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# PROJECT PROPOSAL

# Agami Robotics BD (আগামী রোবটিক্স বিডি)

## Democratizing STEM Education Through Affordable Robotics

**Inspiring Youth to Innovate | তরুণদের উদ্ভাবনে অনুপ্রাণিত**

**Submitted to:** iDEA University Activation Program  
**ICT Division, Government of Bangladesh**

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## EXECUTIVE SUMMARY

Agami Robotics BD addresses the critical gap in Bangladesh’s STEM education by providing affordable, locally-adapted robotics kits with Bengali content. Our mission is to democratize hands-on technology education, making it accessible to the 70% of students currently excluded due to high costs and language barriers.

**Key Highlights:** - **Target Market:** 10,000+ students across Bangladesh - **Funding Request:** ৳10 Lakh (BDT 1,000,000) pre-seed grant - **Social Impact:** Bridge theoretical-practical gap in STEM education - **Economic Model:** B2C, B2B, and competition-focused revenue streams - **Competitive Advantage:** First Bengali-language robotics education ecosystem

**Financial Projections:** - Break-even: Month 8 - Year 1 Revenue: ৳15 Lakh - Year 2 Revenue: ৳35 Lakh - Students Served: 1,500+ in first two years

## 1. PROBLEM STATEMENT

### 1.1 The STEM Education Crisis in Bangladesh

Bangladesh faces a fundamental challenge in STEM education that threatens our competitiveness in the global digital economy. Despite having talented students, three critical barriers prevent access to quality hands-on learning:

#### **Problem #1: Economic Barrier**

* High-quality robotics kits cost ৳8,000-15,000+
* 85% of Bangladeshi families cannot afford these tools
* Schools and colleges lack budget for modern lab equipment
* Import duties and taxes increase costs by 40-60%

#### **Problem #2: Language Barrier**

* All existing robotics kits use English-only documentation
* 70% of students are more comfortable with Bengali instruction
* National curriculum students are particularly excluded
* Technical terminology creates additional comprehension barriers

#### **Problem #3: Infrastructure Gap**

* Limited hands-on STEM facilities in educational institutions
* Theory-heavy curriculum with minimal practical application
* Lack of local technical support and mentorship
* No competition-ready training resources

### 1.2 Market Evidence

**Educational Statistics:** - 20+ million students in Bangladesh’s education system - Only 3% have access to modern STEM lab facilities - 0.5% participate in robotics/technology competitions - 40% of engineering graduates lack practical skills

**Economic Impact:** - Bangladesh imports ৳200+ crore worth of educational technology annually - Local STEM innovation participation remains under 1% - Skills gap in emerging technology sectors continues to widen

## 2. SOLUTION OVERVIEW

### 2.1 Agami Robotics BD: Complete Ecosystem Approach

Unlike traditional importers, we’re building Bangladesh’s first comprehensive robotics education ecosystem:

#### **Core Solution Components:**

**1. Affordable Robotics Kits** - 50-60% cost reduction through strategic local sourcing - Arduino-compatible platforms for universal compatibility - Modular design allowing progressive skill building - Quality components meeting international standards

**2. Bengali Learning Framework** - Step-by-step tutorials in Bengali - Visual learning through video content - Cultural context in project examples - Progressive difficulty levels

**3. Competition Preparation** - Kits specifically designed for science fairs - Programming olympiad preparation materials - National competition project templates - Performance optimization guides

**4. Local Support Network** - Bengali-speaking technical support team - Community building through workshops - Peer learning and collaboration platforms - Regular skill development sessions

### 2.2 Product Portfolio

#### **Tier 1: Beginner Robotics Kit - ৳2,500**

**Target:** Students new to robotics (Class 6-10) - Arduino-compatible microcontroller - 10+ sensors (ultrasonic, temperature, light, etc.) - Comprehensive Bengali manual (50+ pages) - 5 progressive project tutorials - Online support community access

#### **Tier 2: Advanced Competition Kit - ৳4,500**

**Target:** Competition participants and advanced learners - Premium components with extended capabilities - 20+ sensors and actuators - Video tutorial series (10+ hours) - Competition-specific projects - 1-year technical support - Performance optimization tools

#### **Tier 3: Institution Bundle - ৳35,000**

**Target:** Schools, colleges, and training centers - 10 complete student kits - Teacher training and certification - Curriculum integration guide - Bulk technical support - Workshop materials and resources

## 3. MARKET ANALYSIS

### 3.1 Target Market Segmentation

#### **Primary Market (Direct-to-Consumer)**

* **Size:** 500,000+ students interested in STEM
* **Demographics:** Age 12-22, urban and semi-urban areas
* **Characteristics:** Tech-curious, competition-oriented, career-focused
* **Revenue Potential:** 60% of total business

#### **Secondary Market (Institutional)**

* **Size:** 1,000+ educational institutions
* **Types:** Private schools, coaching centers, universities
* **Budget Range:** ৳50,000-500,000 annually for lab equipment
* **Revenue Potential:** 30% of total business

#### **Tertiary Market (Competition & Events)**

* **Participants:** 10,000+ annual competition participants
* **Events:** Science fairs, robotics olympiads, maker fairs
* **Spending:** ৳5,000-20,000 per participant
* **Revenue Potential:** 10% of total business

### 3.2 Competitive Analysis

#### **Current Market Players:**

1. **International Importers** (Arduino, Raspberry Pi kits)
   * High pricing (৳8,000-15,000+)
   * English-only documentation
   * Limited local support
2. **Local Electronics Vendors**
   * Component-only sales
   * No educational framework
   * Inconsistent quality

#### **Our Competitive Advantage:**

* **Cost Leadership:** 50-60% lower pricing
* **Localization:** Bengali-first approach
* **Education Focus:** Complete learning ecosystem
* **Community Building:** Long-term student relationships

## 4. BUSINESS MODEL

### 4.1 Revenue Streams

#### **Stream 1: Direct-to-Consumer Sales (60%)**

**Channels:** - E-commerce platform (website + social media) - Direct sales through educational events - Retail partnerships with bookshops and electronics stores - Student referral programs

**Pricing Strategy:** - Competitive pricing 50% below imports - Volume discounts for bulk purchases - Seasonal promotions during competition seasons - Flexible payment plans for students

#### **Stream 2: Institutional Partnerships (30%)**

**Approach:** - Direct sales to educational institutions - Partnership programs with schools and colleges - Government procurement participation - NGO and development program collaborations

**Value Proposition:** - Complete lab setup solutions - Teacher training and support - Curriculum integration assistance - Long-term maintenance partnerships

#### **Stream 3: Competition & Events (10%)**

**Services:** - Competition preparation workshops - Event sponsorships and partnerships - Specialized competition kits - Technical mentoring services

### 4.2 Operations Model

#### **Supply Chain:**

* Local component sourcing (70% of parts)
* Strategic partnerships with electronics manufacturers
* Quality control and testing protocols
* Efficient inventory management

#### **Distribution:**

* Online-first sales strategy
* Dhaka-based fulfillment center
* Nationwide courier partnerships
* Local pickup points in major cities

#### **Customer Support:**

* Bengali-language technical support
* Online community forums
* Video tutorial library
* Regular skill development workshops

## 5. FINANCIAL PROJECTIONS

### 5.1 Funding Request: ৳10 Lakh (BDT 1,000,000)

#### **Fund Allocation:**

| **Category** | **Amount** | **Percentage** | **Purpose** |
| --- | --- | --- | --- |
| Initial Inventory | ৳6,00,000 | 60% | First batch of components and kits for 200+ units |
| Operations Staff | ৳2,00,000 | 20% | Part-time operations assistant salary (6 months) |
| Marketing Campaign | ৳1,50,000 | 15% | Digital marketing, content creation, student outreach |
| Contingency | ৳50,000 | 5% | Unexpected expenses and operational buffer |

### 5.2 Revenue Projections

#### **Year 1 Financial Timeline:**

| **Month** | **Units Sold** | **Revenue** | **Cumulative** | **Key Milestones** |
| --- | --- | --- | --- | --- |
| 1-2 | Setup Phase | ৳0 | ৳0 | Inventory procurement, team building |
| 3-4 | 25 units | ৳1,00,000 | ৳1,00,000 | Product launch, initial customers |
| 5-6 | 40 units | ৳1,75,000 | ৳2,75,000 | Break-even achieved |
| 7-8 | 60 units | ৳2,50,000 | ৳5,25,000 | Marketing scale-up |
| 9-10 | 80 units | ৳3,25,000 | ৳8,50,000 | Institutional partnerships |
| 11-12 | 100 units | ৳4,00,000 | ৳12,50,000 | Competition season peak |

**Year 1 Total:** ৳15,00,000 revenue, 500+ students served

#### **3-Year Financial Projection:**

| **Year** | **Revenue** | **Units Sold** | **Students Served** | **Growth Rate** |
| --- | --- | --- | --- | --- |
| Year 1 | ৳15,00,000 | 500 | 500 | Base Year |
| Year 2 | ৳35,00,000 | 1,200 | 1,200 | 133% growth |
| Year 3 | ৳65,00,000 | 2,000 | 2,500 | 86% growth |

### 5.3 Profitability Analysis

#### **Unit Economics (Average):**

* Average Selling Price: ৳3,500
* Cost of Goods Sold: ৳1,800 (51%)
* Gross Margin: ৳1,700 (49%)
* Operating Expenses: ৳800 per unit
* Net Profit Margin: ৳900 (26%)

#### **Break-even Analysis:**

* Fixed Monthly Costs: ৳75,000
* Break-even Units: 45 units/month
* Timeline to Break-even: Month 6

## 6. MARKETING & SALES STRATEGY

### 6.1 Go-to-Market Strategy

#### **Phase 1: Foundation Building (Months 1-6)**

**Objectives:** - Establish brand presence in Dhaka and Chittagong - Build initial customer base of 200+ students - Create content library and community

**Tactics:** - Social media marketing (Facebook, YouTube) - Educational institution partnerships - Science fair and competition presence - Influencer collaborations with educators

#### **Phase 2: Scaling & Expansion (Months 7-12)**

**Objectives:** - Expand to divisional cities - Achieve 500+ student customer base - Establish institutional partnerships

**Tactics:** - Digital advertising campaigns - Referral and affiliate programs - Workshop and seminar series - Media coverage and PR initiatives

### 6.2 Customer Acquisition Strategy

#### **Digital Marketing:**

* **Facebook & Instagram:** Targeted ads to students and parents
* **YouTube:** Educational content and product demonstrations
* **Website SEO:** Optimized for robotics and STEM education keywords
* **Google Ads:** Competition and education-related searches

#### **Educational Outreach:**

* School and college visits
* Science teacher training programs
* Student club partnerships
* Competition sponsorships

#### **Community Building:**

* Online forums and support groups
* Regular workshops and maker sessions
* Student project showcases
* Peer learning networks

## 7. OPERATIONS PLAN

### 7.1 Organizational Structure

#### **Founder & CEO: Tarak Md Shabbir**

**Responsibilities:** - Strategic direction and vision - Product development and innovation - Stakeholder relationships - Technical leadership

#### **Operations Assistant (Part-time)**

**Responsibilities:** - Inventory management - Order fulfillment - Customer support - Quality control

#### **Future Hiring Plan (Year 1-2):**

* Technical Content Creator (Month 8)
* Sales & Marketing Associate (Month 12)
* Electronics Engineer (Month 18)

### 7.2 Operational Workflow

#### **Product Development Cycle:**

1. Market research and needs assessment
2. Component sourcing and testing
3. Bengali documentation creation
4. Video tutorial production
5. Beta testing with student groups
6. Final product launch

#### **Order Fulfillment Process:**

1. Online order placement
2. Inventory verification
3. Kit assembly and quality check
4. Packaging with Bengali materials
5. Shipment via courier partners
6. Customer support follow-up

### 7.3 Quality Assurance

**Product Quality:** - Component testing protocols - Assembly quality checks - Documentation accuracy verification - Customer feedback integration

**Service Quality:** - Response time targets (< 24 hours) - Bengali language support standards - Technical accuracy requirements - Customer satisfaction tracking

## 8. TECHNOLOGY & INNOVATION

### 8.1 Technical Infrastructure

#### **Product Platform:**

* Arduino-compatible microcontrollers
* Open-source software framework
* Modular hardware design
* Cross-platform compatibility

#### **Digital Platform:**

* E-commerce website (https://agami-robotics-bd.vercel.app/)
* Customer relationship management system
* Online learning platform
* Community forums and support

### 8.2 Innovation Pipeline

#### **Near-term Developments (6-12 months):**

* Mobile app for kit programming
* Advanced sensor modules
* Competition-specific project templates
* Teacher training certification program

#### **Long-term Vision (1-3 years):**

* AI and machine learning modules
* IoT integration capabilities
* Virtual reality learning experiences
* Export market expansion

## 9. SOCIAL IMPACT & SUSTAINABILITY

### 9.1 Educational Impact

#### **Direct Benefits:**

* **Accessibility:** 50-60% cost reduction makes robotics education accessible
* **Language Inclusion:** Bengali content serves 70% of student population
* **Skill Development:** Hands-on learning bridges theory-practice gap
* **Competition Readiness:** Specialized training for national competitions

#### **Systemic Changes:**

* Increased STEM participation rates
* Improved international competition performance
* Enhanced technical skills in graduate workforce
* Reduced dependency on imported educational technology

### 9.2 Economic Impact

#### **Local Economy:**

* **Import Substitution:** Reduced foreign currency outflow
* **Job Creation:** Direct and indirect employment opportunities
* **Skill Enhancement:** Improved technical capabilities in workforce
* **Innovation Ecosystem:** Foundation for local tech entrepreneurship

#### **National Development:**

* Alignment with Digital Bangladesh vision
* Support for 4th Industrial Revolution readiness
* Contribution to UN Sustainable Development Goals (SDG 4: Quality Education)

### 9.3 Environmental Considerations

**Sustainable Practices:** - Local sourcing to reduce carbon footprint - Modular design for component reusability - Digital documentation to minimize paper usage - Recycling programs for electronic components

## 10. RISK ANALYSIS & MITIGATION

### 10.1 Business Risks

#### **Risk 1: Market Competition**

**Probability:** Medium  
**Impact:** High  
**Mitigation:** - Continuous product innovation - Strong brand building in Bengali market - Customer loyalty through superior support - Patent protection for key innovations

#### **Risk 2: Supply Chain Disruption**

**Probability:** Medium  
**Impact:** Medium  
**Mitigation:** - Multiple supplier relationships - Strategic inventory buffers - Local manufacturing partnerships - Alternative component sourcing

#### **Risk 3: Technology Obsolescence**

**Probability:** Low  
**Impact:** High  
**Mitigation:** - Continuous technology monitoring - Flexible platform architecture - Regular product updates - Industry partnership and collaboration

### 10.2 Financial Risks

#### **Risk 1: Funding Shortfall**

**Probability:** Low  
**Impact:** High  
**Mitigation:** - Conservative financial planning - Multiple funding source exploration - Phased expansion approach - Revenue diversification

#### **Risk 2: Slower Than Expected Sales**

**Probability:** Medium  
**Impact:** Medium  
**Mitigation:** - Flexible pricing strategies - Enhanced marketing efforts - Product offering optimization - Customer feedback integration

### 10.3 Operational Risks

#### **Risk 1: Key Personnel Dependency**

**Probability:** High  
**Impact:** Medium  
**Mitigation:** - Documentation of all processes - Cross-training of team members - Gradual team expansion - Succession planning

#### **Risk 2: Quality Control Issues**

**Probability:** Low  
**Impact:** High  
**Mitigation:** - Rigorous testing protocols - Supplier quality agreements - Customer feedback systems - Continuous improvement processes

## 11. IMPLEMENTATION TIMELINE

### 11.1 Pre-Launch Phase (Months 1-3)

#### **Month 1: Setup & Planning**

* Secure funding and legal registration
* Establish supplier relationships
* Hire operations assistant
* Website and digital platform enhancement

#### **Month 2: Product Development**

* Finalize product specifications
* Complete Bengali documentation
* Produce initial video tutorials
* Conduct beta testing with 10 students

#### **Month 3: Market Preparation**

* Launch marketing campaigns
* Establish distribution partnerships
* Build initial inventory (50 units)
* Train customer support team

### 11.2 Launch Phase (Months 4-6)

#### **Month 4: Product Launch**

* Official product launch event
* Begin direct-to-consumer sales
* Initiate social media campaigns
* Start educational institution outreach

#### **Month 5: Market Penetration**

* Scale marketing efforts
* Launch referral programs
* Participate in education fairs
* Begin institutional partnerships

#### **Month 6: Optimization**

* Analyze customer feedback
* Optimize product offerings
* Enhance support systems
* Achieve break-even point

### 11.3 Growth Phase (Months 7-12)

#### **Months 7-9: Scaling**

* Expand to new geographic markets
* Launch advanced product lines
* Increase production capacity
* Develop institutional partnerships

#### **Months 10-12: Consolidation**

* Optimize operations for efficiency
* Launch teacher training programs
* Plan Year 2 expansion
* Prepare for additional funding rounds

## 12. SUCCESS METRICS & KPIs

### 12.1 Financial Metrics

**Revenue Targets:** - Month 6: ৳2,75,000 (Break-even) - Month 12: ৳15,00,000 (Year 1 target) - Month 24: ৳35,00,000 (Year 2 target)

**Profitability Metrics:** - Gross Margin: >45% - Net Profit Margin: >20% - Customer Acquisition Cost: <৳500 - Customer Lifetime Value: >৳5,000

### 12.2 Impact Metrics

**Student Reach:** - Year 1: 500+ students served - Year 2: 1,200+ students served - Year 3: 2,500+ students served

**Educational Impact:** - 50+ schools and colleges as customers - 100+ competition participants using our kits - 80% customer satisfaction rating - 60% customer retention rate

### 12.3 Market Metrics

**Market Penetration:** - 5% market share in target segment (Year 2) - 10 major institutional partnerships - 3 divisional city presence - 25% brand recognition in target market

## 13. CONCLUSION & CALL TO ACTION

### 13.1 Project Significance

Agami Robotics BD represents more than a business opportunity—it’s a transformative initiative that addresses fundamental gaps in Bangladesh’s STEM education ecosystem. By democratizing access to robotics education through affordable, locally-adapted solutions, we’re not just building a company; we’re building the foundation for Bangladesh’s technological future.

### 13.2 Alignment with National Goals

Our project directly supports: - **Digital Bangladesh Vision 2041** - **4th Industrial Revolution Preparedness** - **UN SDG 4: Quality Education** - **National Youth Development Goals** - **STEM Education Enhancement Initiatives**

### 13.3 Why iDEA Partnership is Critical

The iDEA University Activation Program provides the perfect launchpad for Agami Robotics BD because:

**1. Strategic Alignment:** Your focus on socially impactful student ventures perfectly matches our mission

**2. Ecosystem Support:** Access to mentorship, networking, and government connections essential for scaling

**3. Validation Platform:** The program provides credibility and validation needed for future funding rounds

**4. Learning Opportunity:** Entrepreneurship training will strengthen business execution capabilities

**5. Market Access:** Connection to universities and students nationwide accelerates market penetration

### 13.4 Expected Outcomes with iDEA Support

**Immediate Impact (6 months):** - Launch product line serving 200+ students - Achieve operational break-even - Establish market presence in Dhaka and Chittagong

**Medium-term Impact (1-2 years):** - Serve 1,500+ students across Bangladesh - Generate ৳35+ Lakh annual revenue - Create 10+ direct and indirect jobs - Establish 20+ institutional partnerships

**Long-term Vision (3-5 years):** - Become Bangladesh’s leading robotics education platform - Serve 10,000+ students annually - Expand to regional markets (South Asia) - Build comprehensive STEM education ecosystem

### 13.5 Request for Support

We respectfully request the iDEA University Activation Program’s support through:

**1. Pre-seed Funding:** ৳10 Lakh grant for initial operations and market launch

**2. Mentorship Access:** Guidance from experienced entrepreneurs and industry experts

**3. Network Connections:** Introduction to potential partners, customers, and future investors

**4. Platform Utilization:** Access to program resources, workshops, and ecosystem benefits

### 13.6 Our Commitment

In return, we commit to: - **Transparent Reporting:** Regular progress updates and financial accountability - **Program Advocacy:** Active participation and positive representation of iDEA initiatives - **Ecosystem Contribution:** Mentoring future program participants and sharing learnings - **Social Impact:** Measurable contribution to Bangladesh’s STEM education improvement

## 14. APPENDICES

### Appendix A: Financial Models

*Detailed financial projections and cash flow analysis*

### Appendix B: Market Research Data

*Supporting market analysis and competitor research*

### Appendix C: Product Specifications

*Technical details and component lists for all product tiers*

### Appendix D: Website Demonstration

**Live Prototype:** https://agami-robotics-bd.vercel.app/ *Note: Prototype website with template data demonstrating concept*

### Appendix E: Letters of Intent

*Potential customer and partner interest confirmations*

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*“আগামী রোবটিক্স বিডি - আগামীর বাংলাদেশ গড়ব আমরা”*  
*“Agami Robotics BD - Building Tomorrow’s Bangladesh Together”*

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