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Situation Analysis for Kinematic Automation

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KINEMATIC AUTOMATION:

Kinematic Automation is an industrial automation company located in Sonora, California. It was founded in 1980 by Ted Meigs and Dave Carlberg. The machines that are manufactured at Kinematic produce different types of diagnostic products for the medical field, mainly testing strips. This kind of manufacturing is called lateral flow immunoassay with Kinematic being one of the leaders in this field.

CURRENT PRODUCT(S):

Kinematic's current products are listed on its website where a customer can browse, find a machine that suits their needs, and request a quote from a Kinematic representative. After that, the engineering team begins the assembly process. It is then prepped and shipped directly from Kinematic's offices to the customer. A representative from Kinematic will accompany the arrival of the machine in order to help make sure it is assembled correctly. The customer can also opt to assemble it with their own crew at their facility if they choose. Our staff is always on top of support with helpful user manuals easily accessible on the website as well as access to remote help. Here are some of the products listed on the website along with the key features we have listed in the datasheet description:

Matrix 6300:

The Matrix 6300 is a striping machine. Diagnostic testing strips have different stripes printed across them with certain chemicals. This all depends on what the strip will be used for, whether that be a pregnancy test or a diabetes test. It all depends on what the recipe calls for. The process starts off with one long strip that makes it's way through the machine to get the necessary stripes printed on. After properly drying, the strip is then taken to a cutting machine that cuts the larger strips into appropriate sized testing strips.

Key Features:
-High efficiency directed air plenum design drying chamber
-Low web tension capability

-100% in-process inspection with reject marking
-Touchscreen operator interface for ease of setup & operation
-Multiple recipe storage
-Simple Validation
-Closed loop speed & dispense control
-Highly precise liquid delivery
-Small machine footprint
-Micrometer Adjustable line positions
-Web temperature sensing
Source: https://www.kinematic.com/matrix-6300-reel-to-reel-dispensing.html

Matrix 2370:

The Matrix 2370 is a cassette assembly system. An example of a cassette product would be a pregnancy test. This machine takes the printed sheets that have been striped in machines like the 6300. These sheets are fed into the machine while the plastic cassettes are assembled. As the sheets are fed in they are cut into the appropriate size to fit into the cassette for final assembly. This is a very fast-paced machine that can put out up to forty cycles a minute. It's also very hands-off like most of Kinematics products thanks to its easy changeover and recipe storage.

Key Features:
-Highly flexible and easily adjustable to run a broad range of cassette housings and strip sizes
-Touch screen operator interface terminal for simple setup and operation
-Proprietary high speed shear and place in one motion technology
-Automatic reject mark detection and associated scrap elimination
-Vision inspection and reject management for strip placement
-Automatic precision cassette housing closure with closure height verification
-Automatic offload
Source:
https://kinematic.com/matrix-2370-cassette-assembly.html#:~:text=Matrix%202370%20Cassette%20Assembly%20%7C%20Kinematic%20Automation&text=The%20Matrix%202370%20Cassette%20Assembly,range%20of%20plastic%20cartridge%20housings.

Matrix 6500:

The Matrix 6500 is a dip and dry machine. What that means is that it coats test strip material in a solution to get it ready for striping. This machine features a self-drying system on the bottom section which allows for hands-off operation. This whole machine like all of Kinematic's products

requires minimal operation from staff- it also includes high output rates, allowing for maximum efficiency. Like all machines produced by Kinematic, they are assembled, programmed, and tested at Kinematic's facility before being shipped to the customer. Once shipped, the customer can choose to either have a Kinematic technician travel to their facility to help assemble it or assemble it on their own. This product also features a twelve-month warranty.

Key Features:
-Simple setup and operation
-Recipe storage to support multiple products
-Variable web tension control
-Closed loop speed control
-Touch screen operation on Integral Swing Arm
-Automatic dip tank level control with peristaltic pump
-Output & Take-up Reel flanges provided
-Integral casters for easy mobility
Source: https://www.kinematic.com/matrix-6500-dip-coating.html

Matrix 2360:

The Matrix 2360 is a compact desktop machine designed for cutting test strips. Machines like the 2370 have cutting components built into them in order for the strips to be cut to the right size during assembly. But the 2360 is for cutting testing strips such as the ones used for diabetes testing. These strips can be cut to various sizes depending on the settings and adjustments saved on the machine. The 2360 can produce up to 6 strips per second and thanks to its high-quality blades require little maintenance.

Key Features:
-All electric drive for quiet, vibration-free operation
-English or metric programming
-Quick change blade design
-Anti-static bar helps reduce electrostatic problems
-Easily change card width without the use of tools
-Cuts from continuous web or individual cards
-Simple calibration
-Long life blade design
-Touchscreen control
Source: https://www.kinematic.com/matrix-2360-programmable-shear.html

Matrix 2501:

The Matrix 2501 is a similar design to the 2360 as it is a compact desktop machine for cutting strips. The difference is that this is a rotary cutting design meant for different types of strips. It can produce up to 60,000 strips per hour and like the 2360, requires little maintenance thanks to it's high-quality blades.

Key Features:
-Ergonomic Machine Design
-Blades require virtually no maintenance other than cleaning
-Excellent output geometry for strip handling
-Compatible with virtually all test strip materials
-Blade life is extremely long
Source: https://www.kinematic.com/matrix-2501-rotary-slitting.html

Matrix 1600:

The Matrix 1600 is another compact desktop machine. However, this one is a dispensing machine similar to the 6300 striping machine. What it does is print reagent onto the long strip in order to get a chemical reaction when it is being used for testing.

Key Features:
-Easy set-up and touch screen operator interface
-Easy change from lines to dots
-Small footprint, bench top application
-Integrated control system
-R&D or production capable
-Contact or non-contact dispensing
-Ability to store up to 6 different recipe names and configurations including syringe size and syringe fill volume
Source: https://www.kinematic.com/matrix-1600-reagent-dispensing.html

CURRENT TARGET MARKET(S):

The main target market for Kinematic Automation is the medical field. The machines that Kinematic manufacturers are meant for customers who produce diagnostic testing strips or products that require them. These testing strips can be used for a variety of things depending on the recipe and calibration the customer has set on their machine. These can include pregnancy tests, diabetes tests, AIDS/HIV, and even Malaria. Due to the recent surge with COVID-19 most

of the machines being produced at Kinematic manufacture test strips for COVID-19 tests. This means even more of an emphasis on the medical market. Other machines that have been manufactured by Kinematic for the medical field are ones that produce EpiPens and other sorts of genetic testing.

There has been a push from within the company by marketing manager Mark Jackson to go after agriculture markets and industrial markets. These types of testing strips can be used to test water levels as well as engine fluids such as coolant to make sure it is up to par. This means that there is more market potential out there for Kinematic especially since the area that we are located in leans heavily into the agricultural industry.

CURRENT DISTRIBUTORS NETWORK(S):

All distributions of Kinematics products are done in house, straight from the facility to the customer. This is known as direct to the customer. According to Mark Jackson, there were past attempts at setting up a distribution network but the plan fell through.

CURRENT COMPETITOR(S):

The biggest competitors for Kinematic are other automation companies. The major ones are listed as follows:

JR Automation:

https://www.jrautomation.com/

The first big competitor is JR Automation which looks to be a fast expanding company. They have acquired multiple companies over the past few years including Beijing JR Automation-BYCJ Assembly Line Co. LTD and more recently Esys Automation. They offer machines to a wide variety of customers in different fields including the military, amusement parks, warehouses, and more. Their main area of expertise is robotics with many of their robots being used for stacking and assembly purposes. They have recently gotten a big spike in

business from producing masks for the pandemic. They have partnered with General Motors (GM) to provide the machinery necessary for production according to “holland sentinel.com.”

Source: https://www.hollandsentinel.com/news/20200401/jr-automation-gm-mass-producing-medical-masks

Strengths ● Diverse group of industries ● Offices around the globe ● GM deal ● Owns multiple companies	**Weaknesses** ● COVID-19 has slowed down production in many industries. ● Production has slowed down in affected countries.
Opportunities ● Mask production ● Medical equipment production ● Ever-expanding demand for automation	**Threats** ● Global Pandemic ● Risk of employee health

ATS Automation:

https://www.atsautomation.com/

ATS Automation is similar to JR Automation with a variety of fields that it contributes to. These fields include the energy sector, electronic manufacturing, and even automotive. They have also acquired multiple brands including MARCO, Comecer, KMW, and more. This has really expanded their influence in the automation market and worldwide. They are pretty involved in the automotive industry compared to other fields with them just receiving $60-million to develop two automated battery systems according to “assembly mag.com”

Source: https://www.assemblymag.com/articles/95790-five-things-automated-assembly-systems

-https://thedailychronicle.in/news/6883/hybrid-and-electric-car-drive-systems-market-share-forecast-to-witness-considerable-growth-from-2020-to-2028-by-top-leading-vendors-magna-ats-automation-magtec-denso-bosch-allison-aptiv-mah/

Strengths ● Diverse group of industries ● Offices around the globe ● Multiple companies under belt ● $60 million deal	**Weaknesses** ● COVID-19 has slowed down production in many industries. ● Production has slowed down in affected countries.
Opportunities ● Increasing EV market growth	**Threats** ● Global Pandemic

• Medical equipment production • Ever-expanding demand for automation	• Risk of employee health

Ginolis:

https://ginolis.com/

Ginolis seems to be one of our closest competitors as they specialize in manufacturing equipment for medical testing. They have a large presence with offices in Europe, the United States, and China. Like us here at Kinematic, they have seen a big spike in business as the demand for testing equipment has skyrocketed. The overall industry is predicted to keep growing up through 2026 according to "The Global Reagent Dispensers Market analysis report."

Source:

http://kyn24.com/2020/07/24/reagent-dispensers-market-detailed-analysis-of-current-industry-figures-with-forecasts-growth-by-2026/

Strengths • Offices around the globe. • Uptick in demand for medical equipment.	**Weaknesses** • Support has to be conducted remotely instead of in-person.
Opportunities • Medical equipment production • Ever-expanding demand for automation	**Threats** • Global Pandemic • Risk of employee health

Biodot:

https://www.biodot.com/

Biodot is another close competitor as they specialize in medical manufacturing equipment as well. They offer many similar products including lateral flow machines that produce products such as pregnancy tests. They also branch into other parts of the medical field including life science. They have just been recently acquired by Artemis according to "Cision" and have recently overcome a supply-chain problem for COVID-19 products according to "PE Hub."

Source: https://www.pehub.com/stemming-the-covid-19-tide-biodot-overcomes-supply-chain-disruption-to-fight-pandemic/

-https://www.prnewswire.com/news-releases/biodot-acquired-by-artemis-301037617.html

Strengths ● Uptick in demand for medical equipment.	**Weaknesses** ● Support has to be conducted remotely instead of in-person.
Opportunities ● Medical equipment production ● Ever-expanding demand for automation.	**Threats** ● Global Pandemic ● Risk of employee health

EXTERNAL FORCES

The biggest external force affecting Kinematic Automation right now is COVID-19. Because of the pandemic, there has been an upswing in business for the company due to the demand for testing equipment. This has lead to Kinematic having to hire more employees in order to keep up with this demand.

As for the overall market, there is massive growth being predicted as demand for hands-off automation systems continues. Many businesses have been able to keep up operations and keep their employees safe due to automated machinery. Many outlets are predicting huge number increases with “Fortune Business Insights” predicting the market size could reach $296.70 Billion by 2026.

Source:

https://www.globenewswire.com/news-release/2020/07/08/2059408/0/en/Industrial-Automation-Market-Size-to-Hit-USD-296-70-Billion-till-2026-Increasing-Adoption-of-Advanced-Technology-to-Bolster-Growth-Fortune-Business-Insights.html

SUMMARY:

Issues:

Kinematic Automation tends to pop up on lists of different automation companies when it comes to national-level coverage. For example, we appeared in a list with other automation companies in a report about the overall reagent dispenser market on “Reports Watch.” However our

competitors tend to get individual recognition on the national level, i.e they get an entire article/ report dedicated to just them. We mainly get recognized that way on the local level- it tells me that our marketing reach isn't very far despite us having quality content when it comes to advertising.

We also face the risk of potential business slowdown after the pandemic subsides. Kinematic is no stranger to layoffs due to slowdowns and this is in part due to us mainly catering to the medical field and not expanding our horizon.

Source: https://reportswatch.com/2020/07/30/reagent-dispensers-market-size-increasing-trend-diversity-analysis-future-scope-analysis-featuring-industry-top-key-players-by-2027/

Solution:

The marketing reach issue may be in part to our lack of social media presence. I know that customers tend to be picky when it comes to us posting anything related to what they purchased while it's being assembled. My suggestion would be to save pictures and videos of our build process and post them after the machine has been shipped off. If we time it right, we could have more consistent posts that could help with our following. This in turn can help us increase our marketing reach. Another idea would be to reach out to automation and tech magazines to see if we can be profiled. I see that JR Automation's Twitter feed is them retweeting news coverage of their company which is something we can try and emulate. I also believe that reaching out to the agriculture and industrial market is a great idea and can keep a steady flow of demand coming into Kinematic. This works especially well because we are located in a heavy agriculture area. All of our biggest competitors have a diverse portfolio of customers and I think that would greatly benefit us if we did the same.

Benefits of Correction:

Kinematic has had to have layoffs before due to a downturn in business and this could help prevent another slow down from happening. Steady business is the best thing for everyone.

Kinematic Automation SWOT Analysis

Strengths	**Weaknesses**
● Reliable support ● Quality builds ● Ease of use ● One of the few who focuses on lateral flow builds.	● Not enough social media presence ● Focusing on mainly medical industry ● Overall marketing reach ● Remote support for customers
Opportunities	**Threats**
● Agricultural market ● Industrial market ● Growing demand in automation market ● Medical equipment production	● Post COVID-19 slowdown ● Global pandemic ● Economic downturn

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