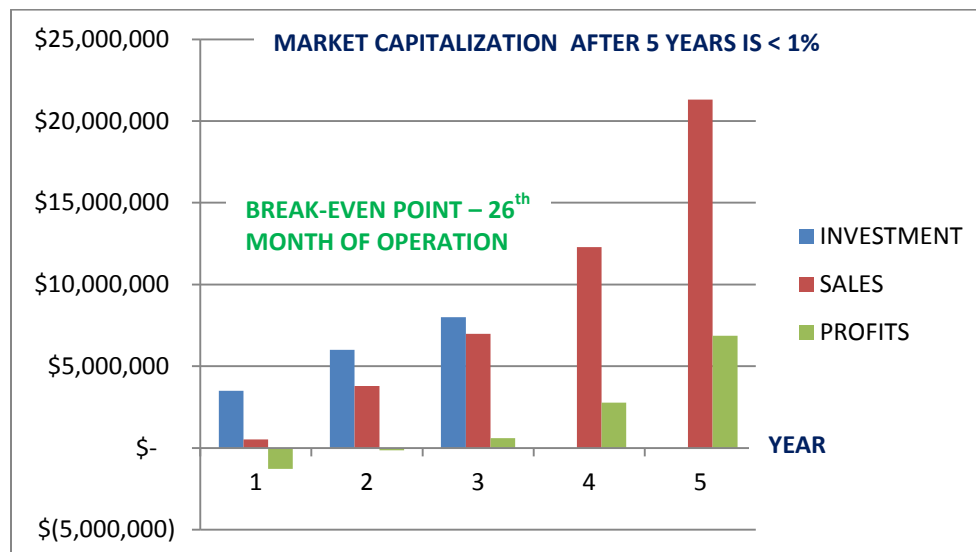
For additional investment (2-nd year) of \$6M would receive additional 10% of ownership (20% total) of **ADVS-pharmacy™** business, and in less than 12 months:

- a) 5 installed stand-alone independent **ADVS-pharmacy.central™** (based on **ADVS-600**)
- b) 5 installed stand-alone independent **ADVS-pharmacy.central™** (based on **ADVS-1200, -600**)
- c) 20 installed integrated and stand-alone **ADVS-pharmacy.kiosk™** (based on **ADVS-600, -600w**)
- d) 3 additional DEMO sets to demonstrate the patented **ADVS** technology.

The projected sales at the end of the 2-nd year - \$3.7M.

For additional investment (3-rd year) of \$8M would receive additional 10% of ownership (30% total), and 30% of profits generated from projected SALES of \$6.9M, resulting in estimated \$180K paid in dividends. Then, over the next 17 years, as **ADVS-technologies** will be deploying the patented **ADVS-pharmacy™** technologies across the USA, the investment GROUP will benefit from generated PROFITS, and receive estimated \$90M, based on 30% ownership.

In summary, a total investment of \$17.5M over 2.5 years, will generate return over the following 17 year-span in an amount of \$90M. The actual PROFITS could be significantly higher considering: opportunities of generating additional revenues from licensing the patented technology within and outside the USA to other existing and start-up pharmacies; and appreciation of company stock.



GRAPH 1 – Investment Opportunity, **ADVS-pharmacy™**

5.3 PROVIDER OPPORTUNITIES

Various options are available, depending on the size, and the business strategy of the PROVIDER. For details, please visit www.adv-technologies.com.

IMPORTANT NOTE: Once either an independent new pharmacy chain, or an existing pharmacy business, invests into patented **ADVS-pharmacy™** technology, majority of other pharmacies within the USA (estimated total of 250,000) will be interested, and majority will follow and convert to patented **ADVS-pharmacy™** technology, since there is no other cost effective technology available on the market, which could compete successfully with **ADVS-pharmacy™** in providing phenomenal combination of features, including: medications with 100% guaranteed QUALITY at highly competitive prices, available 24 hours at convenient locations, with practically no waiting in-line, supported by real-time **ADVS-pharmacy.connect™** voice/video assistance on-site, or at CUSTOMER location via Internet.