# gaitFORCE Portable Gait Analyzer

## Advanced Motion Technologies, Inc.


## Virtual Athletic Training (Current Focus)

### Problem

For the runner:
- ◆ Pedometers are inaccurate
- ◆ GPS solutions are expensive
- ◆ Neither provides body movement data

For the shoe manufacturer:
- ◆ Current training devices work with any shoe
- ◆ There is less brand loyalty

### Solution

For the runner:
- ◆ Increased accuracy compared to a pedometer
- ◆ Lower cost than a GPS
- ◆ Motion related data: stride length, contact force, etc.

For the shoe manufacturer:
- ◆ Device will only work with approved shoe
- ◆ Increased brand loyalty and market share


(Illustrative mockup: Garmin and Alberto Salazar do not endorse this product)

### Market Data

- ◆ U.S. Running shoe market: $2.5 billion (2008)
- ◆ Nike's market share jumped from 48% to 61% in the two years after the release of the Nike+ Sports Kit
- ◆ 450,000 Nike+ Sports Kits were sold in the first 2 months
- ◆ 3,000,000 Nike+ Shoes were sold in the first 5 months
- ◆ 40% of Nike+ users convert to Nike brand running shoes

### Competition

| Features | gaitFORCE | Nike+ | GPS |
|---|---|---|---|
| Distance, Speed | ✓ | ✓ | ✓ |
| Calories Burned | ✓ | ✓ | ✓ |
| Stride Length, Stride Rate | ✓ | | |
| Incline Grade | ✓ | | ☐ |
| Contact Time, Contact Force | ✓ | | |
| Shoe Rotation, Wear Out Detection | ✓ | | |
| Effort Level | ✓ | | |
| Heel Strike vs Mid-foot | ✓ | | |
| High Accuracy Over Distance, Map Route | | | ✓ |
| Low Power Consumption | | ✓ | |
| Low Cost | ☐ | ✓ | |
| Can be Used with Any Shoe | | ☐ | ✓ |

✓ = Yes, ☐ = Somewhat

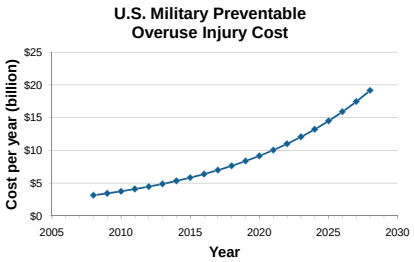
### Strategy

**Stage 1a:** Build a prototype with the assistance of Dr. Bamberg and **Synapse Product Development**
**Stage 1b:** Develop implementation strategy with cost assumptions and financial projections
**Stage 2:** Use industry connections through Synapse to shop around the prototype for licensing or acquisition

## Injury Prevention (Future Markets)

### Problem

Preventable overuse injuries force U.S. Military soldiers to go on inactive duty and sideline professional athletes




- ◆ 14.2% of U.S. Military personnel suffer a foot, ankle, or knee overuse injury per year
- ◆ Each injury averages 11 days of inactive duty
- ◆ Cost to U.S. government **$1.84 billion in lost time** and **$1.30 billion in medical expenses** in 2008
- ◆ Costs increase per year: 10.8% lost time, 6.8% medical

### Solution

By monitoring critical gait factors, **gaitFORCE** will:
- ◆ Assist in preventing overuse injuries
- ◆ Monitor and assist in injury rehabilitation
- ◆ Monitor and enhance performance

#### Soccer

**David Beckham**
• Failed recovery after ankle injury
• 7 missed games
• **$2.52 million** cost

#### Basketball

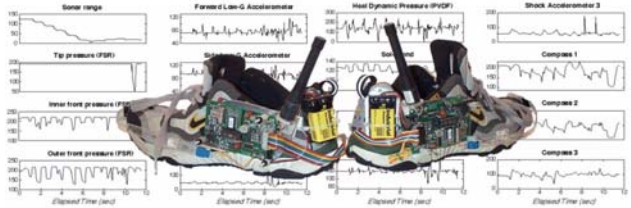
**Kobe Bryant**
• Plantar fasciitis
• 5 missed games
• **$1.188 million** cost

**Grant Hill**
• Overuse ankle injury
• 281 missed games
• **$39.282 million** cost

**Wally Szczerbiak**
• Plantar fasciitis
• 53 missed games
• **$5.17 million** cost

## gaitFORCE Technology

- ◆ MEMs gyro rate sensors and accelerometers
  Measures shoe motion in all three planes
- ◆ Removable components
  Does not require large investment when shoes wear out
- ◆ Transmit data wirelessly
  Data can be analyzed in real-time
  Or stored for post-processing
- ◆ Expandable system components
  Pressure pads and additional motion sensors
  For more medically relevant data
- ◆ US Patent No. 6,836,744
  Portable system for analyzing human gait
  Sole assignee: AMT, Inc.
- ◆ Component cost under $45
  3-axis accelerometer ($5x2); 1-axis gyroscope ($9x2); PIC controller ($1x3); telemetry ($2.5x3); battery ($2x2); casing, etc. (~$2)



*Gait Shoe project, Dr. Stacy Morris Bamberg of MIT Media Labs*

## AMT Team

### Core Founders

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PhD, Materials Sci & Eng

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MS, Biomechanics

### Science Advisory Board

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